



# The Development of Sustainable Supply Chain Management and Sustainable Performance in Malaysian Healthcare Industry

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**Abstract**—This paper builds on to the previous work done on sustainable supply chain management and sustainable performance. The aim of this paper is to propose a conceptual framework for examining the relationship between sustainable supply chain management and healthcare sustainable performance in Malaysia. A total of four dimensions of sustainable supply chain management involved; environment, information and communication technology, culture change and risk management were determined to have significant and positive direct relationship with sustainable performance. Based on the proposed conceptual, research hypothesis is being developed. The proposed research framework is applied to Malaysian healthcare industry which has limited studies.

**Index Terms**—Sustainable supply chain management, sustainable performance, healthcare industry.

## I. INTRODUCTION

Malaysian's healthcare system has play an important role in ensure the health of the people are in the situation improved even now. Healthcare industry in Malaysia is cover by responsibility of the government's Ministry of Health. Nevertheless, the Malaysian healthcare system is always faced with various challenges and issues that may affect the performance and sustainability [1], [2]. Hence, in the era of liberalization and globalization, our health system will have to compete with other to provide premier healthcare services to improve quality services [3], [4], [5]. In relation to that, the focus under the 10<sup>th</sup> Malaysia Plan (2011-2015) is to develop the most appropriate strategy, effective and effectively by using resources efficiently to improve the quality of healthcare. The conceptual model using structural relationship

between sustainable supply chain management and sustainable performance model has been proposed. Based on the proposed conceptual model and reviewed, research hypothesis are been develop. This paper expected to assist and contribute for Malaysian healthcare industry has become a powerful engine of economic due to demographic shifts as well a greater and changing lifestyles citizens.

Sustainable Performance (SP) is a measure and benchmark for organization to achieve their goal and objective. From healthcare industry perspective, organizations goal achieved through Economic (EC), Environmental (EV), and Social (SC). This paper focused about the relationship between SSCM and SP. The proposes of this study; 1) to identify the SSCM constructs and SP measures for Malaysian healthcare industry and 2) to develop research of the SSCM constructs and SP measures for Malaysian healthcare industry. There are four domains of SSCM which are Environment (EV), Information and Communication Technology (ICT), Culture Change (CC) and Risk Management (RM). These papers review the literature on SSCM and SP as well as the research hypothesis. The objective to the paper is to investigate the relationship between SSCM and SP in Malaysian healthcare industry. Next, brief the research methodology and measurement of constructs instrument. As to conclude the research, conclusion future agenda is made at the end of this section.



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## II. LITERATURE REVIEW

### II.I. ENVIRONMENT (EV)

According to [6], the environmental problems related to emissions and waste is attributable to the activities of the supply chain. This has forced organizations face pressure from society, competition and regulation to move towards greening the supply chain. The interaction between sustainability and supply chains is the critical next step from recent examinations of operations and the environment [7].

### II.II. INFORMATION AND COMMUNICATION TECHNOLOGY (ICT)

In globalization era, the importance of cooperation and coordination unnoticed. Therefore, the increase in channel integration, customer responsiveness, and development of information and communication technology (ICT) is created. The firm began to plan, design, and innovation and implements their supply chain. In addition, SSCM also comprises the management of material, information and capital flows.

### II.III. CULTURE CHANGE (CC)

[8] state that supply network design should be planned to facilitate exchange of information and other process improvements aligned to the product and market requirements. While, an evaluation of the literature on SSCM and the drivers of change in supply chains resonate with other past changes, such as the impact of ICTs [9].

### II.IV RISK MANAGEMENT

Risk management consists as engaging in a long term relationship that has been fostered by the practice of some form of continuity and SC development partners and monitoring activities [10], [11].

Starting with a broad focus on sustainable supply chains, the reviewed literature refers to sustainable supply chains as well as to sustainable performance in healthcare industry. Although, critical SSCM factors may be classified into four factors. The Table 2 summarizes critical factors that were identified in the literature.

TABLE I. FACTOR OF SSCM

Factor	Authors
Environment	[12], [13], [14], [10], [15], [16], [17].
Information and Communication Technology	[18], [19], [20], [9], [21].
Culture Change	[22], [18], [19], [8], [9].
Risk Management	[23], [24], [25], [26], [11], [27].

## III. SUSTAINABLE PERFORMANCE

The successful implementation of sustainable development could improve more than one dimension of sustainable performance such as environmental sustainability, economic sustainability, and corporate social responsibility sustainability [28], [29], [30], [31], [32], [33]. Effective performance measurement about a way of achieve the goals, work under control, ding something, work under control, customer' satisfaction and improvements are necessary [34]. In addition, performance measurement is used to improve organizational performance [35]. Performances can assist an organization measure progress towards it's the options available, understand its current situation, progress towards its goals and address the key issues. This statement is also supported by [36] who proved that performance measurement as the process of quantifying the effectiveness and efficiency of an action. Hence, the process for identifies how successful organizations or individuals have achieved their objectives and is performance measurement strategy.

The summary of research factors are listed in Table 2 as below.

TABLE II. THE SUMMARY RESEARCH FACTORS ON SP FACTOR

Factor	Authors
Economic Performance	[28], [29], [37], [30], [38], [31], [39], [40], [32], [41], [42], [33].
Environment Performance	[28], [29], [30], [31], [39], [41], [32], [33].
Social Performance	[28], [29], [30], [31], [43], [32], [41], [33].

## IV. SUSTAINABLE SUPPLY CHAIN MANAGEMENT AND SUSTAINABLE PERFORMANCE

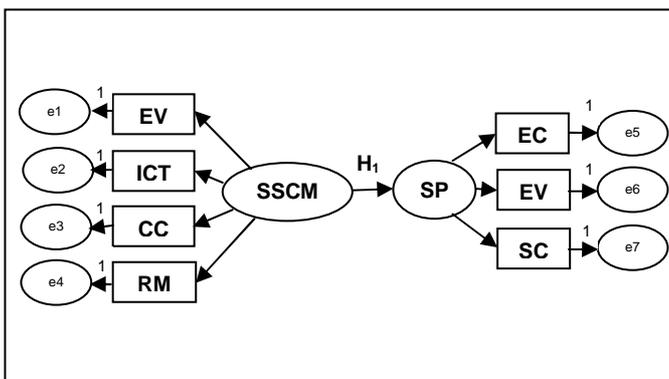
Based on above discussion, sustainable performance is closely linked with SSCM and would be appropriate in this study and suitable for healthcare context. A positive relationship for SSCM and sustainable performance can be proposed. As a result, the following proposition will be explored. Previous research suggests that sustainable supply chain management has a positive impact on performance [44], [45], [46], [47], [48], [49]. Arguing in favor of the competitive potential of environmental management practices for generating cost savings and market gains, [45] studied the relationships between environmental proactively and the market assessment of financial performance (equity value of the firm). These authors observed that markets value the environmental achievements of companies. Based on drivers for sustainable supply chain management and performance, supply chain performance is defined as "the degree to which a supply chain performance indicators at any point in time" [50]. Other study by [51] highlighted that efficiency and environmental friendliness walk together towards improvement. There are many factor; uncertainty and risk, law and regulations, innovation and knowledge, integration, strategy, relationship and collaboration, infrastructure and services, fair trade, social responsibilities, investment and

accounting that would have a direct impact on sustainable supply chain management. Besides that, there was a strong correlation between the economic, environment and social performance. Thus, SSCM is has a strong positive relationship in economic, environment and social performance.

## V. A PROPOSED RESEARCH MODEL

The proposed research model aims to analyze the relationship between sustainable supply chain management and sustainable performance for Malaysian healthcare industries. This model as presented in Figure 1. To understand the relationship of SSCM and SP in Malaysian healthcare industry, the following hypothesis was set up to be tested. According to the literature review, this hypothesis will state based on the numbering system from H1. This style of hypothesis statement is chosen due to the nature of answering hypothesis using structural equation modeling methods [52], [53].

H<sub>1</sub>: There is a positive and direct significant relationship between sustainable supply chain management and sustainable performance of Malaysian healthcare industry.



\*Note: SSCM=Sustainable Supply Chain Management, SP=Sustainable Performance, EV=Environment, ICT=Information and Communications Technology, CC=Culture Change, RM=Risk Management, EC=Economic, EV=Environment, SC=Social

## VI. METHODOLOGY

In this study, sampling methods are using structured questionnaire. The population of this study comprised in Malaysian healthcare industry. Questionnaires will distribute to respondents from Malaysian Hospital. To analyze the data, two statistical techniques were adopted. Structural equation modeling (SEM) technique was utilized to perform the required statistical analysis of the data from the survey. Exploratory factor analysis, reliability analysis and confirmatory factor analysis to test for construct validity, reliability, and measurement loading was performed. Having analyzed the measurement model, the structural model was

then tested and confirmed. The statistical Package for the Social Sciences (SPSS) version 21 was used to analyze the preliminary data and provide descriptive analyses about thesis sample such as means, standard deviations, and frequencies. SEM using AMOS 6.0 will use to test the measurement model.

## VII. CONCLUSION AND FUTURE RESEARCH

In Malaysia, the healthcare represents a key component of the fast-growing service industry due to the rising demand of medical. Therefore, it is important for healthcare to find way to improve its sustainable performance in order to deliver a quality service to the patients. As a review of literature has a demonstrated the critical role of SSCM in influencing the healthcare sustainable performance. Hence, a conceptual model has been postulated linking a comprehensive SSCM (environment, information and communication technology, culture change and risk management) as possible determinants for healthcare sustainable performance. Based on the findings in the previous section obtained some conclusions. The aim of this study was to determine the factors of sustainable supply chain management. These findings allow us to conclude that SSCM has a positive relationship between sustainable supply chain management and sustainable performance in Malaysian healthcare industry. In future agenda, a survey is designed in order to conduct an empirical research for examining survey's hypothesis. It is hoped that the important facts addressed in this study will be means whereby managers and researches will be able to investigate the SSCM problem in Malaysian healthcare industry with better awareness.

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