



Supplier integration and company performance: A configurational view

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ABSTRACT

Supplier integration is considered a key managerial strategy for improving buyer performance. This study adopts a configurational approach to supplier integration, based on the interaction and complementarity between supply chain management practices. In this perspective, this study explores the impact of supplier integration and measures aimed at creating a fast supply network structure on buyer performance. This research also attempts to ascertain whether these practices can exert a synergic effect. After examining data from a sample of 186 manufacturing plants, we can conclude that while taken singly supplier integration and fast supply network structure practices have a markedly positive effect on the performance goals considered (i.e., efficiency, schedule attainment and flexibility); in addition, they interact to produce an additional synergic effect on efficiency and schedule attainment. The analyses also reveal that investing in FSNS or SI initiatives alone can be risky. On one hand, when companies fail to make any effort to structure their supply network in order to achieve fast lead times, the impact of supplier integration on efficiency and schedule attainment may be hindered and, in extreme cases, supplier integration might even have no impact at all. On the other hand, investing only in fast supply network structure initiatives, without striving to achieve an adequate level of supplier integration might well be useless: indeed, even detrimental to any improvement in performance. These findings provide useful guidelines for managers who must decide how to combine supplier integration and fast supply network structure initiatives in order to improve or maximize performance.

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1. Introduction

Over the years the increase in global competition has forced several companies to rethink their supply chain strategies in order to reduce their production costs, while at the same time guaranteeing better customer service. In several industries, supplier and production networks have undergone significant changes. An increasing number of firms are outsourcing more activities, and often coordinate global networks that include both local and international suppliers. As a result, supply chain (SC) integration, which aims to create “seamless” supply chains by coordinating information and materials flows, is considered an important factor in achieving good performance levels [1–4]. SC integration has been studied from different perspectives. Some works concentrate on integration with customers [5–7] or suppliers [8–11], and study the impact of each on company performance; whereas others consider external integration with both customers and suppliers aimed at coordinating the entire supply network [12–14].

This research focuses on supplier integration (SI), now a prime topic for logistics managers and researchers, as it may have a

considerable impact on the performance of manufacturers/buyers and of the entire supply network [8,15–18]. Numerous studies have analyzed the concept of supplier integration – sometimes referred to as “supplier collaboration” [10,19] – by focusing on such various research issues, such as buyer–supplier sharing of sensitive data and information [17,20–23], inventory planning and logistics integration [24–26], buyer–supplier partnerships and supplier development [8,9,16,27,28], supplier involvement in new product/process development [10,29,30], and investments in co-specialized assets [31]. In line with other studies [16,19], in this research, SI is defined as the degree to which a firm exchanges information and develops partnerships with its suppliers in order to collaboratively manage materials and information flows, thus smoothing and optimizing procurement and production processes [32].

In the literature on supply chain management (SCM), the general opinion is that SI contributes to improving various performance dimensions in the buying firm [12,16,17,33,34]. In fact, when buyers and suppliers behave in coordination with each other as part of a unified system they can gain several benefits as regards cost reductions, inventories, order fill rate, quality, customer satisfaction and profitability. Several studies [11,19,35,36] used the resource-based view (RBV) to explain why SI can determine significant improvements in various dimensions of performance. Authors agree that SI can generate knowledge and

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assets difficult to gain otherwise, and thus crucial for achieving an advantage over competitors. In fact, SI facilitates the sharing of complementary resources and information within the supply network, as well as fundamentally tacit knowledge generated by collaborative relationships and joint improvement efforts.

Other studies [11,16,35] used transaction cost analysis (TCA) to provide arguments supporting the positive relationship between SI and performance. According to TCA, SI is a hybrid governance mechanism. It guarantees the same advantages as vertical integration, while limiting the risks and costs associated with it. SI endeavors to create a climate of intimacy and trust, which reduces transaction costs, and enhances firms' performance.

However, although most studies converge regarding the positive influence of SI, recent developments in SCM studies have questioned the assumption that supplier integration practices always lead to significant performance improvements. For instance, Das et al. [11] and Squire et al. [19] point out that in certain conditions, supplier integration benefits can be offset by inefficiencies and abnormal behavior. In recent years, several doubts have been raised concerning the positive impact of SC integration in general on company's performance [2,18,27,37–40].

According to an emerging paradigm in SCM research, in order to better understand the relationship between SC integration and performance, it is essential to recognize the combinatory effects of different practices on performance, adopting a configurational view of integration, based on the notion of interaction and complementarity [2,11]. A complementarity emerges when “doing more of any one [activity] increases the returns to [be gained from] doing more of the other” [41], [p.181]. Thus, a configurational view of integration suggests that it is not the impact of isolated integration practices that matters so much as the synergies that emerge from specific arrangements of practices.

SC integration studies on complementarities remain scarce. However, researchers agree that significant performance improvements require a coherent mix of SCM initiatives encompassing, for instance, lead time reduction, supplier network rationalization, production network reconfiguration, implementation of supply network performance measurement systems, etc. [14,42]. Coherently with this conviction, several authors developed a comprehensive SCM framework simultaneously addressing numerous dimensions and practices [43,44]. However, few studies explicitly analyzed whether SC integration and other SCM practices interact and influence performance synergically [45–49]. Most of these studies focus on integration with customers and results found are limited to efficiency performance [46,48,49]. The only ones considering SI investigate the synergy between SI, customer and internal integration [45,46].

In any case, an extensive literature proposes that SI practices should be accompanied by adequate measures aimed at creating a fast supply network structure (FSNS), i.e., a supply network configuration characterized by short lead times. In this paper the terms FSNS and FSNS practices will be used interchangeably in discussing the extent to which supply chain managers use practices aimed at shortening lead times in designing their supply networks. Some authors argue that, when companies make no effort to reduce lead times in their supply network, SI may fail to be beneficial, since suppliers are not able to respond by aligning their plans to the buyers' information, and any collaborative effort which might arise in dealing with exceptional situations or problems could turn out to be useless [50,51]. In addition, FSNS practices could be a useful tool in limiting any negative effects of SI resulting from frequent modifications in planning and schedule-linked nervousness, when lead times are long [25]. On the other hand, as several SCM cases demonstrate [52], investing in FSNS practices alone is often inadequate in producing significant benefits when producer and suppliers do not opportunely integrate

their plans, exchange data, or develop collaborative relationships. In such cases, the suppliers' uncertainty as to final demand and downstream production plans continues to persist, as does the producer's uncertainty concerning supply deliveries or potential supply-linked problems (e.g., low quality).

However, research explicitly analyzing the synergic effect between SI and FSNS practices is scarce and fragmented, and empirical evidence is still rare.

Thus, from a configurational perspective, this study strives to contribute to theory by analyzing the impact of SI and FSNS practices, including their synergic effect, on the buying firm's performance. The assumption that firm performance depends on a coherent mix of integration and supply network structure decisions is not new. It originated from a host of seminal studies [38,53–55] arguing that the way supply networks perform depends on how supply chain processes are managed and supply network structures shaped. Compared to the previous research analyzing synergies between SCM practices [45–49], the originality of this research lies in the attempt to study the interaction between SI and FSNS, and to include various dimensions of performance. As before explained, prior studies focus on the synergy between customer integration and other SCM practices [48,49], or on the synergy between supplier, customer and internal integration [45,46], and are usually limited to efficiency performance [46,48,49]. One of these studies [49] considers FSNS initiatives, but limits analysis to their moderating effect on the relationship between customer integration and supply chain efficiency.

The aim of this research is to provide empirical evidence based on a large sample as a basis for discussing whether FSNS practices and SI can influence performance through a synergic effect, and whether the decision not to invest in one type of practice may hinder the positive impact of the other. Such hindrance could help to explain why some studies fail to detect a significant relationship between SI and performance. This research suggests that companies could achieve significant practical results by investing in both SI and FSNS initiatives, thus exploiting their synergic effect. It also suggests how to avoid the risk of failing to achieve significant performance improvements through SI or FSNS.

In this paper, Section 2 presents the research framework and discusses the research hypotheses to be examined, and Section 3 presents the sampling frame, measurements and data collection. An analysis of the results is then presented, followed by the implications resulting from the study and research limitations.

2. Research framework

Fig. 1 illustrates the research model that this study intends to investigate. In line with a configurational view, this model assumes not only that variables SI and FSNS can positively affect performance (i.e., buying firm efficiency, schedule attainment and flexibility) but also, when implemented together, that they can influence company performance through their synergic effect.

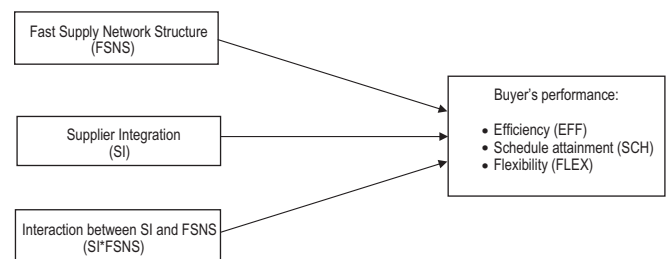


Fig. 1. Research framework.

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