A replication and extension of quality management into the supply chain

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Abstract

As competition moves beyond a single firm into the supply chain, researchers are beginning to explore quality management (QM) in a supply chain context. The literature suggests that supply chain management (SCM) consists of internal practices, which are contained within a firm, and external practices, which cross organizational boundaries integrating a firm with its customers and suppliers. Supplier quality management and customer focus are two QM practices that are also clearly in the domain of SCM. In this study we investigate how these two supply chain management-related quality practices lead to improved performance and examine the practices that precede and mediate those relationships. In doing so, we replicate and extend the relationships among the QM practices and their effects on firm performance suggested in Kaynak [Kaynak, H., 2003. The relationship between total quality management practices and their effects on firm performance. Journal of Operations Management 21, 405–435] using survey data gathered from firms operating in the U.S. The inclusion of customer focus and supplier quality management in the QM model supports the importance of internal and external integration for quality performance. Implications of the results for researchers and practitioners are discussed, and further research implications are suggested.

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1. Introduction

Empirical quality management (QM) research has evolved over the last 20 years. Empirical research has defined and measured QM practices (e.g., Ahire et al., 1996; Flynn et al., 1994; Nair, 2006; Saraph et al., 1989; Sila and Ebrahimpour, 2005). Numerous studies have investigated the relationships among QM practices and various aspects of a firm’s performance (e.g., Adam et al., 1997; Ahire and O’Shaughnessy, 1998; Dow et al., 1999; Kaynak, 2003; Samson and Terziwoski, 1999). As competition moves beyond a single firm into the supply chain, focus is shifting from management of internal practices alone. Instead, quality managers must integrate their firms’ practices with those of customers and suppliers (e.g., Flynn and Flynn, 2005; Kannan and Tan, 2005; Robinson and Malhotra, 2005; Sila et al., 2006). Integrating QM and supply chain management (SCM) will be important for future competitiveness (Flynn and Flynn, 2005; Matthews, 2006; Robinson and Malhotra, 2005).
Two QM practices, supplier quality management and customer focus, extend QM into the supply chain. We investigate how these two SCM quality practices lead to improved performance and examine the practices that precede and mediate those relationships. In doing so, we replicate and extend the relationships among the QM practices and their effects on firm performance suggested in Kaynak (2003) in a different sample and in a supply chain context. This study contributes to the literature by extending the examination of QM into the supply chain and by increasing confidence in the relationships among internal QM practices and performance. Replication implies that results can be generalized with confidence, building the foundation for theory (Cook and Campbell, 1979). Though relatively rare in business disciplines (Murgolo-Poore et al., 2002; Singh et al., 2003; Tsang and Kwan, 1999) – and particularly rare in operations management (Frohlich and Dixon, 2001) – replication is essential for the integrity of empirical research (Berthon et al., 2002; Frohlich and Westbrook, 2001; Kannan and Tan, 2005; Li et al., 2006; Narasimhan and Kim, 2002), and there is overlap between SCM and QM practices (Kannan and Tan, 2005; Robinson and Malhotra, 2005). Supplier quality management and customer focus are two QM practices that are clearly in the domain of SCM.

The original relationships among QM practices confirmed in Kaynak (2003) are shown in Fig. 1. With the inclusion of customer focus, and based on an updated literature review, some of the relationships

<table>
<thead>
<tr>
<th>QM practices</th>
<th>Description</th>
<th>Studies</th>
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