

MEDIATING EFFECTS OF SUPPLY CHAIN STRATEGY ON
THE RELATIONSHIP OF CAPABILITY ON SUPPLY CHAIN
PERFORMANCE OF MANUFACTURING
COMPANIES

DURAIRAJ VEERAIYAH

A Thesis Submitted to the School of Management,
Asia e University in Fulfilment of the Requirements for the
Degree of Doctor of Philosophy in Business Administration

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ABSTRACT

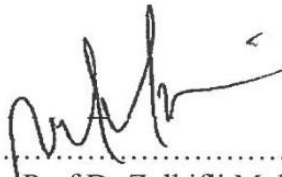
This thesis explored the effects of supply chain strategy on the relationship of capability and integration and its impact on firm's performance. Previous studies showed no consensus to how these dimensions related to performance. Moreover, the contribution of supply chain strategy is not well researched or understood by both academics and practitioners. There is also limited research in this topic originating from developing regions. A theoretical framework was developed and a survey was conducted targeting manufacturing firms in Malaysia and Singapore. A total of 140 companies were sampled and data was analysed using step-wise multiple regression analysis. The results showed that supply chain strategy has an important mediating role in the firm's internal integration and external integration with customers on the relationship to performance. This finding elucidates the importance of consistent strategy in supply chain integration. Furthermore, performance is directly influenced by operations capabilities and external integration with customers. These indicates that firms build operations capabilities and integrate externally with customers for improving their supply chain performance. The outcome of this research confirms two points: the influence of internal and external integration on performance and mediating role of supply chain strategy in that relationship. Second, operational capabilities as organizational assets impact performance directly. These findings provide insight to supply chain managers on key activities to focus in order to achieve supply chain performance.

APPROVAL PAGE

I certify that I have supervised /read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in quality and scope, as a thesis for the fulfilment of the requirements for the degree of Doctor of Philosophy.



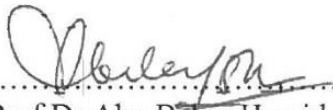
.....
Prof Dr Premkumar Rajagopal
INTI College
Supervisor




.....
Assoc Prof Dr Zulkifli Mohamed Udin
Universiti Utara Malaysia
External Examiner 2



.....
Dr Kanagi A/P Kanapathy
Universiti Malaya
External Examiner 3

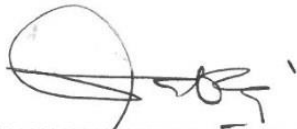


.....
Prof Dr Abu Bakar Hamid
Universiti Teknologi Malaysia
External Examiner 1



.....
Prof Dr Siow Heng Loke
Asia e University
Chairman, Examination Committee

This thesis was submitted to Asia e University and is accepted as fulfilment of the requirements for the degree of Doctor of Philosophy.



.....
Assoc Prof Dr Wan Sabri Bin Wan Hussin
Dean, School of Management



.....
Prof Dr Siow Heng Loke
Dean, School of Graduate Studies

Declaration

I hereby declare that the thesis submitted in fulfilment of the PhD degree is my own work and that all contributions from any other persons or sources are properly and duly cited. I further declare that the material has not been submitted either in whole or in part, for the degree at this or any other university. In making this declaration, I understand and acknowledge any breaches in this declaration constitute academic misconduct, which may result in my expulsion from the programme and / or exclusion from the award of the degree.

Name: Durairaj Veeraiyah

Signature of Candidate:

Date:

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LIST OF ABBREVIATIONS

VMI	Vendor Managed Inventory
TQM	Total Quality Management
JIT	Just in Time
EDI	Electronic Data Interchange
RFID	Radio Frequency Identification
MTO	Manufactured to Order
MTS	Manufactured to Stock
MFS	Manufactured from Stock
TPS	Toyota Production System
QR	Quick Response
IOM	Integrated Operating Model
ERP	Enterprise Resource Planning
SAP	Systems, Applications, Products
IT	Information Technology
GCI	Global Commerce Initiative
CFPR	Collaborative Forecasting Planning and Replenishment

CHAPTER 1

INTRODUCTION TO THE STUDY

1.0 Background of the Study

Supply chain management improves corporate performance, contributes to industry growth, increases consumer satisfaction and advances societal well-being (Fawcett, Waller & Bowersox, 2011). The task of developing and implementing supply chain competence and capability in an ever more globalised world is increasingly challenging. In times of fragmented supply chains and international competition, one of the key topics in supply chain research is how companies strategize, build capabilities and integrate internally among other functions and externally with customers and suppliers in order to improve corporate performance (Rosenzweig, Roth & Dean, 2003; van der Vaart & van Donk, 2008; Chen, Lee & Lay, 2009; Jayaram, Tan & Laosirihongthong, 2014).

Despite its influence on value creation and impact on business performance, supply chain management research remains inadequate and its contribution to performance has shown inconsistent results (Harrison & New, 2002; Soni & Kodali, 2012; Paulraj, Chen & Lado, 2012). In addition, a robust model linking supply chain management to competitive priorities is yet to be developed (Narasimhan, Kim & Tan 2006). Therefore the need for research to develop and clarify the full impact and influence of supply chain management on firm's performance is imperative. Moreover, Fawcett et al. (2011) suggested that further research in supply chain

management would be able to contribute to theory building that could add to new frontiers of knowledge.

Research in supply chain management can contribute to concepts that are needed to build innovative high performance supply chains for the future. Porter (1991) and Dyer and Hatch (2006) reiterated that the objective for both managers and management researchers is to explain how a firm can achieve its intended performance. Management research established that firms create competitive advantage through supply chain management activities in order to achieve business performance.

Narasimhan and Carter (1998) argued that firms which develop successful supply chain strategies that are aligned to corporate strategies are able to sustain their long-term competitiveness. Narasimhan et al. (2006) observed that this relationship contributes to supply chain management performance at corporate and functional level. They explained that consistent corporate and functional level execution of supply chain management impacts firm's performance (Narasimhan et al., 2006).

Applied research and in-house studies are done with the help of consultants and internal experts to provide in-depth analysis for problem solving and performance improvements. This enables firms to design new applications that meet specific customer requirements or business objectives. Mainly internally focused, firms seek to improve their position by defining supply chain processes and improve their capabilities so that they can create a competitive edge in the market place. Those firms that devise focused strategies, manage their portfolios, review their

business models and continue to be innovative will be able to sustain growth and subsequently secure success.

Academic research on supply chain strategies in the context of this region is scant and limited. While most research are based on a single firm analysis, very few used a broader base of samples. Notable examples are the study of manufacturing companies in Thailand by Tippayawong, Patitad, Sopadand and Enkawa (2010) and in Malaysia by Ramayah and Omar (2010). In that regard, this research contributes to additional insights to supply chain strategy activities among manufacturing firms in developing countries.

1.1 Statement of Problem

Although previous researchers have thoroughly studied several perspectives in supply chain, there is still no common understanding on the influence on what influences supply chain performance. Papers were written investigating supply chain strategy, capability and integration but there is no consensus on how they relate to the firm's performance. This leads to the underlying assumption that a single undertaking does not necessarily ensure supply chain performance since it depicts the effectiveness and efficiency of a whole set of supply chain activities. There is limited research in developing and mapping a theoretical base of supply chain performance, leading to inconsistency of core findings (Burgess, Singh & Koroglu, 2006).

The statement of problem was formulated as a reaction to inconclusive empirical evidence about supply chain performance and its relationship to key

dimensions of supply chain strategy, capability and integration. In other words, the main research question is about the nature of supply chain performance. Several researches emphasize only certain aspect of the supply chain management activities, leading to varied assumptions and conclusions. This research is an attempt at providing empirical evidence into these key supply chain management dimensions and show how they are linked to each other and their effect on firm's performance.

The justification for research is further strengthened by the lack of observed evidence to substantially explain the role of supply chain strategy on performance. Empirical evidence, especially on the role of supply chain strategy on the relationship between capability and integration and its influence on firm's supply chain performance is limited (Wisner, 2003). Supply chain strategy has generated serious attention because studies have shown that it creates competitive advantage and improves performance (Wisner, 2003; Vickery, Jayaram, Droge & Calantone, 2003). Research in management and manufacturing strategy emphasises that supply chain decisions are strategic and must be aligned to the firm's business strategy but few empirical studies have attempted to examine their linkages. Recent research highlights similar problem in precisely identifying the relationship among supply chain management initiatives to determine the systematic shift from an operational focus to a strategic focus (Jayaram et al., 2014). This research is an attempt to address the problem in determining the strategic role of supply chain beyond its operational and tactical level contribution to supply chain performance. It is designed to address a definite gap in research on the strategic contribution of supply chain management on business performance (Harlina & Azmir, 2010; Soni & Kodali, 2012).

Supply chain management activities are complex, integrative and adaptive systems and therefore research is needed to understand its interrelationships holistically and in detail (Fawcett et al., 2011). Earlier research found that firms embark on integration activities both internally and with external stakeholders, but there is no consensus on how these activities contribute to firm's performance (Agarwal & Shankar, 2005; Narasimhan et al., 2006; McKone-Sweet & Lee, 2009). Recent studies do not fully support the assumption that internal and external integration activities have an impact on performance (Flynn et al., 2010). Specifically, research into external integration have shown different results when observing suppliers and customers separately (van der Vaart & van Donk, 2008). Evidently, research on the influence of supply chain integration on performance remains inconclusive (Darkow, 2010). In addressing the research problem, this study will observe supply chain integration from the perspective of external and internal integration to provide empirical evidence on its influence to supply chain performance.

From the dimension of operations and competitive capabilities, several researchers concur that it leads to superior performance (Narasimhan et al., 2006; Wisner, 2003; D'Avanzo, von Lewinski & van Sassenhove, 2003; Lapide, 2006; Frohlich & Westbrook, 2002; Kathuria & Igbaria, 1997; Subramani, 2004). However, there is no empirical evidence to support the link between these capabilities and supply chain strategy leading to performance (Winter, 2003; Helfat & Peteraf, 2002; Kim, 2009b). This raises the need to address the problem of the lack of evidence to link supply chain capabilities to supply chain strategy and

performance. Since strategy aligns organizational pillars in order to achieve business objectives, clarity is required to understand the capability dimensions required to ensure organizational alignment for business performance (McKone-Sweet & Lee, 2009). Moreover, previous research confirms that supply chain capabilities is not attained individually but through resource allocation and integration of several supply chain activities (Droge et al., 2004). Therefore, this research will focus on the problem in the adoption and development of supply chain strategies and capabilities and its impact on supply chain performance.

In summary, this study is to address the problem related to the nature of supply chain performance.

1.2 Research Objectives and Questions

The objective of this thesis is to investigate the relationships leading to supply chain performance by providing insights into the influence of supply chain strategy, integration and capability. In that regard, this research intended to empirically investigate the direct link between these variables and mediating role of supply chain strategy and its impact on a firm's performance.

1.2.1 Research Objectives

More specifically, the objectives of this research are as follows:

Objective 1: To investigate the variables of supply chain integration and how do they relate to supply chain performance.