

CLOSED-LOOP SUPPLY CHAIN ADOPTION AND THE MEDIATING EFFECT OF GREEN CAPABILITIES - EVIDENCE FROM MALAYSIA

Siali Fadilah^{1,*} and Thurasamy Ramayah²

Abstract

The concept of a closed-loop supply chain (CLSC) is concerned with the recovery of value from returned consumer products via resales. The rapidness of economic growth gives manufacturers no option but to shorten the product life cycle. Consequently, new versions following product upgrades happen too fast, increasing product returns in the form of End-of-Life (EOL) or End-of-Use returns. This issue has become crucial with a lack of processes for effectively handling product returns in Malaysia; thus, firms often use a third party, although this is considered improper by global standards. Therefore, this research aims to clarify the connection between Institutional Theory and the Natural Resource-Based View (NRBV) Theory in light of CLSC adoption in Malaysia. The findings highlight the role of government in overpowering competitors and customers in adopting a CLSC. The study's limitations include presenting a formation of ideas that haven't been previously linked in a research framework, setting the stage for more research in this area.

Keywords: Closed-loop Supply Chain, Green capabilities, Natural Resources Based View, Institutional Theory, PLSSEM

Abbreviations: Closed-loop supply chain (CLSC), Resource Based View (RBV), Natural Resource Based View (NRBV)

INTRODUCTION

Closed-Loop Supply Chain (CLSC) has acquired increasing prominence in the field of supply chain and operations management due to public awareness and government legislation forcing producers to protect their

End of Life (EOL) products. The situation is mainly due to strict legislation and profit margins in reverse flow activities and after-sales services. In essence, the CLSC is the traditional forward supply chain plus additional reverse supply chain management that oversees product regeneration and

^{1,*} Fadilah Siali works as a lecturer at the Faculty of Economics and Business, Universiti Malaysia Sarawak, Malaysia. She obtained a master's degree in Business Administration (Service Science Management Engineering) from Universiti Sains Malaysia. She is a Ph.D. candidate in the Department of Operation Management, School of Management, Universiti Sains Malaysia (USM), Malaysia. Email: sfadilah@unimas.my

² Thurasamy Ramayah, is currently a Professor of Technology Management, School of Management, Universiti Sains Malaysia, Visiting Professor Minjiang University (China), Daffodil International University (DIU) Bangladesh, Fakulti Ekonomi dan Pengurusan, Universiti Kebangsaan Malaysia (UKM), Faculty of Economics and Business, Universiti Malaysia Sarawak (UNIMAS), Fakulti Pengurusan dan Perniagaan, Universiti Teknologi Mara (UiTM) and Adjunct Professor at University Center for Research & Development (UCRD), Chandigarh University (CU), India, Sunway University, Azman Hashim International Business School, Universiti Teknologi Malaysia (UTM), Universiti Tunku Abdul Rahman (UTAR) and Universiti Tenaga Nasional (UNITEN), Malaysia. He was also a Visiting Professor King Saud University (Kingdom of Saudi Arabia) and Adjunct Professor at Multimedia University previously. He has an h-index of 107 and citation of 45,920 in Google Scholar and i-10 index of 522, his h-index in SCOPUS is 62, with 13,853 citations while his h-index in ISI/Clarivate is 49 with 9,401 citations. His full profile can be accessed from www.ramayah.com

collects values from products that customers consume and use. Products are divided into different levels during the recovery process: module, part, and material. The goal of reprocessing is to return a product to its original state, whether its original functionality, an improved state, or a state where it is indistinguishable from brand new (Govindan et al., 2015).

In previous research, there has been extensive discussion on various hypotheses and frameworks pertaining to product returns in reverse supply chains. Interestingly, Mazaheri (2021) discovered that China is the most productive country with 269 publications in CLSC study. Ranked second to fifth are USA, Iran, India and UK, according to the top 15 countries, extracted based on the number of outputs. The United States of America has been cited more than twice as many times as China, receiving 5015 citations. These studies include the industrial ecosystem, product lifecycle stage management, CLSC, green or sustainable supply chains, and integrated supply chain management (Seuring, 2004). The primary objective is to address environmental concerns throughout the production chain. Product returns have the potential to produce unique value during the reverse flow in a CLSC, as stated by Mondragon et al. (2011). This value might be produced by prolonging the product lifecycle in the supply chain.

Studies in Malaysia have demonstrated the firms' reactive approach to managing their product returns (Eltayeb et al., 2010, 2011; Nik Abdullah et al., 2011; Olugu et al., 2010) due to the lack of return capabilities (Eltayeb et al., 2011), high-cost returns operations (Eltayeb et al., 2011; Khor & Udin, 2013), and challenges in obtaining sufficient volume and proper timing of returns (Shaharudin et al., 2015). In addition, some businesses do not have the infrastructure necessary to manage product returns because it is not one of their core competencies. Despite this, the current objective is to cut production costs, shorten product life cycles, influence consumer preferences, and provide a response to legislation related to end-of-life (EOL)

products. This has resulted in the expansion of the product return programme and CLSC adoption (Shaharudin et al., 2019).

According to Shaharudin (2019), Malaysia is not very aggressive when it comes to recovering or recycling End-of-Life (EOL) products or returned products that have a large residual value. The treatment of waste, which is not sustainable, contributes to environmental crises like illegal dumping and the expansion of landfills, both of which are detrimental to human health and the environment (Mohamed et al., 2008). Therefore, Malaysia must develop a clean production system and effectively implement CLSCs to monitor goods and the forward and reverse movement of materials. Past studies have also stated that green capabilities which respond to customers' and other stakeholders' environmental interests are essential enablers of a CLSC (Robotis et al., 2012). Specifically, Hofmann, Schmeichel, & Baddeley (2012) highlighted firm-specific capabilities that encourage embracing environmental movements. Secondly, Guide & van Wassenhove (2009), and Mitra, (2014) stated that green capabilities should not be implemented separately when executing CLSC effectively. Due to the problem discussed above, the objectives of this paper are as follows:

1. To identify the relationship of regulatory pressure, customer pressure, and competitive pressure towards green capability in CLSC adoption.
2. To assess the relationship between green capability and CLSC adoption.
3. To measure the mediating effect of green capabilities in the relationship between regulatory pressure, customer pressure, competitive pressure, and CLSC adoption.

LITERATURE REVIEW

Institutional Theories

The Institutional Theories of organizations create novelty, a concept developed by DiMaggio & Powell (1983) to portray organizational diversity. Institutional Theory has gained interest, specifically in