

# Global sourcing's impact on sustainability: Vile or virtue?

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## **Abstract**

Firms sourcing globally have been accused of committing, supporting or just turning a blind eye to a number environmental and social problem. Based on an international survey of 680 firms' purchasing departments, this paper provides empirical evidence on global sourcing's actual contribution to social and environmental sustainability. The findings show that the level of sustainability is not directly dependent on global purchasing, but firms purchasing globally are better at making use of their purchasing proficiency and are better at fulfilling their sustainability goals.

**Keywords:** Global purchasing, sustainability, survey

## **Introduction**

Global sourcing and offshoring are established strategic means for lowering costs and improving competitiveness (Maltz et al, 2011). However, firms purchasing globally have also for long been accused of committing, supporting or just turning a blind eye to a number of environmental and social concerns, such as disregard for environmental regulation, working conditions and corruption (Seuring and Muller, 2008). However, large companies such as H&M, Puma and Pfizer (Vurro et al, 2009) have started to take social and environmental issues more seriously, not least due to consumer pressure. In the literature the number of articles concerned supply chain management and environmental and social sustainability, as well as Corporate Social Responsibility, CSR have virtually exploded (Hassini et al, 2012). This reflects the increasingly common perception that “the company is no more sustainable than its supply chain” (Krause et al, 2009). One question is, however, to what extent CSR practices has been implemented on a broad scale, and what the impact has been? The literature still lacks conclusive, empirical and general knowledge on whether firms purchasing globally are scoring better on social and environmental performance indicators as compared to firms purchasing locally or regionally. Instead, most literature within the field tends to be conceptual or only based

on small number of case companies (e.g., Pagell and We, 2009; Carter and Roger, 2008). The overall question the paper is going to answer is thereby: Is global purchasing vile or a virtue?

Based on an international large-scale survey covering 680 companies, this paper seeks to address the shortcomings of the present literature within the field of purchasing, by exploring three related issues. First, the paper will explore whether firms purchasing globally are scoring better or worse on social and environmental performance indicators. There are indications in previous studies that social and environmental sustainability has become a basic order-qualifying requirement in many industries (Seuring and Muller, 2008). But, is this really true for all firms and industries that are driven by low-cost sourcing? Are there any differences between local and global sourcing in this respect? This leads us to the first research question.

*RQ1: Is there any significant difference between companies purchasing globally and companies purchasing locally or regional in terms of sustainability performance?*

Second, the paper will explore whether the proficiency of the purchasing department will positively influence these indicators, and if there is a difference between firms that are purchasing globally, regionally or locally. The implementation of the purchasing priorities and strategies are in the end dependent on the execution and proficiency of the purchasing department (Paulraj, 2001; Narasimhan and Das, 2001). Purchasing proficiency is thereby likely to be strongly related to sustainability performance, but whether the correlation is stronger for firms purchasing globally compared to firms purchasing locally or regionally is an open question. The second research question is thus:

*RQ2: Does global purchasing give companies broader options and better possibilities to use purchasing department's proficiency for selecting, developing and utilising suppliers?* If this is the case, we would expect to see a stronger correlation between purchasing proficiency and sustainability performance for firms pursuing global purchasing compared to firms purchasing locally or regionally.

Third, Firms have different competitive strategies, which are, or should be, reflected in the objectives of the purchasing department (Gonzales-Benito, 2007). The third issue this paper is addressing is therefore to what extent the social and environmental objectives of the purchasing department is reflected in the performance of the department, and does it differ between firms pursuing different purchasing strategies? The third research question is:

*RQ 3: Does global purchasing give companies a better capacity to realise the goals of sustainability?* The argument rests on the same logic as RQ2, companies with more options for realising the goals are also more likely to realise them. For example, there may be no local suppliers that conform to the social and environmental requirements of the firm; only firm purchasing regionally or globally can utilise the suppliers with highest social and environmental performance.

## **Conceptual framework**

### *Sustainability*

Sustainability has become an important paradigm in supply chain management (Seuring and Muller, 2008) in global contexts (Cramer, 2008). Some authors, such as Pagall et al (2010) does even claim that the inclusion of sustainability in supply chain management

presents the greatest shift in thinking since Kraljic (1983). One of the most important aspect of supply chain management is purchasing, and it has indeed been recognised that supply chain managers occupies a unique position in terms of the ability to improve sustainability (Carter and Rogers, 2008). As a reflection of Kraljic (1983), Krause et al (2009) put forward that “purchasing must become sustainable supply management”.

Sustainability is usually associated with the triple bottom line argument (Carter and Rogers, 2008); meaning that in order for companies to be truly sustainable they need to, at the very least, avoid impacting negatively on social and environmental aspects while being profitable in the long term. This paper will analyse global sourcing’s impact on social- and environmental compliance by the firms’ suppliers, as the cost impact has already been thoroughly researched (see e.g., Maltz et al, 2011)

Although there may be costs associated with requiring social- and environmental compliance from suppliers, there are also potential financial benefits such as cost savings from reduced waste in packing, increased motivation from employees, more efficiency due to better structured work (For full review, see Carter and Rogers, 2008).

### *Global Purchasing*

Much of the purchasing literature derives from Kraljic (1983) seminal work on how and when companies should select, leverage and form partnerships with suppliers. The model has been widely adopted and empirically tested, but may be in need of an update (Pagell et al, 2010). According to Pagell et al (2010), the model is useful when making decisions based on economic parameters, but less useful when companies need to deal with the triple bottom line.

When the environment becomes more competitive, purchasing becomes more global, since it allows the firm to make use of the comparative advantage of countries (Kotabe and Murray, 2004). Therefore we would expect that firms purchasing globally to be more cost effective compared to firms purchasing locally or regionally. However, the argument of Kotabe and Murray (2004), does however only concern economic factors and the impact on social and environmental impact is more ambiguous. Certainly, popular literature would have us believe that firms improve their competitiveness by exploiting less rigid environmental and social regulation in third world countries, but conclusive empirical evidence is still missing.

Much of the supply chain management literature emphasises the value of creating long-term relationships with suppliers (Stock et al, 2010), although Kraljic (1983) and others underline that only strategic suppliers should be treated as partners. In the context of enforcing sustainable practices, strategic partnerships seem preferable. Cramer (2008) for instance suggested a step-by-step process to secure the transition towards sustainability which differentiates suppliers and products of various strategic importance. Pagell et al (2010) reported that a number of companies are deviating from Kraljic model and forming partnerships with suppliers that are not traditionally seen as strategic, with the purpose of being more socially and environmentally more sustainable, and despite the higher economic cost of doing so. Many scholars (e.g, xxx) and empirical studies (xxx) have shown that close relationships are easier to form when the cultural and geographical distance is short. It could thereby be expected that companies that source more locally are in a better position to form partnerships and thus improve sustainability.

### *Purchasing Proficiency*

Paulraj (2011) states that strategic purchasing capabilities are fundamental in pursuing sustainable supply chain practices. This implies that any investigation into the impact of global purchasing on the triple bottom line needs to take into account the proficiency of the purchasing departments. With purchasing proficiency we refer to purchasing skills in key purchasing processes such as supply market analysis, supplier selection and evaluation, supplier development and new product development (in line with Carr and Smeltzer, 2000; Narasimhan and Das, 2001; Cousins et al., 2006; Millson, 2002).

Millson (2002), concluded that the greater proficiency of processes, the greater the market success. Narasimhan and Das (2001) stressed the strategic importance of purchasing and specifically showed that purchasing proficiency and practices, in terms of buyer-supplier relationship development, supply base leveraging and supplier performance evaluation, had a clear impact on manufacturing firm performance. Cousins et al. (2006) developed a typology of purchasing roles, featuring differences in strategic involvement, status, internal integration and skills of the purchasing function. Based on British data they showed that the roles of purchasing were related to supplier involvement and firm performance.

Purchasing is a complex activity, and global purchasing is certainly more complex than regional or local purchasing. Moreover, adding social and environmental parameters to the traditional economic ones can only increase the complexity. In order to handle the complexity a higher proficiency of the purchasing is required and it is expected that higher proficiency would translate into better performance.

The key issue when selecting suppliers is reducing risk (Kraljic, 1983; Pagell et al, 2010), and traditionally that have meant economic risk. However, when purchasing is evaluated based on the triple bottom line, purchasing proficiency is no longer limited to minimising costs and risks. Evaluating and developing suppliers, as well as enforcing suppliers compliance with social and environmental standards becomes an important part of purchasing proficiency. These issues become more challenging if suppliers are geographically and culturally distant from the focal firm. Thus purchasing proficiency is likely to have a larger impact on the triple bottom line for companies that are purchasing globally compared to firms that are purchasing locally.

### *Purchasing competitive priorities*

Hayes and Wheelwright (1984) introduced the term competitive priority into manufacturing strategy literature as a way of defining the most important criteria for the manufacturing function, and the four cited competitive priorities were quality, cost delivery and flexibility. Krause (2001) translated these for the purchasing department and added a fifth, innovation. In a later article, Krause et al (2009) propose that sustainability should be added to list of potential competitive priorities for the purchasing department. They also acknowledge that it is a challenge since the other five can be observed in the characteristics of the product or in measure by how it was delivered. Sustainability can be monitored, but not upon delivery of the product.

Literature on competitive priorities often acknowledges that there is an inherent trade-off between the criteria: It is not possible to improve both at the same time. In the supply chain management literature the trade-off has been between flexibility/responsiveness and cost efficiency (e.g., Christopher et al, 2006). There may also be some trade-off

between sustainable practices, where e.g., Pagell et al (2010) report that several companies adopt sustainable practices that conflict with their cost performance. On the other hand, Carter and Rogers (2008) reviews a number of papers where sustainability and reduces costs were improved simultaneously.

### **Methodology and constructs**

The study is based on an online survey covering 681 firms in Europe and North America, mainly with more than 50 employees. The sample is cross-sectional, but the main sector represented is manufacturing. The overall response rate was 10%. A specific equivalence test has shown that the collected data can be pooled (Knoppen et al.,2011). The median size of the firms is 380 FTE (full time equivalents), but due to a few huge firms the mean is over 6000 FTE. Spending on purchased goods and services correspond to about half of the firms' sales value (mean 49% and standard deviation 0.19). The questionnaire included questions on firms purchasing strategy, practices and performance and was mainly answered by senior purchasing managers or corresponding. The survey covers both firm and category level. 6-points and 7-points Likert scales were used. The data is analyzed by factor analysis and regression analysis using SPSS software.

#### *Constructs on category level*

The key variables in the study are global purchasing, purchasing proficiency, competitive priorities and performance outcomes. All the constructs used in this analysis were measured on a category level, i.e., for a specific group of purchased items. The respondents were asked to select a group of purchased items that are similar in terms of technical content, suppliers or purchasing tools and techniques applied. By capturing priorities and purchasing practices on category level the link to purchasing performance becomes more precise than is measured on firm level.

#### *Global purchasing*

The extent of global purchasing was measured by asking from which of 13 predefined geographical areas the firm buys more than 10% of a selected category of goods and services. The areas or regions were: Home country, Eastern Europe (incl. Turkey and the Baltic states), Western Europe, North America, South America, Japan/South Korea/Taiwan, Australia/New Zealand, Russia and other CIS countries, India/Pakistan/Bangladesh, China (incl. Hong Kong and Macau), South East Asia (incl. Philippines, Indonesia), Middle East and Rest of the world. The threshold of 10% was selected to disregard singular contracts and focus major sourcing patterns that reflect priorities and performance outcomes. Based on this we could define three groups of the 681 firms (2 missing answers):

- The locally based purchasing group. This group of firms does only buy the selected category from supplier located in the home country. 157 firms belong to this group.
- The regional purchasing group consists of firms that buy at least 10% of the selected category from a region located near the home country, but nothing from more distant regions. 225 firms belong to this group. For the major part of this groups Western Europe is the closest region.

- The global purchasing group is firms that source at least 10% of the selected category from a region located outside its nearest regions. 297 firms belong to this group. Noticeable is that 59% of these firms buy from China.

*Table 1. Three purchasing groups*

	<b>Home-based purchasing</b>	<b>Regional purchasing</b>	<b>Global purchasing</b>	<b>Total</b>
Home country	100%	68%	74%	78%
Eastern Europe (incl. Turkey and the Baltic states)		24%	23%	18%
Western Europe		73%	62%	51%
North America		15%	45%	25%
Latin America			11%	5%
Japan, South Korea, Taiwan			21%	9%
Australia and New Zealand			2%	1%
Russia and other CIS countries			5%	2%
India, Pakistan, Bangladesh			15%	7%
China (incl. Hong Kong, Macau)			59%	26%
South East Asia (incl. Philippines, Indonesia)			9%	4%
Middle East			6%	3%
Rest of the world			7%	3%
<b>Total (n=)</b>	<b>157</b>	<b>225</b>	<b>297</b>	<b>679</b>

*Purchasing competitive priorities*

The four main competitive priorities have traditionally been identified as cost, quality, delivery and flexibility (e.g., Hayes and Wheelwright, 1984). Social and environmental sustainability has later been identified as a competitive priority by authors such as Krause (2009), de Burgos Jinemez and Lorente (2001), Hart (1995), Bansal (2005) and Sharma (2005). In this paper, only the importance of environmental and social sustainability as a competitive priority will be considered. These two are measured on a 6-point Likert scale, where the respondents were asked to indicate how important or unimportant each of them is to their main customer market today. Environmental sustainability was operationalised as “ability to offer products/services with less impact on the environment”, and social sustainability as “ability to offer products/services which comply with social norms on safety, child labour, bonded labour, etc”. A confirmatory factor analysis (principal component) was conducted, and both items load onto the same factor with factor loadings of .917, and Cronbach alpha is .81. The high converge of the two items suggests that environmental and social sustainability are emphasised by firms simultaneously. The factor will in the subsequent analysis be referred to as “importance of sustainability”.

*Table 2: Purchasing competitive priorities*

	Mean	Std. Dev.
Ability to offer products/services with less impact on the environment	4.03	1.350
Ability to offer products/services which comply with social norms on safety, child labour, bonded labour etc.	4.22	1.435
Valid N (listwise)		

### *Purchasing proficiency*

The construct on purchasing proficiency is based on ten purchasing and supplier management processes following the studies on purchasing roles and skills made by Carr and Smeltzer (2000), Cousins et al. (2006), Narasimhan and Das (2001) and Millson (2002). The studies by Narasimhan and Das (2000) and Cousins et al. (2006) specifically motivate the importance of measuring proficiency in supplier selection, evaluation and development. The question posed asked for the level of proficiency in these processes, using a six-point scale ranging from extremely low to extremely high to rate the level of quality in executing each process. The confirmatory factor analysis gave one factor, as expected. The factor loading for the items were between .638 and .778, and Cronbach alpha was .90, implying a high degree of convergence. The 10 critical processes, and the mean and standard deviations are displayed in the Table 3.

*Table 3: Purchasing proficiency*

	Mean	Std. Deviation
Supply market analysis	4.25	.945
Spend analysis	4.46	.918
Sourcing strategy	4.44	.905
Specs definition	4.36	.941
Supplier selection and contracting	4.60	.785
Supplier development	4.11	.983
Management of the order cycle	4.28	.975
Supplier involvement into NPD	3.87	1.079
Supplier integration in order fulfilment	3.94	1.031
Supplier evaluation	4.28	.915

*Table 4: Performance*

	N	Min	Max	Mean	Std. Dev.
The level of environmental compliance from suppliers	631	1	7	4.05	.821
The level of social compliance from suppliers	628	1	7	4.04	.822

### *Performance*

The IPS survey contained 12 items for the performance of the purchasing department for the selected category, this paper uses only three that are associated with the triple bottom line: The cost of managing the purchasing process, the level of environmental compliance from suppliers and the level of social compliance from suppliers. The 3 selected indicators are based on Monczka et al (2005), Van Weele (2010) and Burt et al (2003). The respondent was asked to consider current category performance – compared to management targets – for the performance indicators, on 7-point Likert scale (from much worse than target to much better than target). Table 4 shows mean, and standard deviation for the three performance indicators.

### **Findings**

The first research was:

RQ1: Is there any significant difference between companies purchasing globally and companies purchasing locally or regional in terms of sustainability performance?

The research question was answered by comparing the mean score for the three groups and analysing whether there are any significant differences (ANOVA). Table 5 shows that there are no significant differences between the groups.

*Table 5: Global purchasing and sustainability performance*

		The level of environmental compliance from suppliers	The level of social compliance from suppliers
Local sourcing	Mean	4.03	4.10
	Std. Dev.	.737	.764
Near-sourcing	Mean	4.06	4.03
	Std. Dev.	.830	.778
Global sourcing	Mean	4.07	4.02
	Std. Dev.	.861	.888
Total	Mean	4.05	4.04
	Std. Dev.	.822	.824

*Table 6: Purchasing proficiency, importance of sustainability and social sustainability*

<b>Dependent: Social compliance by suppliers</b>	<b>Home sourcing</b>	<b>Regional sourcing</b>	<b>Global sourcing</b>
Size (turnover)	0.02	0.05	0.05
Importance of sustainability	0.05	0.06	0.20**
Purchasing proficiency	0.06	0.13	0.24**
R <sup>2</sup>	0.07	0.03	0.13
Adjusted R <sup>2</sup>	-0.02	0.01	0.12
F value	0.291	1.881	11.981**
N	157	225	297

(The table displays standardised beta values, \*\*p<.01, \*p<.05)

*Table 7: Purchasing proficiency, importance of sustainability and environmental sustainability*

<b>Dependent: Environmental Compliance by suppliers</b>	<b>Home sourcing</b>	<b>Regional sourcing</b>	<b>Global sourcing</b>
Size (turnover)	-0.04	0.06	0.03
Importance of sustainability	0.07	0.07	0.31**
Purchasing proficiency	0.163	0.09	0.15*
R <sup>2</sup>	0.04	0.02	0.14
Adjusted R <sup>2</sup>	0.01	0.00	0.13
F value	1.468	1.259	13.502**
N	157	225	297

(The table displays standardised beta values, \*\*p<.01, \*p<.05)

The second and third research questions were:

RQ2: Does global purchasing give companies broader options and better possibilities to use purchasing department's proficiency for selecting, developing and utilising suppliers?

RQ 3: Does global purchasing give companies a better capacity to realise the goals of sustainability?

Research questions 2 and 3 were answered using regression analysis, and the results are displayed in table 6 and 7. The results to both research question 2 and 3 are clearly affirmative.

## **Discussion**

The first question was concerned with overall sustainability performance of firm pursuing local, regional and global purchasing. Sustainability was operationalised as the degree of environmental compliance by suppliers as well as the degree of social compliance by suppliers, in relation management targets. The results showed that there are no significant differences between the groups, which mean that all companies meet the targets for social and environmental compliance to the same extent irrespective of where they purchase their components. This showed that other factors are more important than the location of the suppliers. Since companies implementing rigorous CSR programmes are generally large (Vurro et al, 2009), we would expect firm size to be an important factor in explaining sustainability performance. However, the regression analyses in tables 6 and 7 shows no impact of firm size at all. Two other factors with the potential for explaining sustainability performance, purchasing proficiency and the actual goals of the purchasing department, are dealt with in research questions two and three.

The second research question was concerned with whether the relationship between purchasing proficiency and performance is stronger for firms purchasing globally compared to firms purchasing locally or regionally. The rationale for idea is that global purchasing gives the purchasing managers more opportunities for using their proficiency, since their playing field becomes larger. The answer to the second research question was strongly affirmative. For companies that are purchasing globally, purchasing proficiency is strongly associated with social compliance by suppliers and also associated with environmental compliance by suppliers. For companies purchasing locally or regionally there is no such association. One explanation for the results is that it is more difficult to evaluate and develop supplier as well as enforcing supplier compliance when the supplier is located far away, geographically and culturally. Thus higher proficiency will have a larger impact when purchasing globally. Another possible explanation for the results is that global purchasing allows companies to exploit the comparative advantages of different countries (Kotabe and Murray, 2004). A proficient purchasing department is by definition better at doing that. Critics may argue that firms doing global sourcing are guilty of exploiting lax environmental and social regulation for economic gains. However, there is a possibility that they may choose to exploit the comparative advantage of different countries for the other two parts of the triple bottom line: social and environmental sustainability. Companies that are proficient at purchasing but are not purchasing globally are forfeiting this opportunity.

The third research question was concerned with whether global purchasing gives firms a better chance at fulfilling the goals of sustainability. The goals of sustainability were measured by the respondents indicating how important they rank environmental and social issues as a competitive priority. These two competitive form one convergent factor, named “the importance of sustainability” and is included in the regression analysis. The results show that the “importance of sustainability” is strongly associated with both environmental and social compliance by suppliers for firms purchasing globally. There is no association at all for firms purchasing locally or regionally. The results indicate that the best option for fulfilling the goal of sustainability is to purchase globally. One explanation for the results is the same as mentioned previously; global purchasing provides one more tool to achieve the goals set by management. Firms limited to local or

regional sourcing simply have fewer options for successfully implementing sustainable purchasing.

## Conclusions

Global sourcing does not directly influence purchasing performance on the category level at all, but global purchasing provides the opportunity to make use of the purchasing department's proficiency and to successfully fulfil the goals of sustainability. Firms purchasing locally and regionally are less able to make full use of purchasing proficiency for sustainability, and less able to achieve the goals of sustainability. The implication is that for firms where sustainability is high on the agenda and that possess adequate purchasing proficiency, global sourcing is actually a virtue.

The results of this paper should be viewed as preliminary, and further studies are needed to fully understand under the link between global purchasing and sustainability.

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