PERFORMANCE BENEFITS OF HARMONIZING ORGANIZATIONAL STRATEGY WITH STRATEGY AT SUPPLY CHAIN LEVEL

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Abstract: *Supply chain management (SCM) reflects the most recent approach to logistics integration, the final integrating perspective on the evolutionary processes of purchasing, production support and distribution. Existing supply chain literature identifies three hierarchical levels of SCM: strategic, operational and tactical level. After a discussion of the performance transmission tools and their mechanism, this paper uses logistic modelling with SPPS to estimate the impact of harmonizing organizational strategy with strategy at supply chain level on the organizational performance. Data comes from a questionnaire based survey which took place in 2011. A sample of 100 enterprises representative at national level was randomly selected. Results document the statistically significant impact of customers' orientation and integration efforts on organizational performance. Thus we have found that the odds for an increased performance are 1.21 times higher for organization that communicate customers' future strategic needs throughout the supply chain and 1.34 times higher for companies that search for new ways to integrate SCM activities. We also found a significant effect of industry on organizational performance. The odds of increased performance are lower for companies in manufacturing industries as compared to service companies. The results underline the importance of strategic planning in the context of supply chains. Customers' orientation and integration efforts are expected to increase the benefits for all supply chain participants. At the same time strategic planning in the context of supply chain is expected to better balance the interest of multiple stakeholders and to adequately address the multidimensionality of organizational performances. The quantitative methodology employed by the present study allows drawing meaningful conclusions valid in the context of national supply chains. Nevertheless further research is needed to consolidate these findings. Insofar as firms' size, ownership and the overall economic context have also been found to have a positive impact on organizational performance, we argue that future research in this field would benefit for employing more controls.*

Keywords: supply chain management, supply chain performance

JEL classification: *M10, C54*

1. Introduction

A supply chain is a network of suppliers, manufacturers, warehouses, distributors and retailers (Șeitan, 2008). The supply chain encompasses all organizations and activities associated with the flow and transformation of goods from raw materials to the end user and the information flows associated with it (Constangioara, 2013). Gunasekaran, Patel and McGaughey (2003) identify three hierarchical levels of SCM: strategic, operational and tactical level. At a strategic level, SCM provides strategic guidance, transforming the way in which improving the flows control within the supply chain better addresses customers' demands. At operational level, the above-mentioned authors consider that SCM favours more efficient flows through cross-functional teams. At tactical level, the SCM deals with resource allocation given binding constraints. The supply chain management's literature focuses more on efficiency issues such as cost reductions and less on strategic fitting of supply chains operations to consumer demands.

The present paper follows the existing supply chain literature, focusing on estimating the impact of harmonizing organizational strategy with strategy at supply chain level on the organizational performance.

The first part of the study presents the tools necessary to transmit performance from the level of supply chain to firms in the supply chain. Understanding the transmission mechanisms of these tools is essential in defining the performance metrics in a supply chain. The second part of the study uses a sample of 100 observations from Romanian firms to test the main hypothesis of interest:

H0 - at a national level, SCS has a positive impact on organizational performance.

2. Performance transmission tools and their mechanisms

The tools ensuring the transmission mechanism of performance from the level of supply chain to the level of firms are presented in table 1.

Table1: The tools ensuring the transmission mechanism of performance

Tools	Dimensions of performance
Cross-functional teams	▪ efficiency and effectiveness
Strategic partnerships	▪ financial and operational performance
Continuous improvement	▪ competitiveness ▪ sustainability
Harmonizing organizational strategy with strategy at supply chain level	▪ overall supply chain performance

The first SCM tool necessary to achieve performance in a supply chain is the establishment of cross-functional teams. Such teams facilitate the resources, information flows in the supply chain, and thereby they have a positive impact on the efficiency in the supply chain. Table 1 reveals that the impact of cross-functional teams goes beyond efficiency. Boudewijn and van Weele (2012) identify two dimensions of the effectiveness tackled by cross – functions teams. First dimension covers, in addition to efficiency issues, aspects such as quantity, planning and overall performance. The second dimension stresses the necessity of cooperation

between team members and people external to the team. Boudewijn and van Weele (2012) labelled this dimension as 'external cooperation effectiveness'. Same authors identify a third dimension of the effectiveness of cross –functional teams, but this dimension is specific to cross- functional sourcing teams, covering sourcing task specific elements. We see that establishing cross – functional teams tends to increase the dimensionality of supply chain performance by broadening the dimensionality of performance towards effectiveness. Yet empirical findings on the impact of cross – functional teams on performance show that their benefits are limited in time due to overlooking people issues. Thereby research on this issue recommends enhancing collaboration, teamwork and empowerment (Boudewijn and van Weele, 2012).

The second SCM tool necessary to achieve performance in a supply chain also stresses the need for cooperation. Yet this tool embraces a more functional view of the performance, targeting financial and operational performance. The rationale behind its positive impact on organizational performance is simple: cooperation and information sharing reduces uncertainty in the supply chain. By doing so, reduces inventories and total costs, improves service and product design and, finally, promotes dissemination of new technologies. There are several studies on the impact of supply chain uncertainty on business performance. Boonyathan and Power (2012) in a survey of 1923 purchasing and procurement Australian professionals have documented that closer relationships with trading partners are positively related to organizational performance. Hendricks and Singhal (2003) investigate the shareholders wealth impact of supply chain glitches. They documented that supply chain glitches are associated with a decrease in shareholders' value of 10.28%. Same authors have also documented a negative impact of supply chain glitches on the return on sale (-13.78%) and on the return on assets (-2.32%). Lee, Padmanabhan and Whang (2012) focus on an information distortion in a supply chain known as bullwhip effect. The paper does not provide empirical evidence but rather calculates the variances of orders and sales as information is transferred in the form of orders upstream the supply chain. They prove that the variance of orders tend to be higher than the variance of sales, with distortion amplifying as information moves upstream. To counteract the bullwhip effect, the authors recommend information sharing, coordination of orders and simplification of pricing / promotional activities of the manufacturer.

The third tool employed to achieve performance in a supply chain is continuous improvement. This tool serves two objectives: increasing competitiveness and ensuring sustainability. The competitiveness is achieved by a better alignment between supply chain priorities and product / business strategies. Regarding the second objective, managing business risks, realizing efficiencies and creating sustainable products are considered the business drivers of supply chain sustainability.

Seitan (2008) presents from a theoretical stance the performance benefits of harmonizing organizational strategy with strategy at supply chain level (SCS). The hypothesis of the research (there is a positive relationship between SCS and organizational performance) is based on the research of Algren and Kotzab (2011). Questions to assess the elements of SCS were proposed by Wisner (2003). They are presented in table 2.

3. Empirical analysis of performance measurement in Romanian supply chains

3.1. Data and methodology

Our empirical analysis uses a national representative sample of 100 companies. Similar sample size was also used by Gunasekaran, Patel and McGaughey (2003). The questionnaire used for data collection in 2011, uses a scale from one to seven to assess the elements of SCS. Most empirical research use ordinary least squares regressions (OLS) to model the performances in supply chains (Constangioara, 2013). Of 100 questionnaires mailed only 26 returned usable data, for a response rate of 26%, similar to that obtained in other supply chain empirical research (Constangioara, 2013).

For testing the research hypothesis this paper uses a logistic regression. The option for logistic regression instead of OLS is natural when estimating probabilities. Logistic regression assumes a logistic distribution of the error term. In this case the probability of interest is given by equation 1:

$$\Pr(Y_i = 1 \mid X_i) = \frac{\exp(bX_i^{'})}{1 - \exp(bX_i^{'})} \qquad (1)$$

The working sample is more than sufficient for formal quantitative analysis (Constangioara, 2013).

3.2 Main results

Independent variables used in logistic regression correspond to the dimensions of SCS proposed by Wisner (2003). In addition to SCS characteristics, we control for industry. The dependent variable is dichotomous, with value one corresponding to an increase in ROS over a two years period (2009 to 2010) and zero otherwise. Results of logistic regression are presented in table 2.

Table 2: The SCS impact on organizational performance

Variables labels	**Effects**
Manufacturing	-0.06
Searching for new ways to integrate SCM activities	0.29**
Creating a greater level of trust throughout the supply chain	0.07
Establishing more frequent contacts with supply chain members	0.15
Communicating customers' future strategic needs throughout the supply chain	0.19*
Communicating your firm's future strategic needs to suppliers	0.17
Note *** statistical significance at p=0.01 ** statistical significance at p=0.05 * statistical significance at p=0.1	

Results in table 2 reveal a positive relationship between efforts to promote further integration in supply chains and overall organizational performance. All the estimated coefficients have the expected sign. We see that in the context of Romanian supply chains manufacturing enterprises have lower performances than service enterprises. All variables measuring supply chain strategy have a positive impact on organizational performance. Nevertheless only searching for new ways to integrate SCM activities and strategic communication among supply chain members are found to have a statistically significant impact on organizational performance.

Concluding remarks

Table 2 documents the statistically significant impact of customers' orientation and integration efforts on organizational performance. The odds for an increased performance are 1.21 times higher for organization that communicate customers' future strategic needs throughout the supply chain and 1.34 times higher for companies that search for new ways to integrate SCM activities. We also found a significant effect of industry on organizational performance. The odds of increased performance are lower for companies in manufacturing industries as compared to service companies.

We appreciate that results reported in Table 2 document the importance of strategic planning in the context of a supply chain. Strategic focus on searching for new ways to integrate SCM activities and improving the strategic communication among the supply chain members would result in maximizing benefits for all supply chain participants.

As we have measured the organizational performance by using financial indicators, it follows that strategic focusing in the context of supply chains maximizes the value to shareholders. By documenting the relevance of communicating customers' future strategic needs throughout the supply chain, we have revealed the impact of strategic focusing on the customers. Thus, while adequately addressing the multidimensionality of organizational performance, our results also documented the impact of strategic focusing on shareholders and customers.

For further research we appreciate that it would be beneficial if we would account for interdependences among multiple performance dimensions, using a research methodology similar to that proposed by Wagner and Neshat (2010). We also propose increasing the number of independent variables. Controlling for firms' size, ownership and the overall economic context would afford a more accurate ceteris paribus estimation of the impact of strategy on the organizational performance in the context of a supply chain.

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