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The effects of supply chain integration on customer satisfaction and financial performance: An organizational learning perspective

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ABSTRACT

Within the context of supply chain integration this study illuminates the role of customer satisfaction and associated performance impacts through the lens of organizational learning theory. This study investigates the relationships among internal integration, external integration (i.e. with customers and suppliers), customer satisfaction, and financial performance using survey data collected from 214 manufacturing firms in China. The results suggest that internal integration significantly influences both dimensions of external integration, customer and supplier integration; and that supplier integration is significantly and positively related to financial performance. The results also show that customer satisfaction is significantly and positively related to financial performance and fully mediates the relationship between customer integration and financial performance. Consistent with organizational learning theory the study shows that internal integration is an enabler for external integration which suggests that companies need to progress from good internal practices and processes to effective management of external processes. In particular this study positions the benefits of integration as accruing from learning and financial performance being correlated to information flows. This study suggests that integration is the mechanism whereby information is transmitted and subsequently synthesized. The contextualization and organization afforded through internal integration facilitates determining what information to bring in from outside the organization and knowing what to do with the information when it arrives. Hence a contribution of this study is to tie supply chain integration to the literature and principles of organizational learning theory thereby opening a new perspective on the topic.

1. Introduction

Supply chain management (SCM) seeks to enhance competitive performance by closely integrating the internal functions within a company and effectively linking them with the external operations of suppliers, customers, and other channel members (Kim, 2009). Through cross-functional integration within a firm and integration with suppliers and/or customers superior supply chain performance can be achieved (Kim, 2009; Swink et al., 2007; Van der Vaart and Van Donk, 2008; Zailani and Rajagopal, 2005; Zhao et al., 2011). The importance of supply chain integration (SCI) has been conceptually and empirically addressed in the literature and has become well accepted by researchers (Flynn et al., 2010; Frohlich and Westbrook, 2001; Lau et al., 2010; Mason-Jones and Towill, 1997).

The benefits of integrating and coordinating supply chain partners have been recognized in many industries (Flynn et al., 2010; Wong et al., 2011), and SCI is considered to be one of the major factors in improving performance (Van der Vaart and Van Donk, 2008). Yet there have been a collection of voices indicating that SCI is not an effective strategy for improving performance (Bask and Juga, 2001; Christopher and Juttner, 2000; Fabbe-Costes and Jahre, 2008; Harland, 1996; Power, 2005). Few voices have made explicit ties to overarching theory and none of which we are aware to organizational learning theory. Hence one possible conclusion must be that the understanding of integration is incomplete (Boon-itt and Paul, 2006; Childerhouse and Towill, 2000) and this incomplete understanding regarding the implications of integration remains a challenge for both researchers and managers (Fabbe-Costes and Jahre, 2008). Consequently, there have been calls for further empirical research on the link between integration and performance (Min and Menzer, 2004; Rodrigues et al., 2004; Stank et al., 2001).

Some studies (e.g. Stevens, 1989, 1990) conceptually describe the relationship between internal and external integration, but

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empirical studies investigating the relationship offer limited evidence and insight (Hillebrand and Biemans, 2003; Zhao et al., 2011). This could be attributable to the models tested, as they generally link integration directly to performance. One such study is that of Braunscheidel and Suresh (2009) which modeled and found support for the direct link between both internal and external integration and agility. The inconsistency of findings and calls for additional research on the topic are suggestive of a missing variable.

Just as integration has been linked to performance, there has been a significant amount of research into the relationship between customer satisfaction and performance (Heskett et al., 1994, 1997; Reichheld, 1996). The results show a positive correlation between satisfied customers and performance (Dotson and Allenby, 2010; Lambert et al., 1998; Narayanan et al., 2011). Since one aim of supply chain integration is to improve customer satisfaction and customer satisfaction has been linked to performance, we suggest that customer satisfaction may be the missing variable.

This study seeks to illuminate the role of customer satisfaction in the context of SCI and its impact on financial performance and does so through the lens of organizational learning theory. The study is designed in such a way that we can also provide insight into the relationship between the two dimensions of SCI: internal and external integration. Hence a contribution of this study is to tie SCI to the literature and principles of organizational learning theory thus opening a new perspective on the topic.

The remainder of this paper is organized as follows. First, a theoretical perspective is offered and research hypotheses are developed. Second, the study design and methodological procedures are described. Third, the findings of the study are presented and discussed, and a set of managerial implications are drawn. Lastly, we conclude with a brief summation, the main limitations, and offer topics for future research.

2. Theoretical background and research hypotheses

2.1. Organizational learning theory

Organizational learning is reflected in changes in organizational knowledge (March, 1991). Organizational learning is exemplified by sensing environmental changes and responding to them (Argyris and Shon, 1978). The information gained from having sensed a change in the environment, when contextualized and acted upon, leads to new knowledge and learning; learning being the application of the information for definitional purposes or the establishment or refinement of a causal relationship (Busche, 2009). Hence a key aspect of organizational learning is the interaction that takes place between parties, be they individuals or organizations (Argyris and Shon, 1978). Knowledge pertains to information related to facts, concepts, interpretations, ideas, observations, and judgements (Alavi and Leidner, 2001). Taken with the principle that knowledge is created by the flow of information (Nonaka, 1994), learning is thus the accumulation of knowledge and the understanding of its potential benefit.

SCM entails coordinating flows of materials, information, and funds to create customer value while simultaneously seeking to improve profitability (Warkentin et al., 2001). Coordination amongst trading partners requires shared knowledge to enable the effective management of activities. Hence knowledge becomes a flow in its own right (Alhashmi et al., 2006) with its success dependent upon the web of organizational relationships. As such the supply chain, in particular the integration of trading partners, becomes a mechanism for transmitting knowledge and building organizational learning.

2.2. Supply chain integration

SCM comprises the integration of key business processes that entail the provision of products, services, and information adding value for customers and other stakeholders from design through delivery, from original suppliers to end user (Gunasekaran and Ngai, 2004; Lambert et al., 1998). If viewed from the perspective of an actor network (Callon, 1986) then integration can be represented by Porter's "value chain" (Porter, 1985, 1987). Porter suggests that enhancing the effectiveness of the linkages between activities (primary and support) enhances efficiency, thereby increasing profitability. SCI is conceptualized as a process of redefining and connecting entities through coordinating or sharing information and resources (Katunzi, 2011). This includes collaboratively managing intra- and inter-organizational processes to achieve effective and efficient flows of products, services, information, and money with the objective of providing maximum value to customers (Bowersox et al., 1999; Naylor et al., 1999; Zhao et al., 2008).

SCI is a multidimensional construct (Flynn et al., 2010). The literature reveals consensus that there are mainly two types of SCI: external integration and internal integration (Narasimhan and Kim, 2002; Swink, et al., 2007; Vijayasarathy, 2010). External integration comprises supplier and customer integration (Droge et al., 2012). Petersen et al. (2005) indicate that the supplier integration entails providing information and participating directly in making decisions. Supplier integration is characterized by the buyer and upstream supplier having a cooperative relationship. The relationships could potentially include initiatives and programs fostering linkages between the trading partners. Customer integration encompasses flows of information, service, and materials; information flowing back from customer to supplier and services and materials flowing forward (Frohlich and Westbrook, 2001; Narasimhan and Carter, 1998). In particular, Wisner et al. (2008) indicate that customer integration entails understanding the interaction between the supplier's products and processes and the customer's business. The attention and resources committed by the supplier for these activities are for the purpose of helping the customer improve its competitive standing. As such, customer integration entails incorporating customers in decisions pertaining to the products sold by the supplier (Pagh and Cooper, 1998; van Hoek et al., 1998) and encompasses the methods and strategies employed to improve coordination between the trading partners (Frohlich and Westbrook, 2001). Internal integration is the coordination, collaboration and integration of functional areas within the firm (Stock et al., 1998). The aim of internal integration is that the departments and functions within a company function as a cohesive process. To help make the role of integration in this study clear the research model is shown in Figs. 1 and 2. The numbering of the arrows in Fig. 1 refers to the hypotheses developed below.

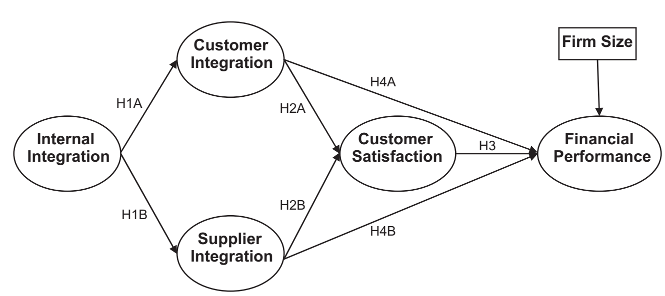

Fig. 1. Theoretical model.