

# Benchmarking Study of Strategic Sourcing Practices

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## 1. Introduction

With the trend toward vertical disintegration and the focus on core competencies, sourcing activities play a critical role in helping firms develop sustained competitive advantage. Leading organizations view the sourcing function as a key strategic contributor to success. Sourcing strategy is therefore an integral part of a firm's business strategy. Both the practitioner and the academic literature provide a multitude of examples and evidence for the strategic importance of the sourcing function. As organizations strive to develop and implement a sustainable sourcing strategy, they are faced with a multiple sourcing practices from which to choose. Often simultaneous efforts along multiple dimensions are warranted.

Over the last decade a number of purchasing practices have gained popularity, including global sourcing, e-procurement, supplier development, supplier involvement in new product development (NPD), and green sourcing. In addition, as organizations have become more integrated with their suppliers, issues related to security of product, information, intellectual property, and knowledge have gained prominence. In the pursuit of developing a sustainable sourcing strategy it is critical to understand the current state of industry-wide sourcing practices. We felt that this presented a formidable opportunity to benchmark the current state of established and emerging sourcing practices through an in-depth data collection and analysis effort. As such, the study was undertaken with the following objective in mind: To benchmark accepted and emerging purchasing practices in order to identify the state of sourcing practices in industry.

The recent economic conditions provided us with a unique opportunity to also assess how sourcing practices change as economies enter and exit from challenging economic times. The economy started to shrink during the last quarter of 2007, with the start of the recession during 2008. It was during this challenging environment that we conducted this project and collected data. The results presented herein therefore also offer us with an improved understanding of how sourcing practices may have changed in times of economic crises.

Without further ado, let us commence with the presentation of the findings. The remainder of this executive summary is organized as follows. Section 2 provides a summary of our key findings, and Section 3 offers an overview of our sample (please note that all data are reported in aggregate format, so that no individual respondents or company can be identified). In Section 3 we also introduce our maturity class framework, which builds our foundation for the analysis and interpretation of the results. Section 4 analyzes the primary motivations underlying the practice of sourcing initiatives,



surrounding environmental conditions of our survey respondents, and the organizational orientation of the firm. Section 5 then discusses the various sourcing practices investigated in this project: global sourcing, green sourcing, risk management, electronic coordination, supplier visibility, supplier involvement in new product development, sourcing analytics, and supplier development. Section 6 provides an overall conclusion.

Before we proceed we wanted to express our sincerest thanks to you and all the others that supported us in this study, most importantly with the gracious offering of your time in responding to the survey. Without your help, this study would not have been possible. We are therefore grateful to your commitment to academic research and the advancement of purchasing practice. This executive report is meant as our token of appreciation for your help. We sincerely hope the results presented will be valuable in your endeavors as you continue to improve your company's sourcing performance. Should you have any comments or questions to the results presented, please do not hesitate to contact us.

## 2. Summary of key findings

Sourcing professionals from a total of 129 firms returned complete and useable responses. These form the sample used to develop our insights. To conduct our analysis we divided this sample into three groups which we label *leaders*, *followers* and *laggards* based on the firm's performance. We present the details of our framework in the next section. Following are the key insights which emerge from our study

- Generating competitive advantage, market growth and social responsibility emerged as important motivations driving sourcing strategy, while regulations and industry pressure are rated as having lower importance by respondents across all three groups.
- Respondents from laggard firms perceive the economy to be significantly more challenging, while respondents from leader firms did not perceive the economic downturn to be posing too much of a difficulty.
- Conversely, respondents from leader firms indicate their firms engaging in more proactive responses to the recession, while respondents from laggard firms indicated a non-proactive response to the recession.
- Significantly higher strategic orientation of sourcing, stronger supplier relationships, higher supplier commitment, and higher levels of organizational engagement in green/environmental efforts were observed in leading firms compared to laggard firms.
- Leader firms pay significantly more emphasis on sourcing analytics, supplier development, non-contractual risk management and contractual risk management compared to laggard firms. We do not find significant difference among firms for practices related to global sourcing, green sourcing, joint green activities with suppliers, supplier involvement in new product development and the use of electronic technologies for supplier visibility and coordination.

### 3. Sample profile

In this section we provide an overview of our sample profile. Over the course of our survey project, we were able to solicit a total of 129 complete and useable responses from sourcing professionals. Most of our respondents were from the executive level, and had titles such as director of purchasing, vice president of purchasing, or vice president of operations. This provides us with a formidable response dataset within which the strategic nature of sourcing practices can be investigated; we thus ensured the high-level representation of the responses. Our respondents were also characterized by a significant length of work experience, both within their current firm (average tenure in the firm: 12 years; maximum: 42 years) and within the field overall (average tenure in the field: 22 years; maximum: 40 years).

The overwhelming majority of our respondents reported on an autonomous business unit or division belonging to a larger enterprise (50.8%), followed by individuals being located at a corporate headquarter location coordinating several business units (31.2%). A further 18.0% was from companies with no autonomous business unites. Firms were fairly evenly distributed based on their annual sales. Specifically, 24.4% of responding firms had sales of less than \$50 million, 33.1% had sales between \$50.1 and \$300 million, 29.2% had sales between \$300.1 and \$1 billion, 13.3% had sales of over \$1 billion. An overwhelming majority (80.2%) of the firms had been in business for over 20 years. In addition, most firms did not have any union representation (61.2%); only three firms had 76% or more of their labor force represented by unions.

For the ensuing further analysis and interpretation of the results, we rely on the division of our respondents into three groups. These groups were built based on the firm's performance, and as such, this classification provides what we call our maturity class framework. The following performance dimensions were considered:

- Financial performance: refers to the performance of the firm in terms of financial measures, including return on assets, return on sales, profit margin, return on investments, and stock performance.
- Environmental performance: refers to the performance of the organization in pursuing environmental concerns and green supply chain activities. Environmental performance is reflected in the organizations' achievement of reduced emissions and environmental waste.
- Market performance: refers to the firm's sales growth, market share, and customer satisfaction.
- New product performance: refers to the performance of new product development in terms of time to market, cost, quality of design, flexibility of making changes, process innovation, and product innovation.



- Operations performance: refers to the performance of the organization reflected in the efficiency of operations. Operational performance is reflected in inventory, transportation costs, operations productivity, and cost, quality, delivery and flexibility performance.

Firms that were in the best 25<sup>th</sup> percentile on overall performance were labeled as the *leaders* in our sample; these were firms that experienced, on average, an improvement across the five individual performance dimensions noted above over the last two years. In contrast, the last 25<sup>th</sup> percentile formed our group of *laggards*, who experienced, on average, a decline in the five performance dimensions. The group in between serves as our benchmark category which we label the *followers*. Table 1 provides descriptive statistics for each of the three groups across the performance dimensions. Questions assessing performance referred to individual performance measures and how they developed over the last two years. The scale employed ranged from 1 to 7 with the following categories:

- 1 – performance deteriorated by over 10%
- 2 – performance deteriorated between 10 and 5 %
- 3 – performance deteriorated between 5 and 1%
- 4 – performance remained about the same
- 5 – performance improved between 1 and 5%
- 6 – performance improved between 5 and 10%
- 7 – performance improved over 10%

Table 1. Classification of firms based on the maturity class framework

Performance Dimension	Leaders	Followers	Laggards
Financial performance	5.57	3.79	2.03
Market performance	5.86	4.25	2.69
New Product performance	6.61	5.39	4.49
Operations performance	5.27	4.44	4.13
Environmental performance	4.97	4.37	4.40
<b>Overall performance</b>	<b>5.66</b>	<b>4.45</b>	<b>3.55</b>

This information is also presented graphically in Figure 1, in the form of a spidergraph mapping the relative performance of the leaders, followers and laggards. For each of the five dimensions, the average of the individual items was taken and plotted against the graph – overall performance is the average across all five dimensions. The chart illustrates the consistent better performance of the leaders across all performance dimensions, and suggests most discrepancy among the groups in terms of financial performance. Overall, financial, market and new product performance served as the most discriminating among the three performance groups. Differences existed for environmental and operations performance, which however were not as pronounced. For example, laggards and followers had comparable values on these two dimensions.

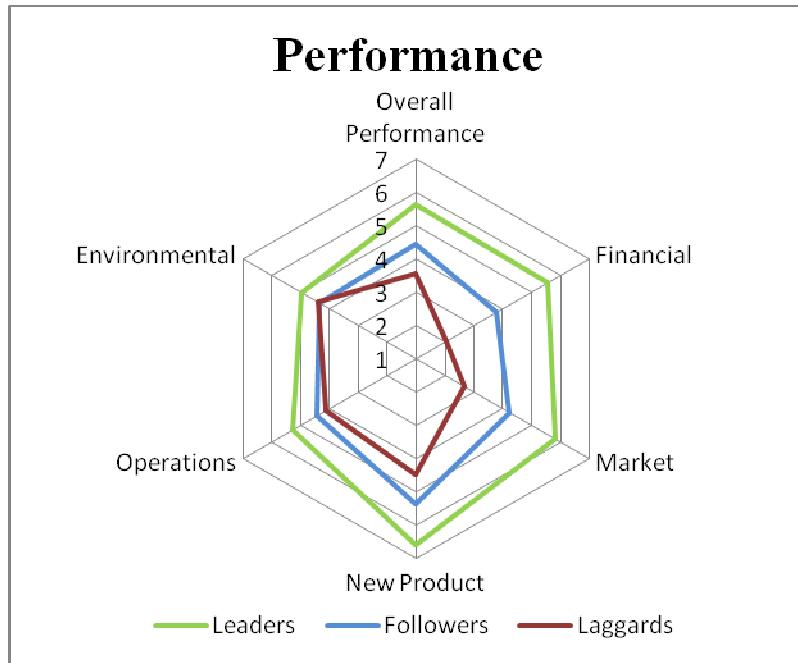


Figure 1. Performance dimensions

#### 4. Motivations, environmental conditions and organizational orientation

Our focus in the present research project was the investigation of sourcing practices to provide a benchmark of the current state-of-the-art. Before we proceed in the subsequent sections with the report of the findings pertaining to the individual practices, we thought it to be insightful to also present the motivations underlying these practices. Table 2 presents the means and standard deviations of the motivations noted by our respondents, starting with the most motivating aspects (the scale was anchored at "no motivation" (value=1) and "great motivation (value=5)). As such, sourcing practices were implemented primarily in order to achieve competitive advantage with a cost reduction strategy. Suppliers were thus relied on to improve this positioning, via the provision of competitively priced products and services. Sourcing practices were also implemented in response to changes in the market and the economic condition. This observation is consistent with reports in the practitioner press, which noted that the significance of purchasing to having only increased during the recession, due to its potential to still deliver competitive advantage. The third-most motivating factor was the seeking of competitive advantage via a growth strategy. Suppliers are thus not only seen as the providers of competitively priced products and services, but also as the enablers to capture new markets. As such, suppliers can be relied on to not only provide mere products and services, but also capabilities, expertise, and market insight. Overall least motivation was provided by targeted actions by activist groups, and industry pressure to get on board.



Table 2. Factors motivating purchasing practices

Motivations	Mean	Std. Dev.
Competitive Advantage		
Seeking of competitive advantage with a cost reduction strategy	4.20	.99
Seeking of competitive advantage with a growth strategy	3.96	1.07
Market Growth		
Anticipated increase in market share	3.72	1.10
Access to a larger market	3.64	1.09
Changes in the market / economic conditions	4.10	.90
Social Responsibility		
Desire to be a good corporate citizen	3.43	1.20
Social responsibility	3.34	1.24
Regulations		
Current government regulation	2.67	1.35
Threat of future government regulation	2.38	1.27
Voluntary certifications, such as CT-PAT	2.34	1.26
Targeted actions by activist groups	1.56	.91
Industry Pressure		
It was the "way to go"	2.24	1.16
Industry pressure "to get on board"	2.15	1.10

A comparable picture is provided in the spidergraph in Figure 2, in which we grouped the 13 individual motivations into five cohesive groups for parsimony: regulations, social responsibility, market growth, competitive advantage, and industry pressure. The achievement of a competitive advantage via sourcing practices was clearly the overriding motivation for all three groups. Interesting is the almost parity between leaders and followers on this dimension, as well as the significantly greater industry pressure present for the laggards compared to the followers. Regulations had virtually no influence on the pursuit of sourcing practices for all three groups. Overall, competitive advantage and market growth dominated the motivations driving the choice of sourcing practices to implement, followed by sourcing function's pursuit of social responsibility.

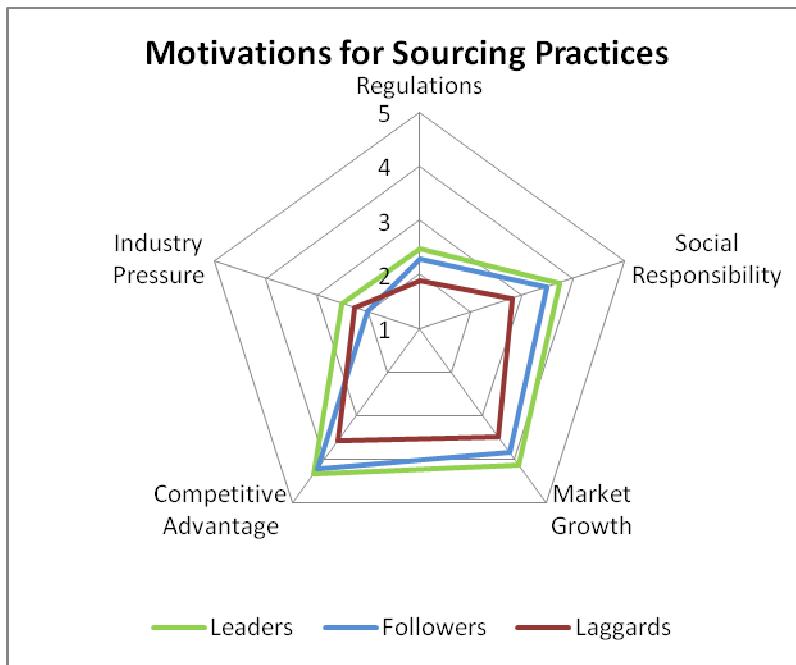


Figure 2. Motivations for sourcing practices

A special contingency that we were dealt with at the time the survey was conducted was the poor economic environment and recession, which we thought to also impacting significantly sourcing behavior. We therefore inquired in our survey about the company's overall economic environment, and how the recession was responded to. Results to these questions are reported in Table 3 and 4, respectively. Respondents were asked to indicate their degree of agreement with these statements on a scale ranging from "strongly disagree" (value=1) to "strongly agree" (value=5). Overall, looking at Table 3, one can observe that the dire economic environment has not taken too much of a toll among the firms that responded to our survey. As such, there was a slight agreement about the negative impact the economic environment has had, but overall, values hovered right above the midpoint of the scale, suggesting most respondents to be neutral in these regards.

Table 3. Characteristics of the firm's economic environment

Economic Environment	Mean	Std. Dev.
The economic recession has affected a number of firms in our industry	4.07	.912
Our industry is experiencing a significant decline in new job opportunities	3.67	.916
Our industry's sales have declined significantly	3.38	1.250
Obtaining new funding is a challenge in our industry in the current economic situation	3.30	1.003
Our industry is experiencing job losses	3.27	.642
It has been business as usual for our industry	2.06	.926

In terms of the company's response to the recession, a similar picture emerges. Specifically, firms in our sample felt fairly confident that their company will weather the current economic storm. In fact, respondents characterized themselves to be more proactive than their competing counterparts in the industry, and indeed suggested that the recession was providing certain opportunities from them to emerge stronger.

**Table 4. Company response in the recession**

Company's Response in Recession	Mean	Std. Dev.
Our company is well positioned to emerge successfully from the recession	3.86	.879
Our company is making the necessary investments to grow our business during the downturn	3.64	1.041
We responded more proactively than our competitors to market changes	3.53	.987
We view the downturn as an opportunity to leapfrog the competition	3.47	1.016
Our company treated the downturn more like an opportunity than a threat	3.35	1.101
Our plans extensively capitalize on the opportunities which arose due to the recession	3.26	1.055

We further assessed the overall supply base environment with three groups of questions describing the inherent uncertainty. The three groups referred to uncertainty present in the supply, the demand and the technological dimension. The individual items, their means and standard deviations are presented in Tables 5, 6 and 7, respectively. In general, supply uncertainty did not seem to be too great of a concern, as suppliers seem to be rather responsive. A different picture was provided on the demand side, which was much less able to be controlled effectively by the firms in our sample. And lastly, technological uncertainty did not seem to be of great concern either.

**Table 5. Supply uncertainty**

Supply Uncertainty	Mean	Std. Dev.
Suppliers produce materials with consistent quality	3.77	.709
Suppliers consistently meet our requirements	3.65	.724
We have extensive inspection of incoming critical materials from suppliers	3.12	1.029
We have a high rejection rate of incoming material from suppliers	2.13	.971

**Table 6. Demand uncertainty**

Demand Uncertainty	Mean	Std. Dev.
The volume and/or composition of demand is difficult to predict	3.58	.996
Our master production schedule has a high percentage of variation in demand	3.54	1.095
We keep several weeks of inventory of the critical material to meet the changing demand	3.30	1.045
Our demand fluctuates drastically from week to week	3.18	1.093
Our supply requirements vary drastically from week to week	3.05	1.018



Table 7. Technological uncertainty

Technological Uncertainty	Mean	Std. Dev.
If we don't keep up with the changes in technology, it will be difficult for us to remain competitive	3.46	1.131
Our industry is characterized by rapidly changing technology	2.94	1.120
The production technology changes frequently and sufficiently	2.65	1.078
The rate of process obsolescence is high in our industry	2.53	1.058

The preceding information is also cohesively presented in Figure 3, in the form of a spidergraph illustrating the levels of environmental conditions across our three performance groups. For each of the five dimensions, the average of the individual items was taken and plotted against the graph.

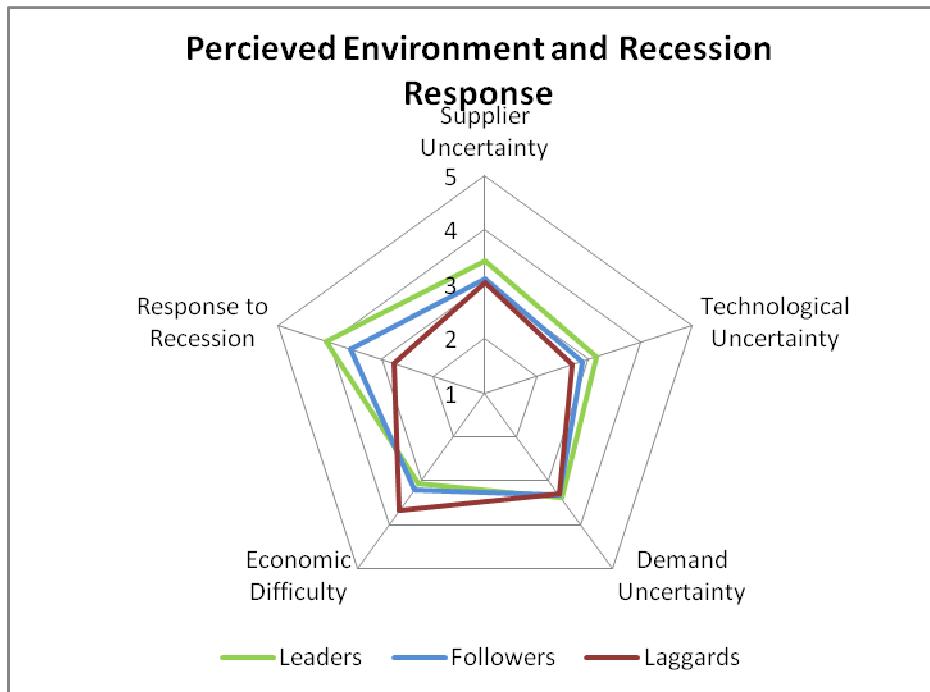


Figure 3. Environmental contingencies

As can be seen, most significant differences were present among the two groups of questions concerning the economic environment. As such, leaders are much more proactive in their response to the recession, and treat it more like an opportunity than a challenge. Followers still do the same, albeit to a lesser degree, but laggards do not seem to have the ability to take advantage of the recession; they appear to be more vulnerable. Similarly, economic difficulty influences most our laggard category, with the leaders experiencing the least impact. In terms of the three types of uncertainty, a fairly similar picture emerged across the two groups, with most differences present among supply uncertainty. Leaders seemed to be in a better position here as well. In contrast, for technological uncertainty and especially for demand uncertainty, values across the two groups were fairly equal, being

suggestive of these two uncertainty types exerting about equal influence on the firms overall.

Before we proceed with the report on the strategic sourcing practices, let us focus on the respondent's organizational orientation in terms of strategic purchasing, the suppliers' commitment to the buying firm, the firm's orientation towards suppliers, supplier relationships, and the firm's overall green engagement. Questionnaire items related to strategic purchasing, their means and standard deviations are presented in Table 8. Results are very promising, especially compared to a decade ago, where purchasing had not achieved its right place at the executive board room table yet. However, based on these responses, it seems that purchasing has become recognized as a key player and contributor to corporate success. Table 9 presents the individual items for the firm's orientation towards suppliers – a more relational and proactive approach is visible based on the means and standard deviations reported. A similar picture evolves when looking at the items in Table 10, which characterize the relationships to suppliers in general. This commitment is reciprocated, as seen in the values provided in Table 11, which describe the supplier's commitment to the responding firm.

**Table 8. Purchasing function and organizational strategy**

	Mean	Std. Dev.
The purchasing function has a good knowledge of the company's strategic goals	3.97	.843
The purchasing department plays an integrative role	3.88	.941
Purchasing is included in the company's strategic planning process	3.85	.919
Purchasing performance is measured in terms of its contributions to the company's success	3.81	.920
Purchasing professionals' development focuses on elements of the competitive strategy	3.53	.886
Purchasing focuses is on longer term issues that involve risk and uncertainty	3.43	.919
The purchasing function has a formally written long-range plan	2.83	1.142

**Table 9. Orientation towards suppliers**

	Mean	Std. Dev.
We expect our relationship with key suppliers to last for a long time	4.23	.614
We see our supplier relationships as long-term alliances	4.02	.805
We work with key suppliers to improve their quality in the long run	4.01	.755
We view our suppliers as an extension of our company	3.80	.944
The relationship we have with key suppliers is essentially evergreen	3.35	.962
We give a fair profit share to key suppliers	3.24	1.142



Table 10. Supplier relationships

	Mean	Std. Dev.
We are loyal to key suppliers	4.04	.684
We have frequent face-to-face communication with key suppliers	3.89	.887
There is high corporate-level communication on important issues with key suppliers	3.62	.971
We can influence first-tier supplier's responsiveness to purchasing requirements	3.57	.959
We enter into special agreements with suppliers who have improved their performance	3.33	.925
There are direct computer-to-computer links with key suppliers	2.76	1.156

Table 11. Supplier's commitment to your company

	Mean	Std. Dev.
Suppliers see our relationship as a long-term alliance	3.84	.852
Suppliers are willing to make long-term investments in helping us	3.76	.908
Suppliers have a strong sense of loyalty to us	3.66	.886
Suppliers are willing to dedicate whatever people and resources it takes to make us a satisfied customer	3.64	.948

These dimensions are also graphically depicted in Figure 4. Similar as above, the average of the individual questions was taken for each dimension, and plotted against the graph separate for each of the three performance groups. As can be seen, for most of the dimensions, leaders and followers seem to be on par, whereas laggards are far behind. This result implies that it pays to develop good relationships with suppliers, and almost blurs the differences between leaders and followers.



Figure 4. Organizational orientation

## 5. Sourcing practices

This section describes the results for the individual sourcing practices. Statistics are reported based on the overall sample, and again then split up by performance category (leaders, followers, laggards). The individual sourcing practices considered include global sourcing practices, green sourcing practices, joint green activities with suppliers, non-contractual risk management, contractual risk management, electronic co-ordination, supplier visibility, supplier involvement in new product development, sourcing analytics, and supplier development. Practices were presented to respondents in terms of statements, to which they were asked to indicate their degree of agreement on a scale ranging from "strongly disagree" (value=1) to "strongly agree" (value=5).

### 5.1 Global sourcing

Global sourcing involves integrating and coordinating common items, materials, processes, technologies, designs and suppliers across worldwide buying, design and operating locations. Global sourcing includes the global consolidation of sourcing requirements across the organization, and the use of sources which are geographically dispersed across the globe. This requires inter-country or inter-continental transit of the procured materials and services. Global sourcing for North American organizations typically involves sourcing from regions in Latin America, Africa, Mexico and Asia. This has also been referred to as off-shore sourcing or low cost country sourcing. While global sourcing has increased significantly over the last decade, especially recent years have seen sourcing from low cost countries as becoming an integral part of the global sourcing strategy of firms. However, most of the extant research on global sourcing continues to be conceptual or is based on case studies. Against this background, the current benchmarking study provides a first look at contemporary global sourcing practices.

The seven individual statements presented in Table 12 were provided to respondents. Table 12 provides their means and standard deviations across the entire sample. In general, firms are practicing global sourcing to some degree, although we expected to see a greater engagement on this dimension- the values received in Table 12 were not as high as expected. Global sourcing engagements are possibly rethought, due to the rising fuel and associated transportation costs, as well as the increased involved with sourcing from overseas.



Table 12. Global sourcing questions

Code	Question	Mean	Std. Dev.
GISr1	We only engage in domestic sourcing	2.25	1.309
GISr2	We engage in international sourcing on 'as needed' basis	3.23	1.288
GISr3	We engage in spot buying from international sources	2.36	1.079
GISr4	International sourcing is part of our sourcing strategy	3.58	1.275
GISr5	Our sourcing is integrated and coordinated across worldwide buying locations	2.87	1.380
GISr6	Our sourcing is integrated and coordinated with other internal functional groups	3.24	1.062
GISr7	Our company has a centralized global sourcing function	3.02	1.329

Figure 5 provides an interesting summary of global sourcing activities for the three performance groups. As such, leaders seem to differentiate themselves by their firm having a centralized global sourcing function, their sourcing being integrated and coordinated across worldwide buying locations, and their sourcing being integrated and coordinated with other internal functions. Surprisingly, laggards are engaged more heavily in global sourcing than the followers, most notably among the questions GISr6 and GISr7. Laggards fall behind however again on question GISr5. For the remaining questions, no discernable differences were detected among the three groups.

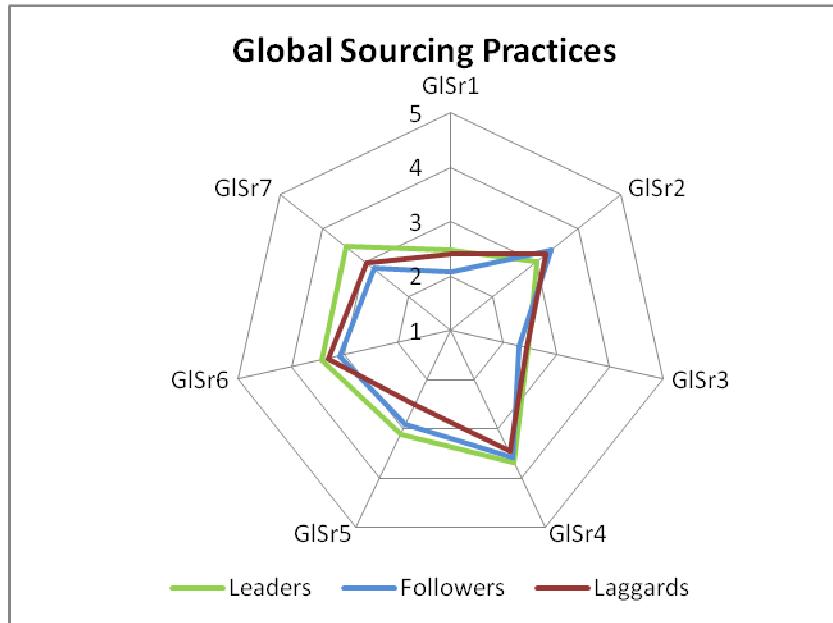


Figure 5. Global sourcing practices

## 5.2 Green sourcing

Green sourcing refers to supply management activities aimed at improving the environmental performance of purchased input or the suppliers that provide them. Green



and sustainable sourcing has demanded increasing attention from supply management executives in recent years, as also evidenced, to some degree, by our results. A summary of the ten green sourcing practices inquired is presented in Table 13. As can be seen, most means are below the midpoint of the five-point scale, suggesting that these activities are rather not practiced (respondents tended to disagree with them being done at present). Merely the last three activities received means above the midpoint, being suggestive that, on average, firms cooperate with suppliers for environmental objectives, firms administer company-wide environmental programs, and firms adapt corporate culture to environmental programs.

Table 13. Green sourcing practices

Code	Question	Mean	Std. Dev.
GrSr1	We administer environmental supplier questionnaires	2.62	1.084
GrSr2	We reward suppliers for environmental performance	2.45	.991
GrSr3	We rank suppliers based on their environmental performance	2.38	.962
GrSr4	We require suppliers to have an environmental management system	2.60	.999
GrSr5	We audit for suppliers' internal environmental management	2.49	.979
GrSr6	We require ISO14000 certification from suppliers	2.47	1.132
GrSr7	We evaluate environmental practices of second-tier suppliers	2.25	.911
GrSr8	We cooperate with suppliers for environmental objectives	3.14	.947
GrSr9	We administer company-wide environmental programs	3.29	1.118
GrSr10	We adapt corporate culture to environmental programs	3.34	1.075

Table 14 presents a summary of green activities that are jointly conducted with the buying firm's suppliers. Results here are more promising, due to all means being above the midpoint of the scale. Our results suggest that green activities are therefore especially being conducted in collaboration with suppliers. This is very encouraging.

Table 14. Joint green activities

Code	Question	Mean	Std. Dev.
JGA1	We develop a mutual understanding of responsibilities regarding environmental performance	3.85	.902
JGA2	We try to achieve environmental goals collectively	3.82	.846
JGA3	We work together to reduce environmental impact of our activities	3.55	1.030
JGA4	We conduct joint planning to anticipate and resolve environment-related problems	3.72	1.000
JGA5	We make joint decisions about ways to reduce overall environmental impact of our products	3.48	.961

Figures 6 and 7 provide a snapshot of a firm's green sourcing practices and joint green activities with suppliers differentiated across the three performance groups. Figure 6 suggests that leaders are doing much more in terms of green sourcing practices, compared to their other two counterparts. An interesting observation lies in the fact that both followers and laggards are either on par, or laggards outperform the followers in terms of the intensity with which green sourcing practices are conducted. Laggards surpass even leaders on the item GrSr2, which assessed the degree to which suppliers are rewarded for



environmental performance. Figure 7 plots the three performance groups against the joint green activities. While there is some differentiation, it is rather slight, as seen by the almost identical footprints of the three performance groups.

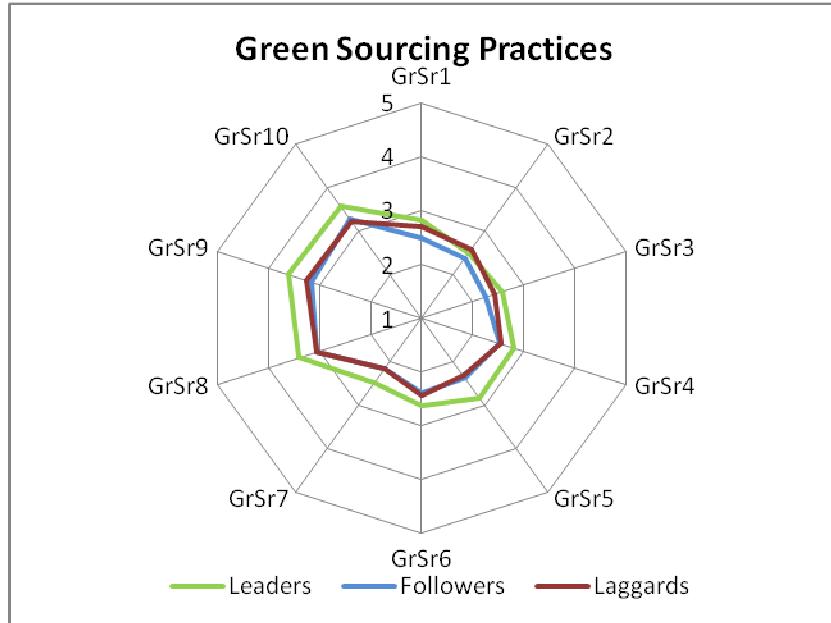


Figure 6. Green sourcing practices

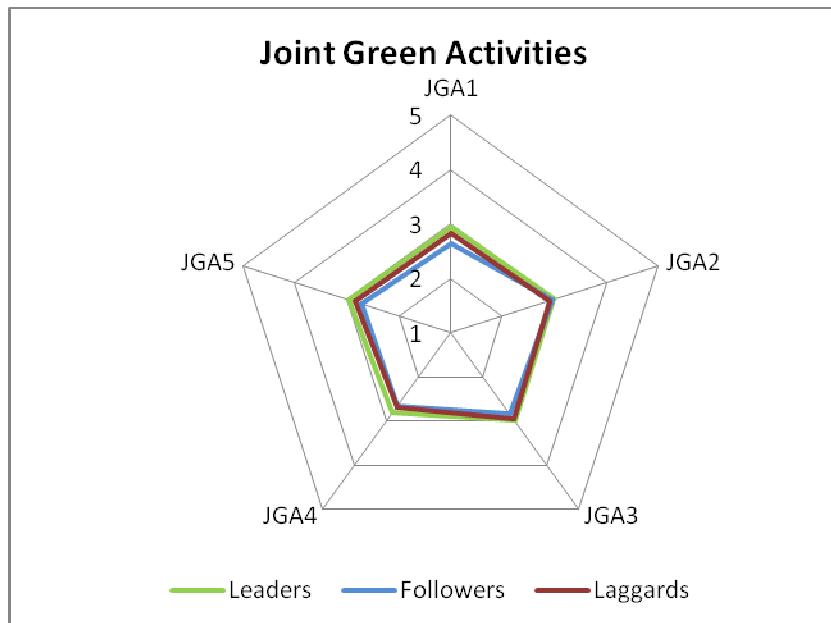


Figure 7. Joint green activities

### 5.3 Risk management

Sourcing risk management is defined as the mitigation and management of potential events associated with inbound supply that can have significant detrimental effects on the purchasing firm. Research in this area has been largely conceptual and anecdotal up to date. Examples of sourcing risk include market volatility, inability to measure performance, risk of incomplete specifications, risk of transportation delays, risks related to understanding local cultural and governmental practices, environmental risks, and political risks. One of the basic responsibilities of the sourcing function is to manage and mitigate any potential risks, which may be associated with procurement, to ensure a smooth flow of supply. Sourcing risk management represents a growing concern amongst practitioners, and its importance is heightened by the increasing trend in global sourcing.

In our project we differentiated between non-contractual risk management and contractual risk management. The former refers to practices for risk mitigation that are not related to the contract, and the latter refers to stipulations included in the contract to ensure against risk. Table 15 provides the means and standard deviations for the items assessing non-contractual risk management elements. While risk management is practiced via a variety of approaches, what stood out was that consultancies were rarely solicited in an attempt to assess sourcing security.

Table 15. Non-contractual risk management

Code	Question	Mean	Std. Dev.
RMA1	We identify strategic items and their interdependencies	3.78	.790
RMA2	We assess our vulnerability and identify our risk of supply disruption	3.90	.809
RMA3	We profile our supply base	3.69	.940
RMA4	We evaluate the implications of supply disruptions	3.88	.960
RMA5	We identify actions and create risk mitigation options	3.63	.984
RMA6	We regularly assess our sourcing security internally	3.42	.975
RMA7	We solicit the help of consultancies to assess our sourcing security	2.47	1.062
RMA8	We regularly assess supplier compliance internally	3.54	1.055
RMA9	We solicit the help of consultancies to assess supplier compliance	2.40	.997
RMA10	We purposefully only source from countries or regions where the sourcing security is not a concern	2.84	.928

Table 16 provides an overview of the contractual risk elements, i.e. the aspects that were included in the contract in order to assure the performance to certain requirements. Tariff risks, risks related to local government policy changes, political instability of governments, and exchange rate risks received averages below the midpoint, being suggestive that these risks are of lesser consideration in contractual arrangements for buyers. The scale used for these questions was different to the prior ones in that respondents were asked to indicate their extent to which their company emphasizes contractual arrangements to mitigate these risks. The scale ranged from "no extent" (value=1) to "great extent" (value=5).



Table 16. Contractual risk management

Code	Question	Mean	Std. Dev.
CRM1	Quality risks	3.95	1.103
CRM2	Tariff risks	2.74	1.283
CRM3	Risks related to local government policy changes	2.70	1.315
CRM4	Political instability of governments	2.47	1.206
CRM5	Supplier noncompliance risks	3.78	1.152
CRM6	Transportation risks	3.19	1.186
CRM7	Exchange rate risks	2.96	1.215
CRM8	Intellectual property protection risks	3.61	1.342
CRM9	Product damage risks	3.55	1.145
CRM10	Asset damage risks (e.g., tools, dies, and equipment given to suppliers)	3.14	1.255

This information broken down by performance category is provided in Figures 8 and 9. The overarching message derived from these graphs is that leaders are consistently more proactive in non-contractual risk management activities. For contractual risk management aspects, followers were often at the same levels as their leading counterparts. Laggards were significantly behind.

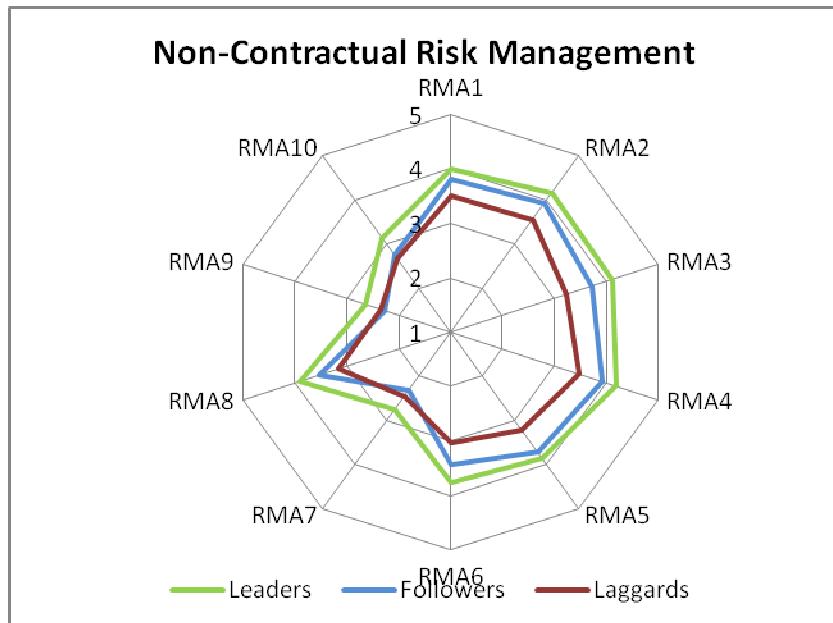


Figure 8. Non-contractual risk management

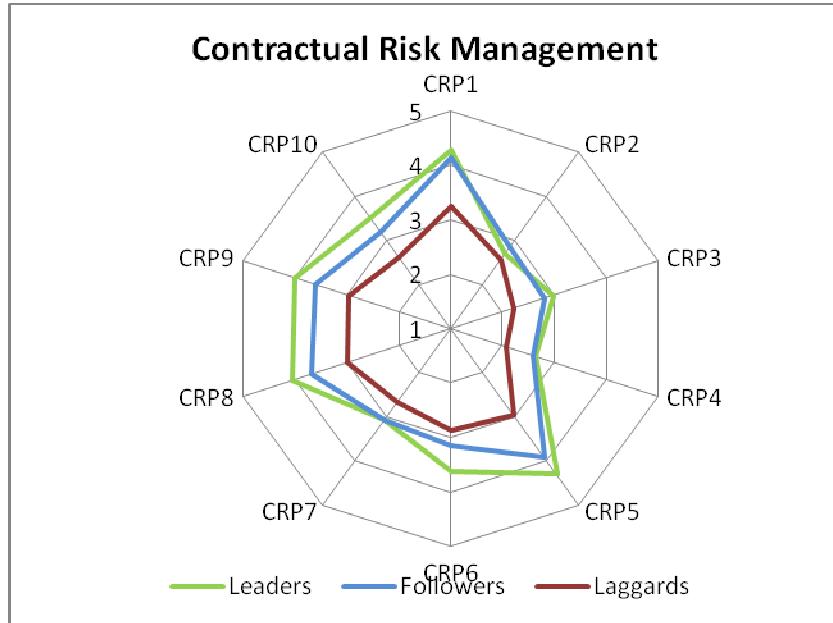


Figure 9. Contractual risk management

#### 5.4 Electronic coordination

We define electronic coordination as the use of information technologies (and electronic commerce) to facilitate business-to-business purchase transactions for materials and services to identify potential sources of supply, to purchase goods and services, to transfer payment, and to interact with suppliers. Business-to-business (B2B) transactions facilitated by electronic coordination include functionalities such as e-MRO, web-based ERP, e-sourcing, e-tendering, and e-reverse auctions. However, relatively few studies have formally developed and tested models for e-procurement.



Table 17. Electronic coordination

Code	Question	Mean	Std. Dev.
EC1	We electronically send suppliers regular updates about new product plans and other new developments (e.g., via e-mail)	3.00	1.173
EC2	We provide specific online information about product specifications that our suppliers must meet	3.14	1.643
EC3	We electronically share product and inventory planning information with our suppliers	3.29	1.126
EC4	We permit suppliers to directly link to our databases (e.g., via Enterprise Resource Planning/ERP systems)	2.34	1.169
EC5	We search and locate potential suppliers online	3.78	.943
EC6	We place and track orders with suppliers electronically (e.g., online order placement)	3.66	1.079
EC7	We allow suppliers to submit bids online	3.31	1.204
EC8	We use online marketplaces to source from suppliers	2.84	1.165
EC9	We regularly conduct online reverse auctions	1.99	.914
EC10	We regard online reverse auctions as a rather antagonistic tool	2.77	.874
EC11	We have realized benefits from online reverse auctions	2.40	.895
EC12	We exchange information with suppliers via a web portal	3.37	.602

As can be seen from Table 17, electronic coordination has quite proliferated – most firms are quite advanced on these dimensions. As expected, leaders practice these activities to a greater degree, however not consistently. Figure 10 presents the spideograph of the three performance groups across the twelve electronic coordination activities. Leaders permit suppliers to directly link to their databases, allow suppliers to submit bids online, and use online marketplaces to source from suppliers. Their following and lagging counterparts are practice these activities to a significantly lesser degree. Interestingly though, followers were more proactive in terms of electronically sending suppliers regular updates about new product plans and other new developments, and in terms of providing specific online information about product specifications that suppliers must meet.

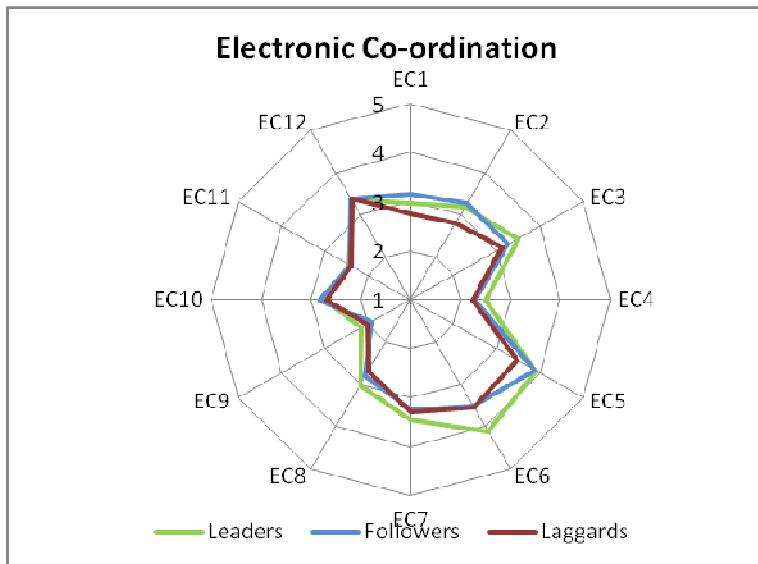


Figure 10. Electronic co-ordination

## 5.5 Supplier visibility

Supplier visibility is defined as the use of information technologies, such as the internet or intranet, to provide suppliers visibility into the organization's production plans. The aim is to facilitate co-ordination of planning and delivery between the organization and its vendors. While visibility has become a popular buzzword in the industry it still remains an ill-defined and poorly understood concept. It is important to clearly distinguish electronic coordination and visibility, given that both involve the use of information technologies. Electronic coordination involves the use of information technologies for the enablement of purchasing transactions, while visibility refers to the use of information technologies to allow access to information for facilitating planning and co-ordination activities between buyers and suppliers. For example, Cummins Corporation uses web-enabled applications to enable the suppliers' visibility into the organizations production plans. Another major automotive supplier is in the process of implementing a system which enables its logistics vendors to track global material movement, allowing for better coordination of resources for the shipment and delivery of automobiles. The distinguishing feature of such systems is that they enable visibility and tracking of information, while the actual transaction processing may not be internet-enabled.

Interesting results are provided in Table 18. As can be seen, except for the item SV 2 ("we electronically provide information to suppliers in regular and frequent intervals"), respondents tended to disagree with practicing these statements – the average was below the midpoint of the scale.

Table 18. Supplier visibility

Code	Question	Mean	Std. Dev.
SV1	We allow suppliers independent access to information on our internal systems (e.g., production plans)	2.23	1.005
SV2	We electronically provide information to our suppliers in regular and frequent intervals	3.51	.978
SV3	We provide portals for suppliers where they can independently see relevant and critical information (e.g., our order release schedule)	2.65	1.320
SV4	Our internal systems send automatic information updates to suppliers (e.g., changes in forecast volumes)	2.44	1.194
SV5	Our internal systems send automatic information alerts to suppliers (e.g., changes in production plans)	2.33	1.081

When examining the means differentiated by the three performance groups, some differences can be detected. While for most of the questions the answers across the three groups were about the same, leaders were much more proactive in terms of the provision of portals for suppliers, where they can independently see relevant and critical information, such as order release schedules (SV3). Interestingly, followers were more proactive for question SV2, which assess the extent to which information is provided to suppliers electronically in regular intervals.

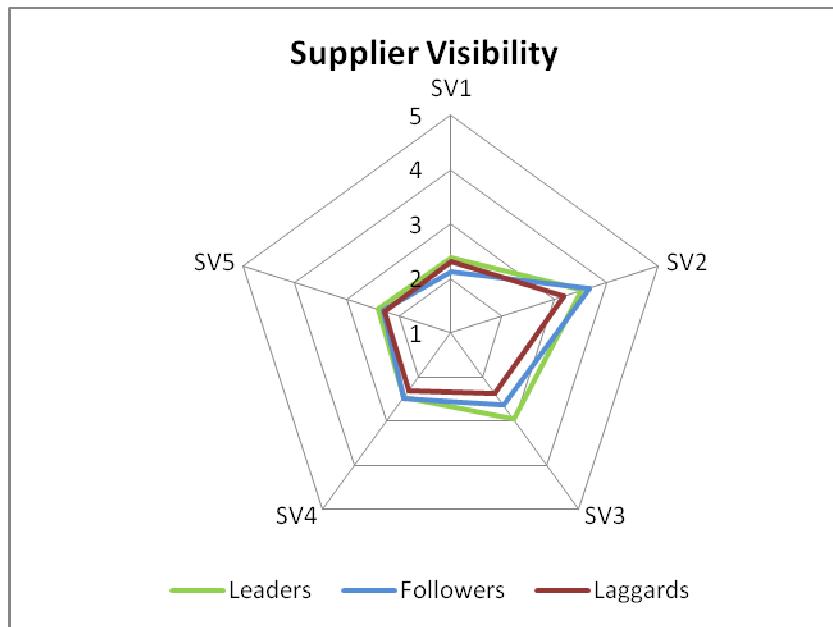


Figure 11. Supplier visibility

## 5.6 Supplier involvement in new product development

Supplier involvement in new product development (NPD) refers to the active engagement of suppliers in the development of new products. Literature in this area is rich, and indicates that suppliers can help firms experience shorter development times, reduce cost, improve product quality, and attain development flexibility. To provide a more current view of supplier involvement in NPD, we included this dimension in our survey.

Table 19 offers an overview of the individual question items, their means and standard deviations. Overall, suppliers are involved in new product development activities of the firm, as indicated by values above the midpoint of the scale. Respondents rather disagreed with statements concerning the involvement of key supplier in business and strategic planning (SINPD5).

Table 19. Supplier involvement in new product development

Code	Question	Mean	Std. Dev.
SINPD1	We involve key suppliers in the product design and development stage	3.73	.966
SINPD2	We have key supplier membership/participation in our project teams	3.28	1.082
SINPD3	Our key suppliers have major influence on the design of new products	3.13	1.061
SINPD4	There is a strong consensus in our company that supplier involvement is needed in product design/development	3.27	1.100
SINPD5	We involve our key suppliers in business and strategy planning	2.65	.961
SINPD6	We have joint planning committees/task forces on key issues with key suppliers	2.99	1.100

A more fine-grained picture is provided in the spidergraph in Figure 12. An interesting finding includes the fact that followers are oftentimes on par with their leading counterparts. Also, laggards agreed to a greater degree with the statement that their suppliers have major influence on the design of new products (SINPD3), compared to the leaders. Followers agreed to an even greater extent. In contrast, leaders involved suppliers to a greater extent in business and strategy planning.

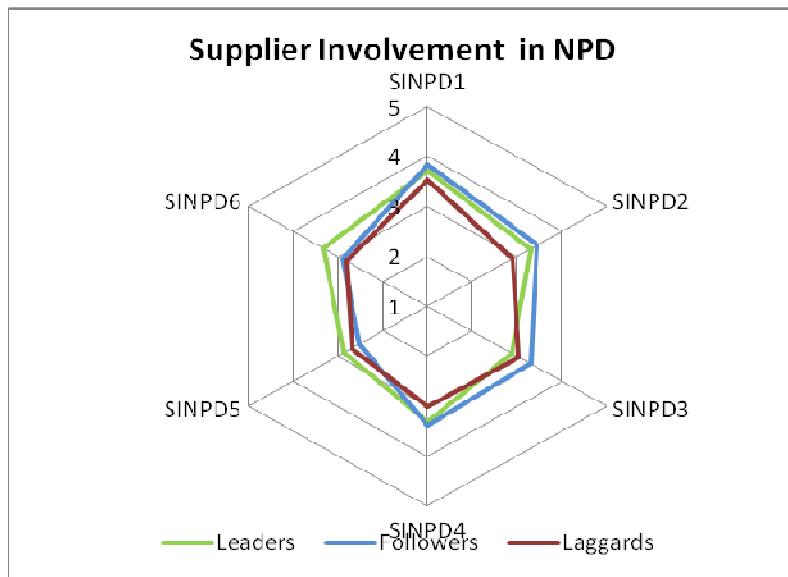


Figure 12. Supplier involvement in NPD

## 5.7 Sourcing analytics

Sourcing analytics is defined as the use of analysis tools, such as spend analysis, purchase price variance analysis, transportation optimization, order quantity optimization, and total landed cost analysis for purchasing decisions. While organizations routinely use analytical tools to make sourcing decisions, large scale systematic investigation of the use of sourcing analytics is lacking in the current literature. Over the last decade, the increased sophistication of internet-enabled enterprise systems has allowed purchasing managers and executives to sophisticatedly analyze sourcing data, without the need for in-depth involvement with or knowledge of the analysis itself. Sourcing analytics are often performed using homegrown spreadsheet applications, manually, or using tools provided by ERP and e-sourcing applications. For example, Ariba spend management solutions have made it easier for organizations to consolidate and analyze their spend. Organizations, such as BMW, CVS pharmacy and Saks Inc., use Ariba spend management solution to analyze their sourcing spend. Through the use of enterprise sourcing solutions provided by i2 Technologies (now JDA Inc.), organizations, such as General Motors, use data analysis and optimization tools to drive sourcing decisions, by for example evaluating the total landed cost for products sourced globally. While the sourcing functions at a number of organizations have increased the use of analytics, primarily enabled through the ease of analysis provided by enterprise software, large scale academic inquiry in the area is still



lacking. With our results we thus provide some much needed insight into this evolving area.

Table 20 summarizes the sourcing analytics tools that were included in our study. Across the board, all of these tools and techniques are utilized by our respondents, except for activity based costing. Looking at the use of sourcing analysis tools across the three performance groups, one can observe from Figure 13 that leaders almost consistently utilize these tools to a greater extent than the two lower-performing counterparts. Laggards were fairly far behind, except for the use of should-cost analysis (SA8), where they were about on par with the other two groups.

Table 20. Sourcing analytics

Code	Question	Mean	Std. Dev.
SA1	ABC analysis/Pareto analysis	3.25	1.231
SA2	Spend analysis	3.72	1.089
SA3	Purchase price variance analysis	3.89	1.098
SA4	Transportation optimization	3.39	1.207
SA5	Order quantity optimization	3.46	1.067
SA6	Total landed cost analysis / Total cost of ownership	3.47	1.256
SA7	Activity based costing	2.66	1.277
SA8	Should-cost analysis	3.05	.579

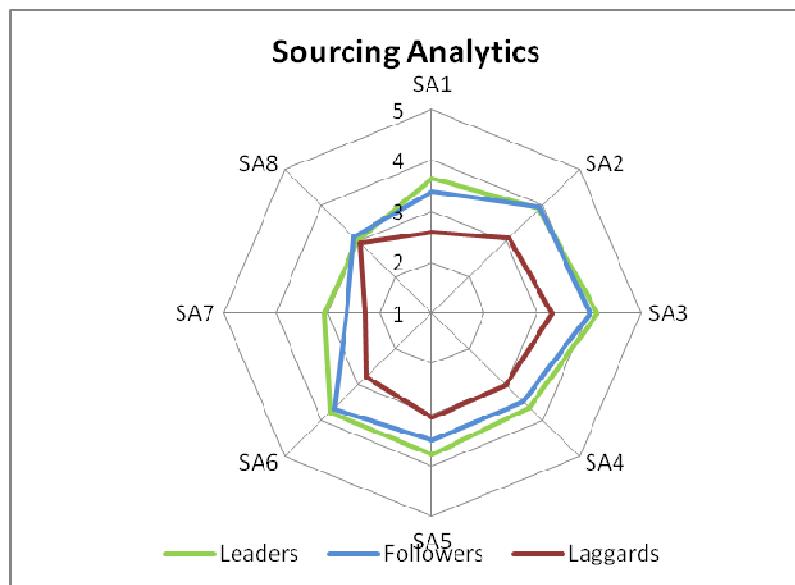


Figure 13. Sourcing analytics

## 5.8 Supplier development

Supplier development is defined as activities undertaken by a buying firm to improve either supplier performance, supplier capabilities, or both, and to meet the buying firm's short- and long-term supply needs. These activities have been classified under the broad categories of (a) competitive pressure (b) evaluation and certification (c) supplier incentives, and (d) direct involvement or operational knowledge transfer with suppliers. The literature base on supplier development is fairly well developed and consists of conceptual advancements, focused case studies, and surveys. Seven question items were included in our survey project, which assessed the degree of supplier development practiced by our respondents. Means and standard deviations of these items are presented in Table 21.

Table 21. Supplier development

Code	Question	Mean	Std. Dev.
SD1	We assess supplier's performance through formal evaluation, using established guidelines and procedures	3.78	1.068
SD2	We use of a supplier certification program to certify supplier's quality, thus making incoming inspection unnecessary	3.43	1.224
SD3	We conduct supplier site visits to help improve their performance	3.78	1.470
SD4	We invite supplier's personnel to increase their awareness of how their product is used	3.66	1.035
SD5	We recognize supplier's achievements or performance in the form of awards	2.78	1.250
SD6	We provide training/education for the supplier's personnel	2.80	1.175
SD7	We develop partnerships with certified suppliers	3.53	1.119

Results are very encouraging, and suggest that buyers actively pursue the improvement of their suppliers with certain activities. Strongest emphasis received the formal assessment and evaluation of suppliers via established guidelines and procedures (SD1). The picture for the three performance groups is also clear: leaders and followers consistently practice these supplier development activities to a greater degree than their lagging counterparts. In some instances, followers even surpass the leaders. This is graphically presented in Figure 14.

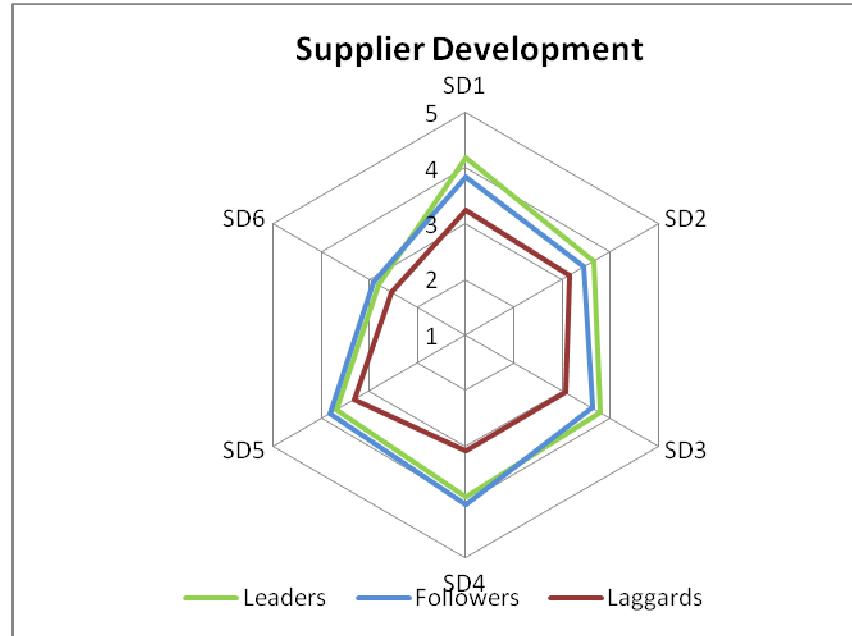


Figure 14. Supplier development

### 5.9 Summary of sourcing practices

In a last analysis step we examined, in an integrative fashion, all sourcing practices and how they are performed by the three performance groups. The results are presented in Figure 15. The three performance groups most significantly differed in their practice of non-contractual and contractual risk management aspects, as well as in the practice of sourcing analytic tools and supplier development activities. For most of the remaining practices, the three performance groups did not appear to differ too significantly.

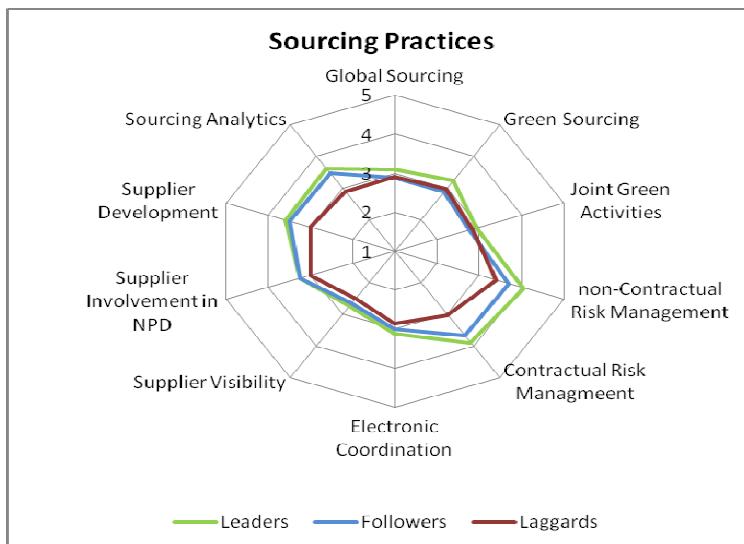


Figure 15. Summary of all sourcing practices



## 6. Conclusion

As organizations strive to develop sustainable sourcing strategies, a thorough understanding of the motivations driving sourcing decisions, an organization's orientation towards purchasing, the contextual environment in which a firm exists and the state of industry practices is critical. The benchmarking study reported in this executive summary was aimed at generating deeper understanding of these dimensions. We furthermore aimed to provide detailed insight into current industry practices, and to identify those that are typical of leading firms in the industry. We hope that this report will provide you with insight about the state of industry practice, and thank you for your support in conducting this benchmarking study.