

Operational Capability: The Missing Link between Supply Chain Practices and Performance

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Abstract. The relationship between supply chain practices and business performance has been widely investigated by many academics and practitioners; however, the relationship is not yet fully understood. Therefore, this paper aims to examine the relevance of several prominent theories in strategic management for explaining the mediating role of operational capability in the relationship between supply chain practices and business performance. The resource-based view of the firm and neo-institutional theory are reviewed for their applicability to relate supply chain practices and operational capability in explaining sustained business performance. Supply chain practices are insufficient to drive business performance. Firms need to be able simultaneously to increase efficiency through supply chain practices and to be innovative through operational capability. Specifically, operational capability is forwarded as a key firm-specific capability that can result in significant and long-term improvement in organisational sustainability. Operational capability can serve as a critical mediating factor that better transmits the ambitions of supply chain practices onto business performance. As such, this paper provides a conceptual support to urge further research to empirically evaluate the relationship between supply chain practices, operational capability and business performance.

Introduction

This article examines the relevance of several prominent theories in strategic management for explaining the mediating role of operational capability in the relationship between supply chain practices and business performance. Supply chain is a network consists of all parties involved directly or indirectly which includes manufacturer, supplier, retailer, customer and so forth, in producing and delivering products or services to ultimate customers – both in upstream and downstream sides through physical distribution, flow of information and finances [1]. Supply chain practices include a set of approaches and activities utilised by an organisation to effectively integrate supply and demand for improving the management of its supply chain [2]. In this paper, supply chain practices are categorised into two forms of supply chain integration: internal integration and external integration. Supply chain integration is the process to collaborate different functional departments within a business firm, with its suppliers and customers in order to achieve a mutually acceptable outcome [3].

Capability is a superior and distinctive way of coordinating, deploying and allocating resources; it is different from a resource [4]. Operational capability is “firm-specific sets of skills, processes, and routines, developed within the operations management system that is regularly used in solving its problems through configuring its operational resources” [5]. In fact, operation encompasses all facets of firm’s activities directed toward producing a product or rendering a service [6]. The construct of operational capabilities consists of cooperation, customisation, responsiveness, improvement, innovation and reconfiguration [5,6]. The resource-based view (RBV) of the firm and neo-institutional theory are reviewed for their applicability to relate supply chain practices and operational capability in explaining sustained business performance.

Resource-based View

The static view of the RBV posits that a firm's resource base is the antecedent to competitive advantage [7]. Essentially, the RBV is based on the assumptions that firms have heterogeneous resources [8] and the resources remain imperfectly mobile over time [7]. In addition, sustainable competitive advantage results when these four attributes of firm's resources are satisfied: valuable, rareness, non-substitutability and inimitability [7,9]. First, the resources must be valuable to allow the firm to exploit opportunities or neutralise threats in its external environment. Second, the resources must be rare that are hard for rival firms to acquire. Third, the resources must be imperfectly imitable that other firms cannot easily develop. The firm resources that are imperfectly to imitate are created because of one reason or a combination of three reasons: (a) the ability of the firm to obtain resources is dependent upon unique historical conditions; (b) the relationship between the firm's resources and its competitive advantage is causally ambiguous; or (c) the firm's resources creating the competitive advantage is knowledge-based or socially complex. Finally, the resources are non-substitutable and do not have strategic equivalents. This means there must be no strategically equivalent valuable resources that are themselves either not rare or imitable [7,10]. The relationship between key attributes of firm resources and sustained competitive advantage is shown in Figure 1.

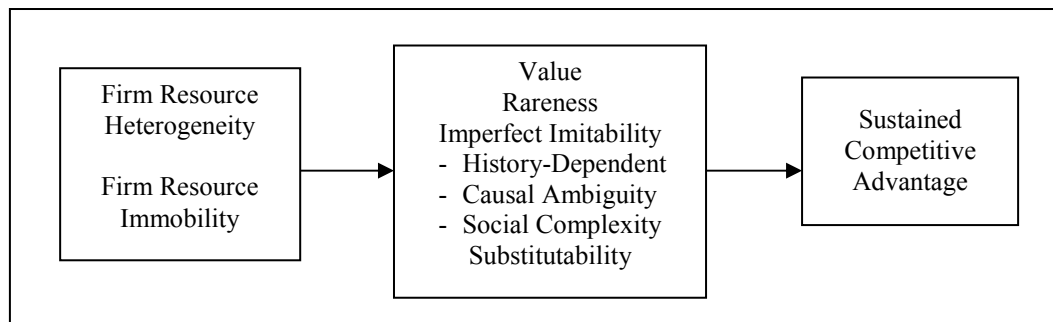


Fig. 1: The relationship between firm resources and sustained competitive advantage [7]

In a world of fierce competition and business driven by speed to market, good quality and low costs; this environment requires firms to have a source of competitive advantage that is inimitable and non-substitutable. For a capability to achieve sustainable competitive advantage it must be non-substitutable, inimitable, path-dependent and developed over time [11]. Inimitability is central to the RBV of the firm [12] and it provides the understanding that firms achieve sustainable competitive advantage [13]. An important factor in preventing a firm's capabilities from being imitated is causal ambiguity [7], whereby the source of a firm's competitive advantage is unidentified by its competitors [14].

According to Schroeder et al. [11], practices are insufficient to drive better performance and improve profits, because the effects of competitors imitating a successful practice are not addressed in the practice–performance relationship. Therefore, customised and proprietary practices are important to keep firms' competitive edge over their rivals. However, practices are standardised and if many organisations adopt the same practices, how can they lead to a sustainable competitive advantage? If generic best practices can be easily copied and are equally beneficial, how can they confer lasting benefits? This claim provides the broad framework for arguing the importance of relating supply chain practices and operational capability in explaining business performance. In this study, the argument is that if firms utilise supply chain practices to drive operational capability, then their competitors are not able to duplicate the strategies as they generate causal ambiguity and therefore are impossible to replicate. Furthermore, causal ambiguity will be a main barrier to imitation if the resource is knowledge-based or socially complex [14,15]. The knowledge-based resources are the core essence of the RBV [16] and the RBV suggests that business performance is based on a heterogeneous bundle of resources in developing firm-specific capabilities [8].

Neo-Institutional Theory

From the neo-institutional theory perspective, rational strategies for individual organisations may not be rational when adopted by a large number of organisations [17]. This is because the concept of institutional isomorphism is a constraining process that forces one unit to resemble other units that face the same set of environmental conditions. Normative isomorphism pushes organisations toward the adoption of common practices over time. Normative isomorphism refers to “organisational change as a response to exchange with peer organisations and professional association” [18]. As such, the practices will lose their economic and competitive power. Supply chain practices can be identified, communicated, disseminated and replicated easily. This means that the practices can be followed and adopted quickly by other firms and do not have long-term sustainability. In fact, this situation is similar to Hayes and Wheelwright’s [19] Stage 2 versus Stage 4. In Stage 2, an organisation benchmarks its manufacturing process against its competitors to achieve parity with the industry norms; while in Stage 4, manufacturing is the basis of organisational competitive advantage and world-class manufacturing to drive business strategy in exceeding customer expectations.

In contrast, capabilities are long lasting due to the nature of elusiveness and uniqueness. Operational capabilities are firm-specific sets of routines, skills and processes that develop internally through various activities and practices in daily operations for a long period of time [5]. Capabilities are tightly embedded in organisational processes and revolve around transformation, learning and coordination [20]. The capabilities evolve from the problems an organisation faces over time through fitting practices to its unique history [21] and configuring resources in response to its environment [4]. A capability is taken as a mechanism for transforming homogeneous practices into heterogeneous ways of deploying resources through a customisation process: practices are adjusted to reflect a firm’s history [21] and culture; they encapsulate both explicit elements and tacit elements to handle the problems of the firm [5]; and practices are coordinated to create unique, firm-specific interactions and complementarities [22].

Conclusions

Due to the fact that supply chain practices do not possess the necessary traits to be sources of competitive advantage (easy to substitute and imitable), there appears to be a means of nurturing the operational capabilities as sources of competitive advantage. As such, organisations must be able simultaneously to increase efficiency through supply chain practices and to be innovative through operational capabilities. Capabilities are hard to identify, articulate and decode once they are established and they tend to have a long-term effect on performance. Therefore, operational capability can serve as a critical mediating factor that better transmits the ambitions of supply chain practices onto organisational performance.

An empirical study provides support for the view that operational capabilities mediate the relationship between operational practices and operational performance [6]. Essentially, practice is argued to provide a firm with superior performance; however, this occurs in relationship to capability and is aided by capability. Therefore, supply chain practices can have an impact on operational capability, which in turn affects performance. This chain implies an indirect link between supply chain practices and performance. Although there is a debate, the operations literature has illustrated a positive relationship between operational capability and performance in the theory of production competence [23,24].

References

- [1] J. T. Mentzer, Supply Chain Management, Sage Publications, Inc., United States of America, 2001.
- [2] S. C. L. Koh, M. Demirbag, E. Bayraktar, E. Tatoglu, S. Zaim, The Impact of Supply Chain Management Practices on Performance of SMEs, *Industrial Management & Data Systems*. 107(2007) 103-124.
- [3] S. Boon-itt, C. W. Wong, The Moderating Effects of Technological and Demand Uncertainties on the Relationship Between Supply Chain Integration and Customer Delivery Performance, *International Journal of Physical Distribution & Logistics Management*. 41(2011) 253-276.
- [4] G. Schreyogg, M. Kliesch-Eberl, How Dynamic Can Organizational Capabilities Be? Towards a Dual-Process Model of Capability Dynamization, *Strategic Management Journal*. 28(2007) 913-933.
- [5] S. J. Wu, S. A. Melnyk, B. B. Flynn, Operational Capabilities: The Secret Ingredient. *Decision Sciences*. 41(2010) 721-754.
- [6] S. J. Wu, Exploring the Direct versus Indirect Linkages Among Operations Practices, Operations Capabilities and Operations Performance: Does Competitive Context Moderate the Key Relationships? Doctoral of Philosophy, Michigan State University, USA, 2007.
- [7] J. B. Barney, Firm Resources and Sustained Competitive Advantage, *Journal of Management*. 17(1991) 99-120.
- [8] T. T. Coates, C. M. McDermott, An Exploratory Analysis of New Competencies: A Resource Based View Perspective, *Journal of Operations Management*. 20(2002) 435-450.
- [9] I. Dierickx, K. Cool, Asset Stock Accumulation and Sustainability of Competitive Advantage, *Management Science*. 35(1989) 1504-1511.
- [10] M. A. Hitt, R. D. Ireland, R. E. Hoskisson, *Strategic Management: Competitiveness and Globalization: Concepts*, ninth ed., Cengage Learning, Canada, 2011.
- [11] R. G. Schroeder, K. A. Bates, M. A. Junttila, A Resource-Based View of Manufacturing Strategy and the Relationship to Manufacturing Performance, *Strategic Management Journal*. 23(2002) 105-117.
- [12] J. R. Bryson, M. Taylor, Competitiveness by Design and Inimitability through Service: Understanding the Dynamics of Firm-Based Competition in the West Midlands Jewellery and Lock Industries, *The Service Industries Journal*. 30(2010) 583-596.
- [13] J. C. Spender, R. M. Grant, Knowledge and the Firm: Overview, *Strategic Management Journal*. 17(1996) 5-9.
- [14] M. A. Peteraf, The Cornerstones of Competitive Advantage, *Strategic Management Journal*. 14(1993) 179-191.
- [15] J. T. Mahoney, J. R. Pandian, The Resource-Based View within the Conversation of Strategic Management, *Strategic Management Journal*. 15(1992) 363-380.
- [16] K. Conner, C. K. Prahalad, A Resource-Based Theory of the Firm: Knowledge versus Opportunism, *Organization Science*. 7(1996) 477-501.
- [17] P. J. Dimaggio, W. Powell, The Iron Cage Revisited. Institutional Isomorphism and Collective Rationality in Organizational Fields, *American Sociological Review*, 48(1983) 147-160.

- [18] B. Caemmerer, M. Marck, The Impact of Isomorphic Pressures on the Development of Organisational Service Orientation in Public Services, Australian and New Zealand Marketing Academy. 30 November - 2 December 2009, Melbourne, Australia: ANZAM, pp. 1-7, 2009.
- [19] R. H. Hayes, S. C. Wheelwright, Restoring our Competitive Edge: Competing Through Manufacturing, Wiley, New York, 1984.
- [20] J. B. Harreld, C. A. O'reilly, M. L. Tushman, Dynamic Capabilities at IBM: Driving Strategy into Action, California Management Review. 49(2007) 21-43.
- [21] D. J. Teece, G. Pisano, A. Shuen, Dynamic Capabilities and Strategic Management, Strategic Management Journal. 18(1997) 509-533.
- [22] R. Amit, P. J. H. Schoemaker, Strategic Assets and Organizational Rent, Strategic Management Journal. 14(1993) 33-46.
- [23] S. K. Vickery, C. Droge, R. E. Markland, Production Competence and Business Strategy: Do They Affect Business Performance? Decision Sciences. 24(1993) 435-455.
- [24] R. W. Schmenner, G. Vastag, Revisiting the Theory of Production Competence: Extensions and Cross-Validations, Journal of Operations Management. 24(2006) 893-909.