

RESEARCH:

The Impact of Supply Base Complexity on Performance:

The Role of Strategic Purchasing

Despite the general consensus that supply chains are getting increasingly complex, there are contrasting views on how this complexity affects firm performance. Executives focus on how supply chain complexity negatively impacts their operations, but less is known about how complexity can be successfully managed. In this research, we focused on the upstream supply chain, and examined the role of *strategic purchasing* on the impact of *supply base complexity* on *purchasing performance*. We collected survey data from 209 companies listed in the Capital Top 500 Firms of Turkey, and analyzed the findings by conducting detailed interviews with 15 senior purchasing managers. The results of our research showed that, contrary to popular belief, supply base complexity does not always negatively affect performance and some dimensions can even improve performance. We found that the basis of this difference lies in whether the companies have a strategic purchasing function or not. *Purchase category management*, *supplier risk assessment*, *supplier development*, *supplier integration* and *digital purchasing* stand out among the strategic purchasing practices that enable to manage complexity successfully.

DEFINITIONS

Supply base complexity:

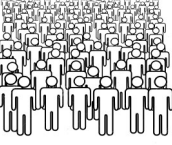


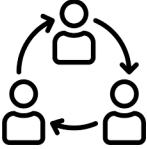


- 1) Detail (structural) complexity: Detail supply base complexity increases when the number of suppliers (horizontal complexity), supplier differentiation, geographical dispersion of suppliers (spatial complexity) and supplier interaction increases.
- 2) Dynamic (operational) complexity: Dynamic supply base complexity increases when delivery complexity (uncertainty in supplier delivery and lead-times) and supplier instability (frequently changing suppliers) increases.

Strategic purchasing:

The extent to which purchasing strategy is integrated with the overall business strategy, having long-term purchasing strategies, adopting advanced purchasing practices (e.g. supplier relationship management, supply risk management, purchase category management)

Purchasing performance:

The overall performance of the suppliers in terms of cost, quality, delivery and flexibility dimensions.

SUPPLY BASE COMPLEXITY DIMENSIONS AND IMPACT ON PURCHASING PERFORMANCE			STRATEGIC PURCHASING	
			NO	YES
DETAIL COMPLEXITY		Horizontal complexity: The number of key suppliers	No impact	++
		Supplier differentiation: Differentiation of suppliers, e.g. in terms of firm size, culture, technical capabilities	No impact	No impact
		Spatial complexity: Geographical dispersion of the suppliers to different parts of the world	No impact	--
		Supplier interaction: The extent that suppliers communicate, share information and collaborate	No impact	++
DYNAMIC COMPLEXITY		Delivery complexity: Uncertainty in supplier delivery dates and long lead-times	---	No impact
		Supplier instability: Frequently changing suppliers and having short-term relationships	--	No impact

Our results show that:

- ◆ In firms with **low** strategic purchasing, *detail complexity* dimensions do not have an effect on purchasing performance (either positive or negative).
- ◆ In firms with **high** strategic purchasing, *horizontal complexity* and *supplier interaction* have a positive impact on purchasing performance whereas *spatial complexity* has a negative impact on purchasing performance.
- ◆ Dynamic supply base complexity dimensions (delivery complexity and supplier instability) have a negative effect on purchasing performance, only in firms with low strategic purchasing.

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- ◆ Although *a higher number of suppliers* increases the administrative burden, companies with strategic purchasing function see their large supply bases as a strategic resource, benefiting from the competitive advantage and having a more advantageous position during supply chain disruptions.
- ◆ *Increased interaction between suppliers*, exchange of ideas with each other and working on joint projects is not perceived as confusion and threat in companies with strategic purchasing. In contrast, it is turned into an opportunity with advanced purchasing practices such as supplier development and supplier integration.
- ◆ Supply chains are becoming more and more global, but our research shows that global sourcing can also have a 'dark' side and its hidden costs can reduce performance. If *suppliers are spread over too many geographical regions* with only a cost focus, this can negatively affect the supply continuity and reduce performance in strategic purchasing organizations that attach more importance to long-term relationships.

Strategic Purchasing and Managing Complexity

Our survey results strengthen the view that strategic purchasing enables mitigating the negative effects and leveraging the positive effects of supply base complexity.

The detailed interviews we conducted with 15 senior purchasing managers show that these effects are exhibited via two ways.

First, firms with a strategic purchasing function take a more *proactive approach* to supply base complexity, analyze the varying effects of its different dimensions, and assess both short-term and long-term impacts. Generally, these firms consider not only have a myopic focus on cost, but also consider other performance effects such as *quality*, *innovation* and *sustainability* when managing supply base complexity.

Second, because strategic purchasing functions have higher recognition from top management and are included earlier in strategic planning processes, they have access to more resources. Therefore, they successfully manage supply base complexity by adopting more *advanced purchasing practices* such as:

- ⇒ *purchase category management*,
- ⇒ *supplier risk assessment*,
- ⇒ *supplier integration*,
- ⇒ *supplier development*, and
- ⇒ *digital purchasing*

For more information about this research: melek.ates@sabanciuniv.edu