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Global Sourcing: Fad or Fact?

Abstract

- Global outsourcing of intermediate products is thought to be common and to improve firm performance. We investigate these claims and construct a framework for explaining international sourcing.
- The literature review provides an overview of current knowledge on global sourcing. We then present an analysis of a recent survey of 200 manufacturing firms in the Netherlands.

Key results

- Global sourcing is limited empirically, is a consequence of various firm, industry and national variables, and causes no performance effects.

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Over the course of the last two decades, the ideas of managers and management scholars concerning the optimal sourcing strategy of a firm have changed significantly in two respects. First, firms have moved away from vertical integration towards increased outsourcing, in a belief that lean and flexible (manufacturing) firms that 'stick to their knitting' perform better (Peters & Waterman, 1982; Womack, Roos & Jones, 1990). Second, starting in the 1990s, firms have been advised to use global sourcing, by picking best-in-world external suppliers, as a means to improve competitiveness (Monczka & Trent, 1991; Quinn & Hilmer, 1994). Implementing these ideas has important consequences for the structure and strategy of multinational corporations. They become leaner, even virtual, companies at the heart of international production and supply networks. This line of thinking has been followed, in one way or another, by numerous authors (e.g. Domberger, 1998; Lorenzoni & Baden-Fuller, 1995; Quinn & Hilmer, 1994).

Some firms, like Honda, are said to both have implemented global sourcing and to have benefited from it. Little substantial evidence has been provided to support such claims for a wider range of firms and sectors. We therefore ask to what extent global sourcing from outside suppliers exists, how it can be explained, and whether it leads to increased firm performance. First, an overview of existing literature on global sourcing is presented. Second, a survey of leading manufacturing businesses in the Netherlands is analyzed. Both the degree of global sourcing and the antecedents of global sourcing are assessed. Then we test the performance impact of global sourcing. Finally we present some implications and possible extensions of our research.

Global sourcing: Overview

We executed a review of peer reviewed articles appearing on sourcing and global sourcing using the ProQuest database, which is widely applied by academics in management. It

substantiates the notion that global sourcing is a topic of increasing academic interest. Over the entire 1970-1985 period only 29 articles featured 'sourcing'. Before 1986 not a single article appeared containing 'global' and 'sourcing'. After 1985 interest in global sourcing rose rapidly, particularly after the seminal article by Kotabe and Omura (1989). In the most recent time period, from 1998 to 2000, the average yearly number of articles on sourcing rose to 35, while that on global and sourcing rose to 7. The interest in global sourcing in academic journals has risen from none at all to substantial levels since the mid-1980s. This makes global sourcing an interesting topic for IM scholars. Interestingly the pattern is little different for non-peer reviewed articles, implying there is a rising interest among practitioners too.

Global sourcing was identified as a research topic in the late 1980s (Kotabe & Omura, 1989). The earliest reference to international sourcing appears to be Leff's (1974) article which, however, is concerned with production location decisions of U.S. firms that were seeking international expansion. Leff (1974) argues that plant location is essentially optimized by playing off currency fluctuations. In the late 1970s more work emerged on the international sourcing pattern of firms, which dealt with intra-firm exports using macro-economic data obtained from trade statistics (Lall, 1978) and with sourcing for final markets (Buckley & Pearce, 1979). However, none of this earlier work is concerned with internal and external sourcing as interchangeable and competing modes. Thus the definitions of earlier work do not match what is currently considered to be sourcing.

Kotabe (1992), who promoted global sourcing into an IM topic, refers to global sourcing as involving sourcing for components as well as sourcing for final products. The sourcing part is therefore rather straightforward: it simply involves all actions and transactions needed to obtain a marketable product (Kotabe, 1992). But what makes the transaction global remains rather vague in most definitions. Consider the definition given by Murray, Wildt and Kotabe (1995b):

> "Global sourcing involves setting up production operations in different countries to serve various markets, or buying and assembling components, parts or finished products world-wide".

This definition suggests that a**l**l MNCs producing abroad, and even domestic firms which use inputs from a number of countries, engage in global sourcing. Other terms used besides global sourcing, include international sourcing (Levy & Dunning, 1993), multinational sourcing (Birou & Fawcett, 1993) and offshore sourcing (Frear, Metcalf & Alguire, 1992; Kotabe & Swann, 1994). International sourcing is defined as buying by a firm in one country from a firm in another country (Levy & Dunning, 1993). Multinational sourcing (Birou & Fawcett, 1993), though not formally defined, seems to have more or less the same connotation as international sourcing. Offshore sourcing (Frear et al, 1992; Kotabe & Swann, 1994) has only been applied to US firms that produce and purchase abroad and then export products to the US. Hence global sourcing appears to be the most comprehensive of the four terms and includes multinational, international and offshore sourcing.

What do we know empirically about international flows of goods between buyers and suppliers? There is anecdotal evidence to support the notion that many firms have partially and some have entirely international supply chains and that most firms have an increasing number of international suppliers. It is this latter phenomenon, internationalization of the supply base, which is the focus of this paper. Although not very sizeable, there is some literature on the internationalization of sourcing. Two types of data have been used to determine the extent of internationalization in sourcing. The first type involves secondary, statistical data at the macro level, most notably Wyckoff (1993). The second type is primary, firm level, data from questionnaires or interviews (e.g. Kotabe & Omura, 1989).

Wyckoff (1993) estimated the degree of internationalization of sourcing on the basis of input-output tables of national economies. The results of six countries are mentioned: the US, where 13% of sourcing is international; Japan, with 7% international sourcing; France, with 38%; Germany, with 34%; the UK, with 37% and Canada, with 50%. These data are based on fairly rough international trade statistics, which do not exclude intra-firm trade (sourcing from own units and related transfer-pricing effects) and re-imports of finished goods. For some 2,000 US firms with about 18,000 foreign affiliates Kotabe and Swan (1994) calculated an offshore sourcing ratio. This ratio is defined as the sum of US manufactured imports from foreign affiliates of US firms plus platform exports from these foreign affiliates to third countries, divided by parents' total sales. This ratio is a measure of the importance of foreign production activity as a part of the firm's total production (sales). Kotabe and Swan (1994) thus investigated the sourcing of final products, calculated for three moments in time. An increase in international sourcing activity was registered: from 6,2% in 1977, via 7.8% in 1981 to 10.3% of all activities in 1989. Buckley and Pearce (1979) similarly investigated sourcing for final markets. In a sample of 156 MNCs they found results similar to the Wyckoff study. For Japanese companies a ratio of overseas production to total sales was found of 2.4%. For French companies the ratio stood at 8.0%. For the Swiss (91.6%), Benelux (70.7%) and the 'joint and other' (69.7%) MNCs a much higher ratio was obtained. Kotabe and Omura (1989) provided data on 43 European and 28 Japanese MNCs in the US. The major sourcing strategies of these MNCs are described in terms of components sourcing and assembly location. Of the European firms 16 both assemble and source components in the home country and 17 both assemble and source components in the US. Of the 10 remaining European MNCs, 4 both assemble and source components from another developed country (which may be European). Then 3 firms source components from the home country and assemble these in the US. Only 1 firm sources components from less developed countries and

assembles in the US. Only 1 firm sources components from the home country and assembles in the US. The remaining firm sources components from the US and assembles in a less developed country. Of the 28 Japanese firms in the sample 15 both assemble and source components in the home country as the major sourcing strategy. Some 5 firms both assemble and source components in the US. Another 7 firms source components from the home country, which they subsequently assemble in the US. Only 1 firm relies on sourcing of components and assembly in a less developed country. Based upon the same survey of Japanese and European MNCs, Swamidass and Kotabe (1993) calculated average component sourcing. For manufacturing in the US, 64.3% is sourced within the US, 29.9% in the home country 1.8% in other developed countries and 4% in less developed countries. For manufacturing in the home country with subsequent exports to the US, they find 6.5% sourcing in the US, 88.5% sourcing in the home country and 2.5% each in other developed countries and less developed countries. The latter appear to be the only data outside the US in the literature on component sourcing. No distinction is made between Japan and Europe. In a later study Murray, Kotabe and Wildt (1995a) used a survey among US subsidiaries of Fortune 500 companies. Of the 104 responses, 71% were from European and 21% from Japanese companies. On average these companies sourced 73.7% of their components from the US, 15.9% from the home country, 7.6% from other developed countries and 2.8% from less developed countries. In terms of assembly, 85.7% took place in the US, 7.9% in the home country, 3.5% in other developed countries and 2.9% in less developed countries. Other studies provide a less detailed view: Birou and Fawcett (1993) report 13% of sourcing to be international for a sample of 149 US firms in the US; Monczka and Trent (1991b), for a sample of US companies in the US, find 15% of sourcing to be international. Table 1 summarizes these results.

Insert table 1 around here

Although marked differences exist between these empirical studies, some similarities appear as well. First and consistent with intuition, the degree of internationalization in sourcing is negatively related to the size of the focal country. MNCs in smaller countries, such as Switzerland or Canada, use international sourcing more than Japanese or US MNCs do. Being geographically isolated probably also stimulates domestic sourcing. Second, inside the parent's home country firms do not make much use of international sourcing. Apparently these firms have over time built a large network of suppliers in their home country or even in their immediate proximity. This seems to be consistent with the idea of industrial districts or clusters (Marshall, 1919), such as Silicon Valley, where firms and their suppliers lump together. Third, foreign subsidiaries of MNCs have the most internationalized sourcing pattern. Their sourcing pattern appears to be mainly bi-national, divided between the home country and the host country. In most cases this bi-national sourcing is intra-firm sourcing.

None of the studies addressed the effects of macro-economic regions, such as NAFTA or the EU. Most studies were undertaken before these regions fully materialized, while other studies do not explicitly account for these developments. Regional integration agreements can lower transaction costs implying firms in smaller and medium-sized countries will source more internationally, but mostly from within the economic areas in which they operate. Regional sourcing strategies are based on different considerations than global sourcing.

Research questions

We now specify the research questions, which are threefold. We are interested in the degree to which firms source globally, in the causes of global sourcing, and in the performance implications of global sourcing. Building upon the overview several hypotheses will be formulated. Our hypotheses and the remainder of this paper will center on the external sourcing of inputs required to manufacture final products (international outsourcing), implying we will not discuss the assembly of final products to serve certain markets.

Extent of global sourcing

The first hypothesis draws on the general finding that international sourcing was somewhat limited in earlier studies. Over much of the 1990s the term globalization presented the dominant way of thinking about processes of internationalization. Recently, however, authors (most prominently Rugman, 2000) have pointed to the importance of regional economic processes. Sourcing from the same economic region has advantages in terms of sharing the institutional regime with the supplier and lower transportation costs. Furthermore at least a part of all outsourcing benefits from physical proximity, since there are agglomeration effects in industrial districts (Marshall, 1919) as well as just-in-time deliveries. Such effects would promote domestic or even local sourcing. Global outsourcing, obtaining worldwide inputs, is therefore probably not so prominent as has been suggested.

> H_1: Domestic and regional outsourcing are far more prominent than global outsourcing.

Antecedents of global sourcing

At the firm level one important effect, which was not discussed in the literature review due to a lack of existing data, concerns the relation between size of the firm and international

sourcing. One can argue that size of the firm is a key factor in determining the extent of internationalization of sourcing. Larger firms are less likely to find appropriate suppliers in one country. Larger firms are more international because a larger part of their size is formed by exports. Larger firms are also more likely to manufacture in multiple countries. So they are more likely to be exposed to international competition and international suppliers. And given their size they may be more eligible to receive price reductions when sourcing from one global supplier. Smaller firms source internationally when they require highly specialized inputs that are not produced everywhere. This, however, is likely to be only a small part of their inputs.

H_2: Firm size is positively related to international outsourcing.

Then there is the industry as an explanation. Internationalization of sourcing is not only a strategic choice but to some extent also an imperative dictated by industry competitors. As Kotabe (1992) has illuminated, sourcing decisions are co-determined by the stage of the product life cycle (Vernon, 1979) an industry is in. If this is the case a firm that sources internationally may not outperform competitors because firms within the industry mimic each other's behavior (DiMaggio and Powell, 1983). The decision to source from a particular location is relatively easy to imitate. Scale effects due to clustering stimulate such mimicking even further. If a certain number of suppliers of an industry are located in a country, the conditions are favorable for buyers to select one from a multitude of suppliers. Competition among suppliers in a location will increase efficiency across the industry (Marshall, 1919). A more moderate version of this 'lack of strategic choice' argument would be that in many instances firms that choose to internationalize their sourcing do so because no adequate domestic sources are available. Thus these firms are forced to source internationally, even if they know international sourcing may not bring any advantages. In fact, some industries like

electronics or automobiles are known to shift sourcing to certain countries in industry-wide waves. Kotabe (1998) has referred to these industries as 'assembly industries'. These industries operate under JIT principles. Unlike in batch industries, cooperation with suppliers is very important in the assembly industry. Cooperation is easier to realize if both parties are located close to each other since face-to-face contact improves the quality of relations. Therefore international sourcing is a less preferred option in this industry.

H_3: Being in the assembly industry is negatively related to international outsourcing.

Finally strategy and internationalization is affected by the nationality of a firm (Yip, Johansson and Roos, 1997). One conclusion stemming from the literature review was that those firms most likely to use international sources are subsidiaries of foreign firms, given their extensive social networks outside of the focal country. They are able to combine the best traits of two supply bases, the home and the host supply base. Domestic firms are more likely to be focused on existing networks within national boundaries.

H_4: Being a foreign (host) firm is positively related to international outsourcing.

Related to this it can be expected that multinational firms, with their previous international experience, are exposed to a much wider scope of international sourcing opportunities. MNCs, both Dutch and foreign, have established supply networks in other countries and can optimize their payoffs by combining the best elements of various countries. This will result in higher international sourcing.

H_5: Being an MNC is positively related to international outsourcing.

Performance consequences of global sourcing

The relationship between global sourcing and performance has been problematic so far for two empirical reasons and one conceptual reason. The first empirical problem is simply a lack

of studies linking international sourcing and performance. The only empirical study addressing this link is Scully and Fawcett (1994) who cite some perceived advantages of global sourcing and several challenges to successful global sourcing. However, they base their conclusions on a measure of the (perceived) performance impact of global sourcing that is simply an average of a set of managerial responses to the statement that international sourcing has improved the firm's overall performance. No upward and downward margins of error are reported, which makes an estimation of reliability of these findings impossible. Furthermore it is doubtful whether such a measurement method could even generate reliable findings. The second empirical problem is a lack of reliable data to investigate internationalization of sourcing (Swamidass & Kotabe, 1993). Firms do not publicly report sourcing activities in the same way they report sales data. At the national level only trade data are available, which do not specify firm behavior and performance. These limitations have seriously constrained researchers in need of data on the extent of internationalization in sourcing.

Conceptually, there has not been a satisfactory explanation as to why international outsourcing would be superior to domestic sourcing. Although many ad hoc arguments in favor of international outsourcing have been given, we are still stalled at the position of suspecting a positive impact of global sourcing on performance but being unable to explain it. However, by combining several lines of argument, a hypothesis can be obtained. Quinn & Hilmer (1994) suggest that through international sourcing firms open up a much larger pool of suppliers and can pick so-called 'best-in-world' suppliers. Thus international sourcing allows for a wider search and potentially more competition among suppliers leading to more efficient outcomes. Kotabe (1998) has suggested Pacific Rim sourcing may have delivered U.S. firms particular efficiency advantages. The internationalization literature at large has similarly suggested important advantages attached to internationalizing the firm. For example, Dunning (1993) in describing several main internationalization motives, distinguishes between

resource seekers, market seekers, efficiency seekers and strategic asset or capability seekers. Escape investments and support investments are secondary motives for internationalization. While it clearly goes beyond the scope of this paper to link all of these motives to sourcing strategy, it is obvious that international sourcing might, like FDI, potentially deliver such benefits for instance in the form of efficiency gains. A final argument would be the self-selection bias occurring in the choice to internationalize (Dunning, 1993): only those firms that believe they can obtain competitive advantage from internationalizing decide to do so.

H_6: Global outsourcing is positively related to the performance of a firm.

Research method

There is a lack of data on international sourcing. Furthermore, most empirical measurement has taken place in the late 1980s and early 1990s. In addition, most of the firm level data on international sourcing are from the US. Sourcing research in the EU, has been confined to descriptions of particular sourcing relations and networks (Dubois, 1998) and the structure and functioning of supplier networks (Ford, 1998). There does not appear to be any evidence on (the performance of) international sourcing strategies of firms in European countries.

To overcome these deficiencies, a mail survey on international sourcing strategy was sent to 787 managers of the largest manufacturing firms in the Netherlands in late 2000 and early 2001. The Netherlands makes a good case for a study on international sourcing given the fact that it is a small and open economy with substantial foreign investments in various manufacturing industries. Of all the countries in the world, the Dutch economy has the largest combined presence of home and host multinationals in the economy (Van Tulder, 1998). If global sourcing is not a dominant strategy in this country, it is even more unlikely to be found in larger EU member states like Germany or Italy with their more substantial domestic supply bases. The firms were those manufacturing members of NEVI, the Dutch association for

purchasing management, for which additional background information could be obtained from Statistics Netherlands (CBS). A total valid response of 204 was obtained, of which 200 were in time to be used for the current analysis. If at least 80% of the survey was completed, a response was seen as valid. Two rounds of mail surveys were sent out following the regular procedures (Dillman, 1978). After those two rounds close to 2,000 telephone calls were executed. Thus it was possible to analyze in some detail the reasons for non-response among a great majority of the remaining firms in the sample. A group of 19 (survey was never delivered) and 67 (survey inappropriate for firm) and 30 (survey inappropriate for individual), or 116 firms, can be dropped from the sample when calculating the effective response rate. This implies the effective response rate for the survey is 204 / 671 * 100%, or 30.4%, which stands out positively when compared to other research in sourcing strategy. Gilley and Rasheed (2000) sent out their survey to two respondents in a firm to receive a response from only 17% of the firms. Murray et al. (1995a) obtained an effective response rate of 22%. Using the CBS background data we established there was no non-response bias in terms of turnover, number of employees, extent of outsourcing, and profitability.

Measures

First, firms were asked to identify for their largest product the countries of origin among which the total sources volume was distributed. The question was ”Out of 100% of all the volume your firm sources externally, what percentage stems from the Netherlands, Belgium / Luxembourg, Denmark / Finland / Norway / Sweden, Germany / Austria / Switzerland, France / Italy / Spain / Portugal, UK / Ireland, Greece, Central and Eastern Europe, US / Canada / Australia, Japan, rest of Asia, and rest of world”. The answers were used to establish the degree of internationalization of the supply base and to distinguish between domestic

(Netherlands only), regional (EU), foreign or international (outside the Netherlands), and global (outside of EU) sourcing.

Then the other variables in the model were measures. The industry in which the firm operates was defined similar to Woodward (1965) as a three-way dummy between traditional industries like clothing, batch industries like chemicals and assembly industries like electronics. Naturally firm size was included (measured by the annual sourcing budget). Foreignness was measured as a dummy taking on the value of 1 for foreign firms. Then the degree of product innovation was added, using the measures of Murray et al. (1995a). Here a Cronbach á value of .80 was obtained using two out of three proposed items (Murray et al., 1995a). Furthermore the degree of standardization of the firm's product was included (from Murray et al., 1995a), since it is often suggested standardized products are best fit for international sourcing. Another measure was the degree of outsourcing. As suggested earlier, outsourcing and not global sourcing may be driving performance. The degree of outsourcing was defined similar to Murray et al. (1995a). A measure of the overall strategy of the firm based on the Miles and Snow (1978) typology and proposed by Shortell and Zajac (1990) was used in a belief that general strategy matters to a firm's performance (Miles and Snow, 1978; Porter, 1980). Finally, to measure performance itself, the measures used by Murray et al. (1995a) in their research on global sourcing strategy in the US were replicated. These measures were used previously for sourcing research and found to be useful. Thus, firms were asked to compare their financial performance (ROS and ROI) and market performance (market share and sales growth) with that of their three largest competitors. Given the high positive correlations between these measures, they were aggregated to form one performance variable using all four items (Cronbach á value of .66).

Findings

Extent of global sourcing

An overview of the average geographical spread of the supply bases of all firms is given in table 2. Internationalization of the supply base is mainly limited to other EU countries, with the exception of a few firms or industries[1]. In fact only 11% of sourcing stems from other areas of the world. Of all EU sourcing, domestic sourcing from within the Netherlands is the largest contributor at around 55% of all sourcing. Germanic countries also contribute significantly at 17%. Some 19 firms sourced exclusively from the Netherlands, another 13 did not source anything from the Netherlands. Among foreign countries the Germanic countries are most popular. This is not surprising given the large annual trade volume between Germany and the Netherlands and the relative strength of Germanic countries in manufacturing. Among other EU countries there is more or less an even spread, although Belgium as the only other directly neighboring country also accounts for a significant volume of sourcing. Beyond the EU there is not much sourcing activity going on. Most of that global activity is concentrated in Anglo-Saxon countries and to some extent in Central and Eastern Europe and Asia. The data provide clear support for hypothesis 1.

Insert table 2 around here

Correlations and means are presented in table 3 showing that several variables are strongly correlated. Note that the strong correlation between foreign and global sourcing is obvious since foreign sourcing is an important part of global sourcing.

Insert table 3 around here

Antecedent of global sourcing

The same data are now used to estimate the effects of various variables on international sourcing. Table 4 reveals the results of the regression analysis on international sourcing that included the predictors on a) firm size, b) industry, and c) country of origin. Confirmation is found for hypotheses 3, 4 and 6, while hypothesis 5 has the appropriate sign but lacks significance.

Insert table 4 around here

The evidence for hypothesis 6 is particularly strong, suggesting that MNCs indeed outsource much more internationally than purely domestic firms do. The evidence for hypothesis 3 confirms the importance of firm level factors, in particular size of the firm. Larger firms source more internationally. Hypothesis 4 is also reflected in the data: a part of international sourcing is indeed explained by factors at the industry level. Firms in the assembly industry, with their complicated products, appear to benefit from proximity to suppliers. That no significant results was found for hypotheses 5 might be assigned to the limited number of foreign firms in the sample (41). This result warrants further testing. The degree of outsourcing is also positively related to foreign sourcing, implying that

firms that outsource much use more international inputs. This makes sense given their larger need for outside suppliers that is hard to fulfill by only using Dutch suppliers.

Performance consequences of global sourcing

In table 5 results of the regression analyses on firm performance are presented. The model tests and explained variance are appropriate and several dummies as well as the product innovation measure are significantly related to firm performance in the first model. When adding international sourcing in the second model no additional explanatory value was obtained. The same applies for adding global sourcing in the third model. Thus hypothesis 2, stating a positive relation between internationalization of the supply base and performance of a firm has to be rejected.

Insert table 5 around here

Discussion and limitations

The data on international sourcing strategy confirm patterns from earlier studies on international sourcing. Most sourcing comes from within the economic region in which the firm is located, in this case the EU. Apparently there are key products these manufacturing firms source, which they themselves believe are best sourced from nearby places (JIT delivery plays an important part here). For peripheral products this may differ as they contribute less to the total costs of the final product and can therefore perhaps be sourced at a higher risk.

These findings contradict predictions and statements that geographical borders and location no longer matter (Ohmae, 1990). They provide support for an alternative view, which

suggests there is no across the board globalization and that most of the current processes of internationalization and competition are regional in nature (Rugman, 2000; Ruigrok & Van Tulder, 1995). The motives for international sourcing are not only intrinsic and aimed at increasing efficiency (the key motive that Dunning, 1993 sketches), but are also triggered by extrinsic motivation aimed at bargaining with home as well as host governments and increasing strategic effectiveness. Although large multinational companies also invest in other regions of the world, their overall dependence on their home regions is often still large. Furthermore most trade takes place within economic regions and not between them. Of course there are always exceptions and some firms do indeed source much from abroad. Those that source more from outside the EU are larger firms and foreign host firms. Host firms source more from their respective home countries since they already have a strong supply base there. Furthermore they have problems adapting to local circumstances and constructing a local supply base may be costly in terms of the costs involved in finding local suppliers and building up relationships with these suppliers. Larger firms will require larger volumes from suppliers, making the range of possible suppliers smaller. Finally it may be beneficial to source larger volumes from abroad due to scale economies in purchasing, transportation and distribution.

Beyond the factors were tested and discussed above other variables may induce global sourcing. Internationalization of sourcing can be the consequence of historical conditions, in particular previous M&A activity. If a firm is composed of multiple units from different countries, it is much more likely to source internationally. Even if the M&A partners were located in the same country, their combined network reach would still be larger, inviting more international sourcing opportunities. More generally previous foreign experience will increase international sourcing. One thing previous IM literature has taught us is that firms expand

from their existing social networks (Rangan, 2000). Trade with another party at a certain distance is much more likely to occur if that other party is located within national borders than if it is located in a neighboring country. However, MNCs start building an international network once they start expanding across borders. So if a firm has previous international experience (Barkema, Bell & Pennings, 1996), it is more likely to source from a multitude of locations given the network of linkages that it has established with partners in other countries. One further effect that might help predict international sourcing is the physical and cultural distance of a country to other countries. Cultural distance is an indicator of the likelihood of expansion to a particular country (Barkema, Bell & Pennings, 1996). Similarly, operating from a country with relatively small cultural distance to nearby countries (supply sources) will stimulate sourcing from these countries. Obviously these potential effects should be discussed in more depth and tested empirically in future studies as they exceed the capacity of the current study.

No impact of internationalization of sourcing on performance was found. One may be tempted to conclude that internationalization of sourcing does not lead to the expected performance increase, nor to any performance decrease. However, it could be there are measurement errors. The Cronbach á value on the dependent variable of performance is not really high. This might weaken the relation between internationalization and performance. However, there is no relation at all between the independent variable, internationalization, and the dependent variable, performance, while there are substantial other effects. Thus, a slightly higher reliability will most probably not produce very different results. Another obvious limitation could be that the finding is typical for the Netherlands or small countries in general. There is no a priori reason to assume international sourcing by firms in the Netherlands would be any different from international sourcing by firms in Japan. In fact, similar findings

emerged from earlier literature, which used other countries for empirical testing. Further empirical evidence is needed to substantiate this point. We therefore cautiously conclude that international or global sourcing does not provide a significant explanation for firm performance. This may imply two complimentary things. First, when firms do follow a strategy of international outsourcing in order to increase firm performance, it does not pay off. Second, the pattern of international outsourcing is not the result of an explicit internationalization strategy: international outsourcing is the result of other factors. Our analysis provided evidence of this by pointing at various firm specific, industry specific and country specific factors.

Although firms may gain from internationalization of sales, assets and manufacturing, as most of the literature on internationalization suggests, they do not gain from internationalization of sourcing. This confirms what some authors have hinted at but not explicitly tested. For example Kotabe (1992: 47) concluded that sourcing location may not matter very much in the long run. He suggests it matters far more to assess whether certain key items are sourced internally or externally than to look at where they are sourced. There are advantages to be gained from international sourcing by lower production costs but increased transaction and logistics costs connected to international sourcing offset these advantages. Firms may find it difficult to govern international supply relations effectively because of language, cultural and institutional differences or simply because of large distances. Qualitative observations we made of problems that Dutch manufacturing firms have faced when sourcing from Central and Eastern Europe confirm this point. Substantial efforts are needed to duplicate supply sources elsewhere in the world, which is necessary to lower risks associated with international sourcing. This makes the extent to which firms can leverage international supply relations highly dependent on their ability to manage far away partners. In short, sourcing managers continuously balance transaction and production costs.

Conclusions

The internationalization of the supply base is an ongoing and context dependent process. Several important points were made in this paper to enhance the international sourcing literature. First, neither previous research nor the empirical data presented here indicate that global sourcing is a common phenomenon in actual management practice. Domestic and intra-regional sourcing are far more prominent. This implies scholars should not assume global sourcing but instead ought to look at the drivers of various international sourcing strategies. Such a research strategy will provide more of the much-needed insight into the process of internationalization of the supply base. Second, this paper has constructed a framework of these drivers by identifying firm, industry, and national factors affecting internationalization of sourcing. An empirical test was provided to confirm the validity of the framework. In particular it was shown that large firms and multinational firms source more internationally. There was also evidence that industry factors matter, as firms in the assembly industry source less internationally. Third, international sourcing is not the performance-enhancing tool that some authors ascribe it to be. Given the lack of previous tests of the relation between internationalization of sourcing and performance and the lack of any positive findings in this study, there is really no evidence for such a belief. It is more appropriate to think of internationalization of sourcing in terms of a balancing act between production cost advantages attached to international locations and transaction cost advantages attached to domestic locations. Since there is no performance impact the strategic management rationale of extensive global sourcing is doubtful. Fourth, as the strategy and structure of MNCs evolves, so does their design of relations with outside suppliers. Internationalization of the supply base may not matter much in terms of obtaining superior results. Obviously this is not the same as saying that internationalization does not matter in terms of a firm's overall

structure and strategy, as well as its managerial efforts. Strategic international sourcing can help a firm to establish a foothold in other markets or improve its legitimacy. MNCs may shift sourcing from domestic to international suppliers or vice versa. Such shifts imply important managerial problems are faced in terms of how to deal with international interorganizational relations. This opens up a whole new area of research opportunities.

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Tables

Author(s)	Country	Dom.	Int.	Home	Host	Other	Devel.
(Wyckoff, 1993)	US	87%	13%	-	-	-	-
(Wyckoff, 1993)	Japan	93%	7%	-	-	-	-
(Wyckoff, 1993)	France	62%	38%	-	-	-	-
(Wyckoff, 1993)	Germany	66%	34%	-	-	-	-
(Wyckoff, 1993)	UK	63%	37%	-	-	-	-
(Wyckoff, 1993)	Canada	50%	50%	-	-	-	-
(Kotabe & Swann, 1994)	US (1977)	93.8%	6.2%	-	-	-	-
(Kotabe & Swann, 1994)	US (1982)	92.2%	7.8%	-	-	-	-
(Kotabe & Swann, 1994)	US (1989)	89.7%	10.3%	-	-	-	-
(Buckley & Pearce, 1979)	Japan	97.6%	2.4%	-	-	-	-
(Buckley & Pearce, 1979)	France	92.0%	8.0%	-	-	-	-
(Buckley & Pearce, 1979)	Switzerland	8.4%	91.6%	-	-	-	-
(Buckley & Pearce, 1979)	Benelux	29.3%	70.7%	-	-	-	-
(Kotabe & Omura, 1989)	US/ass.†	-	-	37.2%	48.8%	9.3%	4.7%
(Kotabe & Omura, 1989)	US/ass.‡	-	-	53.6%	42.6%	-	3.6%
(Kotabe & Omura, 1989)	US/comp.†	-	-	46.5%	41.9%	9.3%	2.3%
(Kotabe & Omura, 1989)	US/comp.‡	-	-	78.6%	17.9%	-	3.6%
(Swamidass & Kotabe, 1993)	US§	-	-	29.9%	64.3%	1.8%	4%
(Swamidass & Kotabe, 1993)	Eur./Jap.	88.5%	-	-	-	9%	2.5%
(Murray et al, 1995a)	US/ass.§	-	-	7.9%	85.7%	3.5%	2.9%
(Murray et al, 1995a)	US/comp.§	-	-	15.9%	73.7%	7.6%	2.7%
(Birou & Fawcett, 1993)	US	87%	13%	-	-	-	-
(Monczka & Trent, 1991b)	US	85%	15%	-	-	-	-

Table 1: Summary of research findings: domestic, international, home country, host country, other developed country and developing country sourcing. Findings have been recalculated into percentages. Note: authors use different ratios and methods (see text). Sometimes assembly (ass.) and components (comp.) are distinguished. † European MNCs in the US; ‡ Japanese MNCs in the US; § A combination of European and Japanese MNCs in the US.

	Netherlands	**Belgium Luxembourg**	**Denmark Finland Norway Sweden**	**Germany Austria Switzerland**	**France Spain Portugal Italy**	**U.K. Ireland**	**Greece**	**European Union total**
Mean	55.4%	5.7%	3.9%	17.4%	4.3%	2.6%	0.02%	89.3%
Stand. dev.	31.5	12.7	12.1	21.1	10.8	8.58	0.28	20.0
Minimum	0%	0%	0%	0%	0%	0%	0%	2%
Maximum	100%	100%	100%	100%	100%	75%	4%	100%
	Central and Eastern Europe	**U.S. Canada Australia**	**Japan**	**Rest of Asia**	**Other countries**			**Grand total**
Mean	2.5%	3.6%	1.6%	1.9%	1.1%			100%
Stand. dev.	8.36	12.0	6.42	8.06	5.65			0
Minimum	.00	.00	.00	.00	.00			100%
Maximum	60%	98%	50%	80%	60%			100%

Table 2: average spread of supply base among countries and regions of the world with lowest and highest numbers for single firms. N = 199.

	Mean	Foreign sourcing	Global sourcing	Firm size	Product innovation	Standardizatio n	Outsourcing	Firm performance
Foreign sourcing	44.61	1.000	.443 **	.180 *	-.022	.026	.126	.053
Global sourcing	10.7	.443 **	1.000	.083	-.003	-.099	.165 *	.028
Firm size	8.0 E+07	.180 *	.083	1.000	.034	.075	.121	.008
Product innovation	8.74	-.022	-.003	.034	1.000	.006	.078	.277 **
Standardize	47.5	.026	-.099	.075	.006	1.000	.004	.059
Outsourcing	50.0	.126	.165 *	.121	.078	.004	1.000	.114
Firm performance	13.1	.053	.028	.008	.277 **	.059	.114	1.000

Table 3: Descriptives of key variables and correlations (dummies excluded). * significant at the 10% level; ** significant at the 5% level. N = 181-199.

	B (S.E.)
(Constant)	27.358 (5.408) ***
Assembly industry	-10.025 (4.460) **
Foreignness	4.144 (5.230)
Outsourcing	.114 (.067) *
Firm size	1,54E-05 (.000) *
Traditional industry	2.542 (7.208)
Multinational	20.355 (4.484) ***
F-test	6.896 ***
R^2	.179
Adjusted R^2	.153

Table 4: Regression models for foreign sourcing. Shown are â values, standard errors and significance levels. * Significant at the 10% level; ** significant at the 5% level; *** significant at the 1% level. N = 190.

	B (S.E.)	B (S.E.)	B (S.E.)
(Constant)	9.989 (.894) ***	9.901 (.921) ***	9.988 (.897) ***
Batch industry	.402 (.517)	.411 (.519)	.404 (.519)
Assembly industry	-.262 (.538)	-.231(.544)	-.264 (.540)
Defender	.511 (.920)	.496 (.923)	.491 (.929)
Analyzer	1.032 (.482) **	1.018 (.485) **	1.022 (.487) **
Prospector	.808 (.453) *	.808 (.454) *	.801 (.455) *
Firm size	-8,49E-07 (.000)	-9,97E-07 (.000)	-8,94E-07 (.000)
Standardize	-4,63E-01 (.004)	-4,32E-01 (.005)	-3,73E-01 (.005)
Outsourcing	8,30E+00 (.005) *	7,98E+00 (.005)	8,16E+00 (.005) *
Top management	-.539 (.650)	-.553 (.652)	-.550 (.654)
Purchasing spec.	.387 (.412)	.386 (.413)	.384 (.414)
Product innovation	.202 (.056) ***	.203 (.056) ***	.202 (.056) ***
Foreign sourcing		2,13E+00 (.005)	
Global sourcing			1,38E+00 (.007)
F-test	2.838 ***	2.604 ***	2.590 ***
R^2	.157	.158	.157
Adjusted R^2	.102	.097	.096

Table 5: Hierarchical regression models without sourcing location, with international sourcing (outside Netherlands), and with global sourcing (outside EU). Shown are â values, standard errors and significance levels. * Significant at the 10% level; ** significant at the 5% level; *** significant at the 1% level. N = 180.

[1] Both Norway and Switzerland are seen as part of the European Union although they are not official EU members. Both countries are members of the European Economic Area (EEA), implying they are part of the Common Market and the physical distance to EU countries is limited.