



**UNIVERSITI PUTRA MALAYSIA**

***SUSTAINABLE SUPPLY CHAIN AND PERFORMANCE OF FIRMS IN  
THE SERVICE INDUSTRY***

**TAY MEE YEAN**

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BERILMU BERBAKTI

**SUSTAINABLE SUPPLY CHAIN AND PERFORMANCE OF FIRMS IN  
THE SERVICE INDUSTRY**

By

**TAY MEE YEAN**

**Thesis Submitted to the School of Graduate Studies, Universiti Putra Malaysia,  
in Fulfilment of the Requirement for the Degree of Doctor of Philosophy**

**April 2018**

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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

## **SUSTAINABLE SUPPLY CHAIN AND PERFORMANCE OF FIRMS IN THE SERVICE INDUSTRY**

By

**TAY MEE YEAN**

**April 2018**

**Chair : Azmawani Abd Rahman, PhD**  
**Faculty : Economics and Management**

Malaysia realizes that investing in environmental protection is becoming increasingly important. Businesses can assist in protecting the environment by adopting green business practices or, in other words, by having a sustainable business. The fast-changing world and increasingly unstable working environment mean that building sustainable practices are more important than ever before if organizations are to succeed in the long term. Therefore, the main intention of this study was to investigate the antecedents and consequences of sustainable supply chain management practices in the service industry through the resource-based view (RBV) theory and stakeholder theory. Previous studies only focused on environmental issues, while neglecting the social aspects. Multiple challenges continue to impede the widespread adoption of sustainability across environmental, social, and economic dimensions. Organizations should not underscore how supply chain sustainability translates into measurable business performance. Firms are exposed to the challenges posed by a competitive business environment that is both complex and unpredictable. A lack of knowledge often drives behaviors and practices that produce unsustainable outcomes. The objective of this study was to gauge the antecedents and consequences of sustainable supply chain management (SSCM) practices, which incorporate social, environment and economic aspects, and the moderating effect of knowledge management on firm performance in the Malaysian service industry. Based on 202 usable responses from the service sector, the Statistical Package for the Social Sciences (SPSS) and the partial least squares (PLS) were applied in this study to test the proposed hypotheses. The results showed that service innovation and stakeholder pressure are positively related to SSCM practices. It was found that the social practices of SSCM do not have a significant influence on firm performance. However, the interaction between knowledge management and social practices has a significant influence on firm performance. This study extended the RBV theory by adding service innovation and knowledge management to the context of service firms

and enhanced the study of SSCM practices. Besides that, it also extended the stakeholder theory by adding antecedents to assess their influence on SSCM practices. On the practical side, service firms can apply service innovation as a strategy to improve their SSCM practices. Furthermore, service firms should consider having a well-developed knowledge management to strengthen the performance of their firm so as to stay competitive in the future.



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

## **RANTAIAN BEKALAN LESTARI DAN PRESTASI SYARIKAT DI DALAM INDUSTRI PERKHIDMATAN**

Oleh

**TAY MEE YEAN**

**April 2018**

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Malaysia menyedari melabur dalam perlindungan alam sekitar menjadi semakin penting. Perniagaan boleh membantu dalam melindungi alam sekitar dengan menggunakan perniagaan hijau, dengan erti kata lain, perniagaan yang lestari. Dunia yang pantas berubah dan persekitaran kerja yang semakin tidak terjamin bermakna bahawa membina amalan lestari adalah lebih penting berbanding dengan jika organisasi tersebut ingin berjaya dalam jangka masa panjang. Oleh itu, objektif utama kajian ini adalah untuk mengkaji faktor dan akibat dari amalan pengurusan rantai bekalan lestari dalam industri perkhidmatan melalui Teori *Resource-Based View* (RBV) dan Teori Pemegang Taruh. Kajian terdahulu hanya memberi tumpuan kepada isu-isu alam sekitar, manakala mengabaikan aspek sosial. Pelbagai cabaran terus menghalang pengekal kelestarian secara meluas dalam dimensi alam sekitar, sosial dan ekonomi. Organisasi tidak harus menekankan bagaimana kelestarian rantai bekalan diterjemahkan ke dalam prestasi perniagaan yang boleh diukur. Firma terdedah kepada cabaran yang dipaparkan dengan persekitaran perniagaan yang berdaya saing di mana sangat kompleks dan tidak dapat diramalkan. Kekurangan pengetahuan sering mendorong tingkah laku dan amalan yang menghasilkan keputusan yang tidak lestari. Objektif kajian ini adalah untuk mengukur faktor dan akibat daripada amalan pengurusan rantai bekalan lestari (SSCM), dimana merangkumi aspek sosial, alam sekitar dan ekonomi serta kesan sederhana pengurusan pengetahuan kepada prestasi firma industri perkhidmatan Malaysia. Berdasarkan 202 respons yang boleh diambil dari sektor perkhidmatan, Pakej Statistik untuk Sains Sosial (SPSS) dan Partial Least Sequence (PLS) telah digunakan dalam kajian ini untuk menguji hipotesis yang dicadangkan. Keputusan menunjukkan bahawa inovasi perkhidmatan dan tekanan pihak berkepentingan didapati mempunyai hubungan positif dengan amalan SSCM. Amalan sosial dalam SSCM didapati tidak mempengaruhi prestasi firma. Walau bagaimanapun, ia didapati penting apabila pengurusan pengetahuan berinteraksi antara amalan sosial dan

prestasi firma. Kajian ini telah memperluaskan teori RBV dengan menambahkan inovasi perkhidmatan dan pengurusan pengetahuan kepada konteks firma perkhidmatan dan meningkatkan kajian amalan SSCM. Di samping itu, ia juga memperluaskan ST dengan menambah faktor untuk menilai pengaruh mereka terhadap amalan SSCM. Di sisi praktikal, firma perkhidmatan boleh menggunakan inovasi perkhidmatan sebagai strategi untuk meningkatkan amalan SSCM mereka. Selain itu, firma perkhidmatan harus mempertimbangkan untuk memiliki pengurusan pengetahuan yang maju untuk mengukuhkan prestasi firma mereka untuk kekal berdaya saing di masa hadapan.



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I certify that a Thesis Examination Committee has met on 17 April 2018 to conduct the final examination of Tay Mee Yean on her thesis entitled "Sustainable Supply Chain and Performance of Firms in the Service Industry" in accordance with the Universities and University Colleges Act 1971 and the Constitution of the Universiti Putra Malaysia [P.U.(A) 106] 15 March 1998. The Committee recommends that the student be awarded the Doctor of Philosophy.

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## LIST OF ABBREVIATIONS

AVE	Average Variance Extracted
CMV	Common Method Variance
CR	Composite Reliability
CSR	Corporate Social Responsible
EFA	Exploratory Factor Analysis
$f^2$	Effect Size
GDP	Gross Domestic Product
GHG	Greenhouse Gas
GRI	Global Reporting Initiatives
GSCM	Green Supply Chain Practices
ISO	International Organization for Standardization
KeTTHA	Kementerian Tenaga, Teknologi Hijau dan Air
KM	Knowledge Management
NGOs	Non-Governmental Organizations
NEM	New Economic Model
PE	Price-Earnings Ratio
PLS-SEM	Partial Least Square-Structural Equation Model
$Q^2$	Predictive Relevance
$R^2$	Coefficient of Determination
RBV	Resource Based View Theory
RM	Ringgit Malaysia
ROA	Return on Assets
ROE	Return on Equity
ROI	Return on Investment
SC	Supply Chain
SCI	Supply Chain Integration
SCM	Supply Chain Management
SCP	Supply Chain Performance
SI	Service Innovation
SMEs	Small and Medium-Sized Enterprises
SRMR	Standardized Root Means Square Error
SP	Stakeholders' Pressure
SPSS	Statistical Package for the Social Science
SSCM	Sustainable Supply Chain Management
VRIO	Valuable, Rare, Non-Imitable and Non-Substituable
VIF	Variance Inflation Factor
3BL	Triple Bottom Line

# CHAPTER 1

## INTRODUCTION

### 1.1 Chapter Overview

This chapter presents the background of the study, followed by an overview of the service industry in Malaysia, the plans and efforts of the Malaysian government to curb pollution, the problem statement, research questions, research objectives, significance of the study, scope of the study, definition of each key term, and the organization of the thesis. Last, but not least, a brief summary is provided to conclude this chapter. This study discussed the antecedents and consequences of sustainable supply chain management practices in the service industry and the moderating effect of knowledge management between sustainable supply chain management (SSCM) practices and firm performance.

### 1.2 Study Background

The total population in Malaysia for 2016 was 31.63 million people (Department of Statistics Malaysia, 2017). This was an increase of 14.3% compared to 6 years ago. A similar trend in population increase has been shown globally. We are living in a world of limited resources, where demand exceeds supply. The consumption of products and services will essentially increase, which can, in turn, put pressure on the industry to think of easy ways to supply more products and services in order to gain more profits. Hence, this will affect the availability of natural resources and the environment. Other than the depletion of natural resources, environmental protection has turned out to be a highly topical issue due to the increasing awareness of global climate change and natural disasters. In the 21<sup>st</sup> century, climate change and natural disasters are known to be the most pressing environmental problems faced by the world. Today, climate change is undoubtedly one of the most important global environmental challenges, where it will result in competition for new resources, territorial changes and disruption in trade patterns. Generally, climate change is occurring slowly and steadily. Since the Industrial Revolution, the effects of economic activities on the environment can be clearly seen. For instance, the composition of carbon dioxide in the atmosphere has been climbing non-stop since 1958. If current carbon dioxide (CO<sub>2</sub>) emissions are not controlled, there will be more than a doubling of atmospheric concentrations.

Besides, the deterioration of the environment, often referred to as environmental degradation, is threatening the earth's natural resources such as clean water supply, fossil fuels for energy, and food supplies. Many of these resources are non-renewable. When they run out of these natural resources, mankind will be forced to find new alternatives. Clean air and water supplies are currently at risk. In addition, more and

more beautiful, open spaces are disappearing as new buildings and factories are being built. To curb global warming, action must be taken by developing countries to avoid future increases in emission levels as their economies develop and populations grow, as was clearly captured by the Kyoto Protocol (Bos, My, Vu & Bulatao, 1994). As more consumers shift toward greener products and organizations, investing in environmental efforts may provide firms with new market opportunities through different environmental products and services (Ambec & Lanoie, 2008). The protection and development of environmental resources and social responsibility are areas of growing importance for consumers, businesses, governments and the society at large (Banerjee, Iyer, & Rajiv, 2003; Grinstein & Nisan, 2009; Peattie & Peattie, 2009).

There has been an increasing awareness for organizations in all industries to make efforts to be environmentally proactive in order to achieve a competitive advantage. Businesses can assist in protecting the environment by becoming part of green businesses or sustainable businesses (Porritt & Winner, 1988; Wanjohi, Gachoka, Kihoro & Ogutu, 2013). In addition, companies across all sectors can try to develop products/services and practices which can minimize the effects on the environment as part of their social responsibility practices and establish themselves in a new niche for consumers with environmental concerns. The service industry plays a vital role in the dissemination of environmentally sustainable products and services as well as in influencing purchasing behaviour through initiatives such as the provision of sustainable shopping bags, carbon footprint labelling and carbon offsetting schemes, as well as by promoting products that are locally grown and produced.

Early sustainability initiatives tended to focus on environmental issues. However, with the passage of time, they are increasingly adopting a triple bottom line approach to sustainability that involves the environmental, economic and social aspects (Ahi & Searcy, 2013). SSCM practices are becoming important in today's complex and volatile business environment. Through SSCM, the flows, operations, and activities within the supply chain can be improved, resulting in simultaneous environmental, economic and social gains. Therefore, this research focused on the issues of SSCM within the context of the Malaysian service industry, specifically on service innovation and stakeholder pressure as indicators that influence SSCM practices and the overall impact on business performance in terms of the financial performance and competitive advantage of service organizations with the interaction of knowledge management.

### **1.3 The Service Industry in Malaysia**

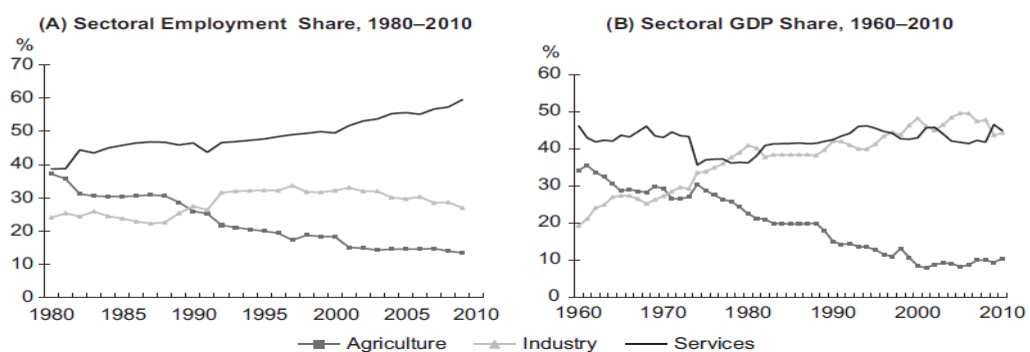
In today's competitive and dynamic environment, the services sector has successfully become one of the key drivers throughout the global economy, particularly in Malaysia. In addition, this sector is also assumed to play an important intermediary role in supporting businesses in all sectors of the economy. The services sector

generates high incomes and value-added economic activities which can, in turn, contribute to the economic transformation of the nation to fully-developed status by 2020. Malaysia is ranked 8<sup>th</sup> as a service nation among the 18 Asia Pacific countries in the Services Development Index (Official website of the Malaysian Investment Development Authority, 2015).

The Malaysian government has undertaken the development of the services sector as part of its blueprint to boost economic growth and to maintain the competitiveness and resilience of the economy (Bernama, 2014). In addition, the Deputy Finance Minister of Malaysia, Datuk Ahmad Maslan, has said that the government is generally supportive of entrepreneurs who want to start businesses, particularly in the services sector, by providing various loan schemes (The Star Online, April 2016). In the 2015 budget, RM 5 billion was allocated to the Services Sector Guarantee Scheme (SSGS) for SMEs in the services sector, with a maximum financing of RM 5 million and a 70% government guarantee to operate their businesses until the scheme is fully exhausted. According to Deputy Finance Minister, Datuk Chua Tee Yong, this scheme is specifically targeted at the services industry as this sector is a key driver of Malaysia's economy, contributing to more than 50% of the country's gross domestic product (GDP) (The Star Online, April, 2016).

The services sector is considered to be the leading sector in terms of GDP contribution for countries like Singapore, Brazil, US, Japan, Malaysia and India. Within the US\$ 70.2 trillion of the world's GDP in 2011, the share of the services sector was 67.5%. In developing countries, the share of the services sector was larger than that of the industrial sector in the 1950s and 1960s (Szirmai, 2005). According to Park and Shin (2012), the size of the service economy's contribution to the GDP was less than 50% in Malaysia. However, the share of employment in the services sector exceeded 60% in Malaysia in the year 2010, as can be seen in Figure 1.1.

#### Malaysia



**Figure 1.1:** Employment and GDP share by sectors

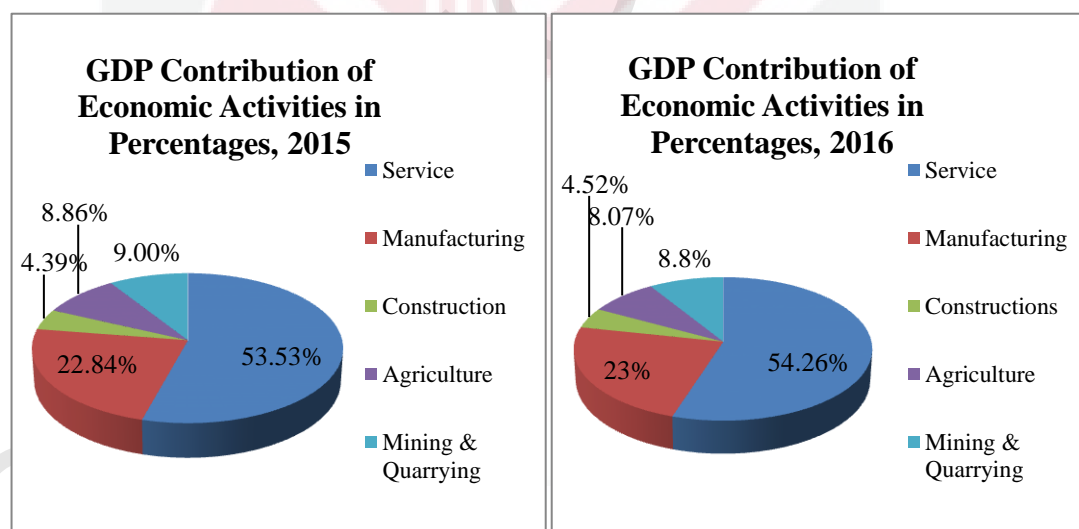
Source: Park and Shin (2012)

Moreover, a report by the Department of Statistics Malaysia indicated that the services industry in Malaysia contributed more than 50% of the overall GDP in the years 2010 and 2016 compared to other economic activities, as can be seen in Figure 1.2. From Table 1.1, it is obvious that the GDP contribution from the services industry has kept on increasing. It is the largest industry with the highest potential to drive the Malaysian economy. Figure 1.3 presents the percentage contribution of the sub-sectors to the overall GDP for the service industry in 2013 and 2014.

**Table 1.1: GDP Contributions from Year 2010-2016 in Ringgit Malaysia (RM)**

Sectors	2010 (RM million)	2011 (RM million)	2012 (RM million)	2013 (RM million)	2014 (RM million)	2015 (RM million)	2016 (RM million)
<b>GDP</b>	821,434	864,920	912,261	955,080	1,012,449	1,063,355	1,108,227
<b>Manufacturing</b>	192,493	202,960	211,921	219,152	232,527	242,903	254,725
<b>Services</b>	420,382	449,853	479,299	507,792	541,412	569,258	601,339
<b>Construction</b>	28,213	29,524	34,880	38,590	43,115	46,630	50,103
<b>Agriculture</b>	82,882	88,555	89,406	91,181	93,048	94,249	89,465
<b>Mining &amp; Quarrying</b>	89,793	85,373	86,751	87,789	90,707	95,508	97,563

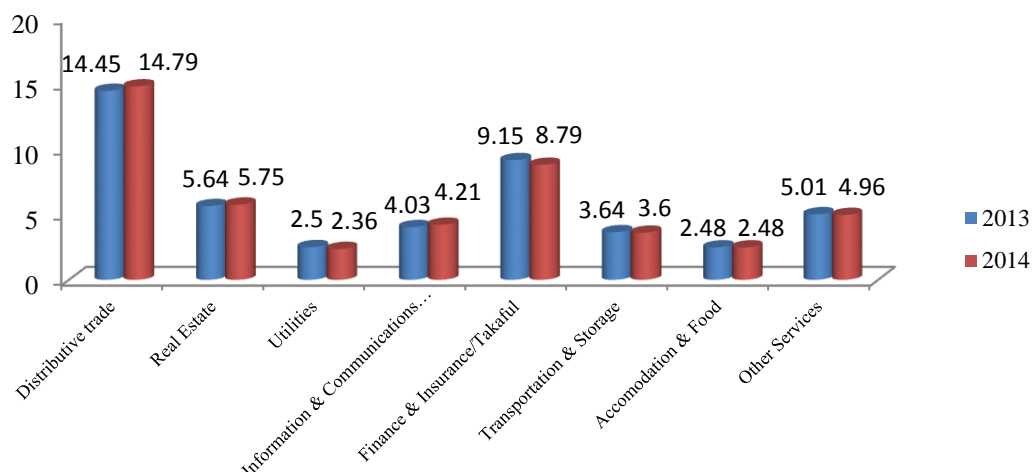
Source: Department of Statistics, Malaysia and Bank Negara Malaysia



**Figure 1.2: GDP Contribution of Economic Activities in Percentages, 2015 and 2016**

(Source: Department of Statistics, Malaysia and Bank Negara Malaysia)





**Figure 1.3: GDP Contribution of Services Sector, 2013 and 2014**

(Source: Department of Statistics, Malaysia)

Table 1.2 shows that the performance of the service sub-sectors for 2013-2015 was at the constant 2005 prices. The share of the GDP kept on increasing and was forecasted to increase to 55.4% in the year 2015. Moreover, Table 1.3 shows the employment by industry for the years 2013 and 2016. As presented, the services industry was performing well amongst the others.

**Table 1.2: Performance of Service Sub-Sectors for 2013-2015**

<b>Performance of Services Sector for 2013 – 2015 (at constant 2005 prices)</b>						
	<b>Change (%)</b>			<b>Share to GDP (%)</b>		
	<b>2013</b>	<b>2014</b>	<b>2015<sub>1</sub></b>	<b>2013</b>	<b>2014</b>	<b>2015<sub>1</sub></b>
<b>Intermediate services</b>						
Finance and insurance	1.8	2.0	1.4	9.1	8.8	8.5
Real estate and business services	7.5	7.8	7.1	5.7	5.7	5.8
Communication	10	9.9	9.6	4.1	4.2	4.4
Transport and storage	4.6	5.0	4.7	3.6	3.6	3.6
<b>Final services</b>						
Wholesale and retail trade	6.4	8.8	7.1	14.4	14.7	14.9
Accommodation and restaurant	5.7	6.2	5.9	2.5	2.5	2.5
Utilities	4.1	3.5	3.9	2.5	2.4	2.4
Other services	5.1	4.9	4.5	5.0	5.0	4.9
<b>Government services</b>						
	8.3	6.5	5.6	8.3	8.3	8.3
<b>Total</b>	<b>5.9</b>	<b>6.3</b>	<b>5.6</b>	<b>55.2</b>	<b>55.3</b>	<b>55.4</b>

<sub>1</sub> Estimate.  
Note: Total may not add up due to rounding

Source: Department of Statistics and Ministry of Finance, Malaysia.

From Table 1.3, it can be seen that the services industry contributed highly to employment in Malaysia compared to other industries. The share of total employment increased by 1.26% in 2016, and the total increase in employment numbers was 239.2('000) units. Correspondingly, the service industry can be regarded as one of the most important industries that boost the Malaysian economy. Thus, it is necessary to encourage local and foreign investments in the service industry. In the first quarter of 2015, a total of 588 projects in the services sector were approved with investments of RM 22.3 billion (38.9%), of which RM 19 billion was dominated by domestic investments (85.2%), while another RM3.3 billion was from foreign investments. These approved investments in service projects in turn offered employment to about 20,200 people (Official website of the Malaysian Investment Development Authority, 2015). The services sector is well able to compete with the main leading industry, which is manufacturing.

**Table 1.3: Employment by Industry**

<b>Employment by Industry, 2015-2016</b>								
	<b>('000)</b>				<b>Share of Total (%)</b>			
	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>
<b>Agriculture</b>	1694.0	1676.5	1753.9	1609.9	13.0	12.4	12.47	11.37
<b>Mining and quarrying</b>	81.6	77.7	104.4	96.3	0.6	0.6	0.74	0.68
<b>Manufacturing</b>	2183.6	2207.8	2322.7	2390.6	16.8	16.4	16.51	16.88
<b>Construction</b>	1227.2	1228.5	1309.9	1251.7	9.4	9.1	9.31	8.84
<b>Services</b>	7517.7	8002.8	8575.1	8814.3	57.8	59.4	60.97	62.23
<b>Total</b>	<b>13016.7</b>	<b>13483.4</b>	<b>14066</b>	<b>14162.8</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

According to the Chief Executive Officer of the Malaysian Investment Development Authority (MIDA), Dato' Azman Mahmud, the services sector is considered to be the next engine of growth to boost the Malaysian economy. As such, this industry is becoming more important to Malaysia. Investigations into the sustainable practices of firms within the service industry are relevant and significant. Moreover, various researchers have been focusing on the manufacturing industry in previous years, so it is timely to investigate the sustainable practices in the service industry.

#### **1.4 Plans and Efforts of the Malaysian Government to Curb Pollution**

Sustainability is most often defined as meeting the needs of the present without compromising the ability of future generations to meet their needs. The concept of sustainability consists of social (socially-responsible corporate employees, customers and suppliers), economic (profitable quality, flexibility, efficiency and

responsiveness) and environmental (environmental purchasing, cooperation with customers, internal environmental management and investment recovery) aspects. Moving towards sustainability might bring either/both positive or negative effect(s) to firms. Sustainability could represent an opportunity to consolidate diverse efforts under the concept of one umbrella and gain public recognition. On the other hand, sustainability could mean answering hard questions about the how and why of business practices, which could have a serious impact on business operations (Seuring & Müller, 2008).

Malaysia is facing a number of problems such as deforestation, pollution of inland and marine waters, soil and coastal erosion, overfishing and coral reef destruction, along with air pollution and the disposal of hazardous and communal waste due to rapid economic growth and industrialization in the past decade. Therefore, the country has realized that it is becoming increasingly important to invest in environmental protection. As a result, environmental awareness is on the rise, and it was emphasized by the Malaysian government in the 10<sup>th</sup> Malaysia Plan. Until now, the Malaysian government still continues to put efforts into intensifying green practices among industry players in the 11<sup>th</sup> Malaysia Plan (Prime Minister Malaysia, 2015). Thus, this research was consistent with the government's efforts to increase the level of awareness of Malaysians that environmental sustainability is a shared responsibility. All levels of society need to play their part in protecting the environment, not only in the management of tangibles such as solid and liquid household and industrial wastes, but also in intangibles such as the minimal consumption of electricity and water.

One of the goals of the New Economic Model (NEM) of Malaysia is to highlight sustainability. The current Prime Minister, Dato' Sri Mohd Najib Tun Razak mentioned that the NEM must consist of a commitment to sustainability, not only in economic activities, but also by considering the impact of economic development on the environment and valuable natural resources (The Star Online, 2016b). To achieve this, the Malaysian government will continue to pursue cooperative efforts with the private sector and civil society to bring this message to all Malaysians. In 2008, Unilever Malaysia collaborated with the tenants of Menara TM to launch its environmental campaign with the purpose of educating the public and to promote environmental sustainability. The service industry has to pursue green practices in order to compete in this golden era (Claver-Cortes, Molina-Azorin, Pereira-Moliner & Lopez-Gamero, 2007).

The service sectors such as community, cultural, entertainment and financial services, should all consider their role in sustainability to be a valuable contribution. However, it may not be easy for them to package their products or services as green and having a low or no impact on the environment. For the financial services, Islamic finance shares significant synergies with the idea of an environment-friendly and sustainable development. The Malaysian government has implemented three major green financing initiatives in Islamic financial institutions such as the Green Technology

Financing Scheme, Socially Responsible Investment Sukuk, and Environmental, Social and Governance Index (MIFC, September 2014). For retail and wholesale businesses like Tesco, Jusco, Giant and others, no plastic bags are provided every Saturday when consumers buy goods at their stores. Such practices will reduce the impact to the environment. It is hard to achieve “zero” carbon emissions, but all the efforts and cooperation by various bodies will help to lessen the environmental impact.

Sustainable businesses are economic undertakings that generate wealth and meet the needs of the current generation while saving the environment for future generations (Daft, 2008). In 2008, Kluster, the President and CEO of Verdiem Corporation, stated that sustainability has become a major focus for businesses since the discovery that sustainable practices can strengthen reputations, improve employee morale, lead to cost savings and benefit the environment. Sustainability can be achieved by companies by cutting down on carbon emissions and reducing waste. Furthermore, it can enhance business efficiency. Since the 7<sup>th</sup> Malaysia Plan (1996-2000), sustainable practices have been an initiative in the country, as stated clearly as follows:

**Table 1.4: Malaysia’s Initiative towards Sustainable Practices**

<b>Year</b>	<b>Plan</b>	<b>Sustainable Practices</b>
1990-1995	6 <sup>th</sup> Malaysia Plan	To sustain the growth momentum and manage it successfully so as to achieve a more balanced development of the economy.
1996-2000	7 <sup>th</sup> Malaysia Plan	Protect the environment and ecology so as to maintain the long-term sustainability of the country’s development
2001-2005	8 <sup>th</sup> Malaysia Plan	Promoting the demand and supply of green products and services
2006-2010	9 <sup>th</sup> Malaysia Plan	Balanced environmental preservation to ensure sustainable development
2011-2015	10 <sup>th</sup> Malaysia Plan	Green Technology Policy – to provide direction and motivation for Malaysians to continuously enjoy good quality living and a healthy environment, RM1.5 billion is provided to promote Green Technology
2016-2020	11 <sup>th</sup> Malaysia Plan	Pursuing green growth for sustainability and resilience, particularly in terms of a policy and regulatory framework, human capital, green technology investment, and financial instruments.

Source: <http://www.pmo.gov.my/home.php?menu=page&page=2005>

There are four elements that are covered by the National Green Technology Policy, which are energy, the economy, environment, and social policies (Official website of

GreenTech Malaysia, 2018). The government has to examine the available policy levers to lessen the environmental impact and spur the growth of the green technology industry in Malaysia. The Ministry of Energy, Green Technology and Water (KeTTHA) will promote a culture of conservation and efficiency. For example, KeTTHA will make sure that 50 percent of the purchases of products or services by the public sector are eco-labelled by 2020 across the ministries. To provide the basis for an environmental management annual report, KeTTHA will track the environmental impact and progress of Malaysia's green technology sector in a database. To increase public awareness on climate change issues, the Ministry of Natural Resources and Environment and the United Nations Development Programme in Malaysia implemented the National Corporate Greenhouse Gas (GHG) Reporting Programme for Malaysia (MYCarbon) in 2012. Correspondingly, organizations and institutions voluntarily report their GHG emissions and information in their Annual Reports or Annual Sustainability and Corporate Responsibility Report. As such, this reporting enables the ministry to easily measure the progress towards achieving an emissions reduction indicator.

### **1.5 Problem Statement**

There have been various global problems threatening the sustainability of the environment and the society. For instance, Johnson and Johnson talcum powder, which caused a woman's death from ovarian cancer, has spurred new concerns from consumers (New Strait Times Online, 2016). Meanwhile, Maxis failed to practise good corporate social responsibility towards their valuable customers when they upgraded data packages for Maxis One plan users while neglecting their other package users (Malaysian Digest, 2016). Besides that, the public's trust in the financial services industry in Malaysia as the country faced a global financial crisis in 2008/09 because of human greed and lack of ethics, resulted in a world economic downturn (The Star Online, 2014).

According to Green+ Magazine (2013), climate change and the loss in biodiversity are bringing about global problems that know no borders. Malaysia is faced with environmental challenges that are both man-made and natural (Al Jazeera, 2016). Malaysians now produce about 30,000 tons of waste every day, of which only 5% is recycled (Clean Malaysia, 2015). Accordingly, the country is looking to do its part to fight climate change and is seeking to cut carbon emissions by 40% by 2020. Still, many organizations lack understanding on the full benefits of going green (Strauss, 2015) and the negative impact of unethical behaviour on the society.

As a result, social responsibility issues are emerging among industry players, and environmental issues are threatening us as well. Although organizations do not do it on purpose, this might be something that is happening along the supply chain. It could be from the supplier, transportation, warehouse or others along the supply chain. This might indirectly affect the image, reputation and performance of the firm

in the long-run. That is why a complete supply chain is very important for organizations. Organizations should not just focus on their profits, but they also need to work for the betterment of the environment and the society.

Meanwhile, previous researchers did not foresee the importance of the social aspect. Furthermore, studies have only been focusing on environmental issues (Seuring & Müller, 2008), while neglecting the social aspect (Gold, Seuring & Beske, 2010a). In addition, most of the previous studies focused on the environmental or economic dimensions. However, it has been found that very few researches incorporated three dimensions, namely the social, economic and environmental aspects, into SSCM practices. According to the Executive Director of Supply Chain at the House of Fraser, the supply chain needs to be robust, dynamic and sustainable when a business wants to build trust, loyalty and consistently deliver on its promises to its customers (Morell, 2012). Furthermore, studies by Carter and Rogers (2008), Kaynak and Montiel (2009), and Sharma et al. (2010) highlighted that the development of a sustainable supply chain incorporating social, economic and environmental benefits should be taken into consideration in supply chain practices. The injection of sustainable components (environmental and social) into traditional SC practices will bring added challenges to the organization. To implement SSCM practices successfully, organizations are often faced with uncertainty in terms of the firm performance outcomes.

Nowadays, consumer consumption has a very short lifespan. Therefore, services must to be revised to meet the needs of customers. Service innovation might lead to SSCM practices. However, previous researchers on innovation were primarily concerned about technological innovation or product innovation (Dionisia Elche Hortelano & González - Moreno, 2007; Howells, 2006) and there was a lack of understanding on the development of new services as part of innovation. Besides that, prior research found that innovative strategies differ among firms even within the same sector (Dionisia Elche Hortelano & González - Moreno, 2007). Previous researches on innovation have proven that innovative firms are more likely to try new things such as process innovation (Abrunhosa & Moura E Sá 2008), product innovation (Kafetzopoulos & Psomas, 2015) and technological innovation (Singh, Khamba & Nanda, 2017). However, it is not known if innovative firms in terms of new service development will lead firms to adopt SSCM practices.

Other than service innovation, stakeholders also play a vital role in SSCM practices. Sustainability practices are mostly preceded by discussions on stakeholder pressure (Kim & Lee, 2012; Sarkis, Gonzalez-Torre & Adenso-Diaz, 2010; Zhu, Sarkis & Geng, 2005). Although the influence of stakeholders has been studied previously as an antecedent of green sustainable practices, most of these studies were not holistic as only a few elements concerning stakeholders were considered. In addition, previous researches did not specifically focus on the service industry (Awan, Kraslawski & Huiskonen 2017; Adebajo, Teh & Ahmed, 2016; Cantor, Blackhurst,

Pan & Crum, 2014; Kim & Lee, 2012). Thus, stakeholders who are related to service firms were included in this study.

Every organization implements SSCM practices to enhance the overall performance of the firm. According to Guo (2007), there is a shared belief that competitive advantage can lead to a firm's superior performance and, on the other hand, a sustainable competitive advantage will lead to a firm's continual superior performance. Some previous studies found that green management has a positive effect on financial performance (Molina - Azorín, Claver - Cortés, López - Gamero & Tarí 2009), while others found that financial performance has no significant relationship with green management (de Burgos - Jiménez, Vázquez - Brust, Plaza - Úbeda & Dijkshoorn, 2013). Some studies found there is a unidirectional relationship between a firm's profitability and sustainable SC performance (Ortas, Moneva & Álvarez, 2014). Consequently, the relationship between sustainable practices and financial performance has been found to be inconsistent (Maletic et al., 2015; Ortas et al., 2014; de Burgos-Jimenez et al., 2013). Thus, this study investigated the relationship between sustainability in SC and competitive advantage.

A firm's ability to effectively adjust to changing conditions will be greater when it has a well-developed knowledge management capability. Previous researches have proven that knowledge management is an important catalyst that links SC management to firm performance (Jeung, Yoon & Choi, 2017; Wang & Da, 2018; Adebajo, Teh & Ahmed, 2016; Mohd Suki & Mohd Suki, 2015; Okongwu, Brulhart & Moncef, 2015; Beheshti, Oghazi, Mostaghel & Hultman, 2014; Abd Rahman et al., 2013). Knowledge management has been reported to be important in moderating the relationships between SC and firm performance. However, the role of effective knowledge management has not been fully explored within the area of sustainable SC. As such, effective knowledge management will be needed more to strengthen firm performance continuously to achieve financial performance and to gain a competitive advantage.

Wernefelt's (1984) Resource Based View theory has been widely used to explain the adoption of SSCM practices. This theory sheds light on how resources can lead to SSCM practices in organizations. In this study, service innovation and knowledge management were deemed to be valuable resources for the organizational practices of a company. In the context of the RBV, the identification and development of key resources in an organization ensure the achievement of the social, economic and environmental aspects of SC to improve firm performance. Other than RBV, the Stakeholder theory (Freeman, 1984) was applied to explain how a firm's production of externalities affects internal and external stakeholders, and its environmental problems can be an externality that causes stakeholders to increase pressure on the firm.

In summary, this study measured whether service innovation and stakeholder pressure significantly influence SSCM practices in the service firms. Furthermore, this study investigated the impact of SSCM practices on firm performance in terms of its finances and competitive advantage. Besides that, this study examined the moderating effect of knowledge management between SSCM practices and firm performance. There is a need to distinguish what are the other best practices that can lead the service industry to experience a bright and sustainable development in their businesses in the future. The challenge is to get enough people to take drastic action to protect the earth so that they can make a difference during their lifetime. As a consequence of all the issues in relation to the current situation of sustainable businesses in Malaysia, a separate research was warranted to close the gaps. Thus, conducting a research on sustainable development in the service firms was timely and relevant.

### **1.6 Research Questions**

Given the greater society's current environmental views and the acknowledged role that business plays with regard to the quality of our environment, this study was aimed at addressing the following research questions in the context of Malaysian service organizations:

- a. What are the influences of service innovation and stakeholder pressure on sustainable supply chain management practices?
- b. What is the influence of sustainable supply chain management practices on firm performance?
- c. Does knowledge management moderate the relationship between sustainable supply chain management practices and firm performance?

### **1.7 Research Objectives**

The main aim of this study was to investigate the antecedents and consequences of SSCM practices in the Malaysian service industry. To accomplish this, there were four specific objectives as follows:

1. To examine the influence of service innovation on sustainable supply chain management practices.
2. To investigate the influence of stakeholder pressure on sustainable supply chain management practices.



3. To ascertain the effect of sustainable supply chain management practices on firm performance.
4. To examine the moderating effect of knowledge management on sustainable supply chain management practices and firm performance.

## **1.8 Significance of the Study**

Due to the increasing awareness of global climate change and natural disasters, environmental protection has turned out to be a high-priority issue. In the 21<sup>st</sup> century, climate change and natural disasters are known to be the most pressing environmental problems faced by the world. The 7th Malaysia Plan onwards emphasized environmental awareness. Until now, the Malaysian government continues to put efforts into intensifying green practices among industry players in the 11th Malaysian Plan. Thus, the present study reviewed the perspectives of the service firms to gauge the antecedents of SSCM practices and the consequences of SSCM practices on the performance of firms in the service firms with the interaction of knowledge management. Besides that, the current research has the potential to provide theoretical and managerial insights into SSCM practices that are connected to firms in the service firms.

### **A) Theoretical Implications**

Theoretically, this study has underwritten the previous knowledge in a number of ways. It will improve the understanding of the public with regard to SSCM issues. Nowadays, environmental awareness is being increasingly promoted by various bodies. This study can contribute to the body of knowledge on SSCM practices by adding to the growing significance of environment-friendly business operations. First, this study offers an alternative lens to view the concepts of the resource-based view and stakeholder theories by constructing a conceptualized research framework for the identified model variables. Second, the influence of service innovation on SSCM practices in the service context remains unknown. Service innovation is relatively important to the service industry since the industry contributes to more than 50% of the GDP in Malaysia. Third, this study addresses the warranted need in the existing literature to examine SSCM practices in the context of the service firms. It is very important to understand the concept as the underlying values on the nature of business between industries are totally different. It provides information as to whether SSCM practices in the service firms are similar to or different from what is being practised in the manufacturing industry. Fourth, knowledge management could play a moderating role between SSCM practices and firm performance, which has not yet been tested in the past. Last, but not least, the most important part is that the current study has incorporated three dimensions, namely, the social, economic and environmental aspects, in SSCM practices to measure the sustainability of organizational performance, where previous researches did not take this into consideration.

## **B) Managerial Implications**

From a practitioner's standpoint, this research adds to attempts at bridging the gap between theory and practice. This study is useful for those service firms that are implementing SSCM practices or have the intention to implement such practices in order to be more sustainable in the future as it provides the evidence on how firms can remain competitive and sustainable by being aware of and responsive to environmental issues. Hence, the actual practices can be identified without prejudice. Moreover, as the government is in favour of sustainable development, this study can be construed as a guide in the service firms to improve the business operations of firms by taking into consideration the three dimensions. Organizations should show their actions to protect the environment rather than to destroy it. Malaysia is still in the developing stage and thus, it is faced with great challenges in ensuring a balance between development and environmental sustainability. SSCM practices might be one of the good solutions to be adopted by Malaysian firms. This study focused precisely on the adoption of SSCM practices with regard to firm performance. As such, it is highly recommended that the service industry scrutinises the effectiveness of SSCM practices and the strategies to improve firm performance. Knowledge management could be one of the strategies to be undertaken by firms in the future to strengthen the relationship between SSCM practices and firm performance. In summary, this study intends to enhance SSCM practices in the service firms to reduce the impact on the environment.

### **1.9 Scope of the Study**

This study focused on the service firms in the Malaysian context of the population. The unit of analysis for this study was service organizations. Since this study was a combination of the sustainable and operational activities of firms in the service firms, the best target respondents had to at least be from the managerial level (human resource, director or manager) with at least 1 year of working experience in that company. Moreover, they had to have knowledge and information about the sustainable and business operations of the firm. The respondents had to ebb from the distributive trade, real estate, utilities, information and communication technology, transportation and storage, accommodation, food and other service sectors.

Other than that, the service firms had to possess one of the certifications such as Global Reporting Initiatives (GRI), ISO 26000, ISO 14000 or ISO 9001 to know whether the organizations were ready to shift their business sustainability thinking. To facilitate the pursuit of sustainable development by businesses, international organizations have developed various standardized management systems, notably the International Organization for Standardization (ISO) 9001 management standard, which is viewed as critical for a firm's sustainable economic success. ISO 14001 is a standardized environmental management system that helps firms to manage their environmental footprint. GRI helps organizations understand and communicate their impact on social and environmental issues. The ISO 26000 helps organizations to effectively assess and address their social responsibilities. All the certificates

mentioned are related to sustainability in terms of the environmental, social and economic aspects.

The service sector in Malaysia was chosen to respond to the provided questionnaires. All the service sectors were included in this study to obtain a greater understanding on how every single service sector has adapted itself to sustainable practices and also to obtain more insights on the different perceptions of sustainable practices in every service sector.

### 1.10 Definition of Key Terms

Six main terms were applied in this study. To avoid any confusion among readers, a complete interpretation of the concepts that were critical and specific to this research is provided. The definitions of the key terms used are represented as guidelines in discussing the research findings of the tested hypotheses, as demonstrated below.

**Table 1.5: Definitions of Key Terms**

No.	Construct	Definition
1.	Service innovation	Service innovation refers to a new service development that involves changes in the process of delivering existing services (Toivonen & Tuominen, 2009) and new service line extensions to meet the new market.
2.	Stakeholder pressure	Stakeholders are defined as the interested parties (Balzarova & Castka, 2012) that include employees, customers, regulators, shareholders, competitors, suppliers, service providers, NGOs and societies that influence the implementation of SSCM.
3.	Sustainable supply chain management (SSCM)	SSCM is defined as the inter-organizational business processes that incorporate the environment, social and economic perspectives along its SC to business sustainability (Ahi & Searcy, 2013).
4.	Knowledge management (KM)	KM can be defined as the strategic, systematic management process of an organization's knowledge asset that assists in the value creation, storage, distribution and application of knowledge (Abd Rahman, Ng & Wong, 2013) and knowledge sharing.
5.	Firm performance	Firm performance can be defined as a firm's success in accomplishing a competitive position (Vachon and Klassen, 2006) and that leads to the improvement of a firm's financial performance

## 1.11 Organization of the Thesis

**Chapter 1: Introduction** This chapter briefly provides an overview of the overall research as an outline for the few chapters that follow. It explains the background of the study, gives an overview of the service firms in the Malaysian context, emphasizes the problem statement, and draws the reader's attention to the research objectives, research questions, scope of the research and also the justification of the importance of conducting this study.

**Chapter 2: Literature Review** This chapter focuses on the relevant literature of previous researches, the definitions and concepts such as service innovation, stakeholder pressure, knowledge management, SCM, and SSCM practices. Service innovation and stakeholder pressure were served as antecedents in this study due to their absence in previous researches. In this chapter, the researcher mentions the importance of each antecedent in motivating the adoption of SSCM practices. Moreover, due to changes in the environmental requirements affecting the operation of various industries, increased attention is given to the development of environmental management in SC. Thus, the SSCM has emerged and is playing an important role in business. The term sustainability has been interpreted in various ways. Early sustainability initiatives tended to focus on environmental issues. However, economic and social aspects should also be taken into account when it comes to sustainability. In this chapter, SSCM practices are incorporated with social, economic and environmental perspectives to gauge their relationship with firm performance. Other than that, knowledge management serves as a moderator when looking into the interaction between SSCM practices and firm performance, and whether the interaction that occurs between them will make the relationship stronger.

**Chapter 3: Theoretical Framework** This chapter presents all the theories that could explain the basis of this study. The theories applied in this study were the resource-based view (RBV) and stakeholder theories. Hence, the conceptual framework and hypotheses of this study provided the reasons as to why the framework was formed for this study.

**Chapter 4: Methodology** This chapter discusses the methodology and statistical analysis used to test the hypothesis. The SPSS and PLS-SEM were selected for the hypothesis testing. This chapter mostly discusses the different phases involved in this research, including the preparation of the questionnaire, ensuring the reliability and validity of the measurements, the sampling technique, and all the aspects related to the data collection. Besides that, the data analysis steps are discussed in this chapter and the reasons why this study applied the PLS-SEM, statistical measurement techniques and the measurement model.

**Chapter 5: Findings of the Study** This chapter provides the findings derived from the survey questionnaire and research objectives. First, a descriptive analysis is given, followed by an exploratory factor analysis (EFA) to construct the measurement validation and reliability tests for all the measurement items. Model tests and fit measures were applied such as construct validity, convergent validity, and discriminant validity. Colinearity among the indicators was performed based on a Variance Inflation Factor (VIF). Assessments of the structural model such as lateral colinearity, path coefficient,  $R^2$ ,  $f^2$  and  $Q^2$  were executed. The assessment of the moderating effect of knowledge management was demonstrated. Lastly, the hypothesis results were confirmed.

**Chapter 6: Conclusion and Recommendations.** This chapter sums up the findings, and then concludes with an overview of the research findings. Secondly, the contributions (theoretical and managerial) of this study are then presented. Thirdly, the limitations of this study are reviewed in this chapter. Finally, recommendations are provided for further research.

### 1.12 Chapter Summary

In summary, it is important for firms to have a better understanding of SSCM practices as the implementation of these practices in the best way can lead to improvements in the firm. Further, it may convince other industries or countries that SSCM practices can be executed in an effective and easy way if the right resources are fully utilized. Therefore, it is highly important for management to have a greater understanding of these practices and how to enhance the required strategies for their adoption. The next chapter will discuss the definitions of SSCM practices that have been addressed in previous studies.

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