

Make or Buy Strategy and Origin of Sourcing Materials and Their Relationship with Firm Performance

Zainal Abidin Mohamed*, Haim Hilman Abdullah**, Rozhan Othman***
and Jegak Uli****

The paper presents a study relating to the strategic decision of 'make' or 'buy' to organizational performance, and whether it is related to the origin of the resources used on manufacturing firms in Malaysia. Convenience sampling was done and 314 companies responded. The findings indicate that there was no significant difference between the performance of companies that 'make' or 'buy'. But when these two groups were further scrutinised based on the origin of their resources used, sourcing from developed and developing countries do have effects on company performance. The make or buy decisions have become strategic in nature and the sourcing from different destinations have significant relation with performance. Now that globalisation is common, choosing where your resources come from (to 'buy' or to 'make') can also be a strategic factor. The findings may add another dimension for consideration in the strategy formulation process.

Field of Research: Make-Buy Strategy, Sourcing Origin, Firm Performance

1. Introduction

With the globalization of market place, many firms have put greater emphasis on their sourcing practices to better manage their operations (Carter et al., 2000). Monczka et al., (2002) discussed the purchasing configurations consist of manufacturing support, price buying, consolidation and integrated sourcing, and supply chain management. This study focused on sourcing strategy in lieu to the developments of sourcing practices itself which has become an important factor for firms to gain advantage over its competitors (Kemppainen & Vepsalainen, 2003), and a key factor in enhancing firms' competitiveness and organizational performances (Lee & Billington, 1992; Mclvor, 2000; Bovet & Martha, 2003).

* Zainal Abidin Mohamed, Graduate School of Management (GSM) Universiti Putra Malaysia email: laniaz@putra.upm.edu.my

** Haim Hilman Abdullah, Graduate School of Management (GSM) Universiti Putra Malaysia email: haimhilman@yahoo.com

*** Rozhan Othman, Graduate School of Management (GSM), Universiti Putra Malaysia email: dr_rozhan@yahoo.com

**** Jegak Uli, Faculty of Educational Studies, Universiti Putra Malaysia email: jegak@ace.upm.edu.my

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One of the key issues of sourcing strategy in manufacturing industry is the growing importance of the 'make' or 'buy' decision. Surveys have shown that senior managers in manufacturing industry are unanimous in their view that such decision should be part of their business strategy (Probert, 1996). Traditionally, buying by organizations has been done largely on the basis of obtaining the best price, exceptionally taking into account a few other factors such as quality and delivery. Few have treated this 'make' or 'buy' decision as a strategic issue, with many companies deciding to buy rather than make for short-term reasons of cost reduction (Ford et al., 1993). The objectives of this paper are to examine the sourcing practices ('make' or 'buy'), origin of the resources used, and the effect of the sourcing decision on organizational performance in the context of manufacturing firms in Malaysia. Further the paper discusses the findings and possible implications to be considered by firms embarked on a journey of sourcing their 'make' or 'buy' decisions.

2. Literature Review

Sourcing decision is a question on whether a firm is competent enough to perform its operations fully or should it acquire the needed resources or should it establish partnership with suppliers in order to outperform competition (Walker 1988; Anderson & Katz 1998; Sislian and Satir 2000). Many firms are obviously working hard toward achieving objectives like cost reduction, quality, service and delivery improvement, organizational focus, flexibility enhancement and change facilitation (Fan, 2000; Zeng, 2000; Humphreys et al., 2000; Canez et al., 2000; Jennings, 2002; Gilbert et al., 2006). It plays an integrative role in the firm's strategic planning process (Reck & Long, 1988, Ammer, 1989; Carr et al., 2000; Carr & Pearson, 2002); and the key to succeed in achieving such integration lies in the skills and capabilities of the people who work in the purchasing function (Reck & Long, 1988; Carr & Pearson, 2002). Leading-edge multinationals firms realize the competition in not on a short-term basis (fire fighting) but rather it's on a long-term basis (strategic) (Narasimhan & Das 1999; Sislian & Satir 2000).

Historical events, such as the 1970s Arab-oil embargo in the USA, had caused firms to recognize the strategic role of sourcing and turned the 'make' or 'buy' practices from a low skilled clerical function to a highly skilled strategic function where they are involved in strategic decisions and managing the firm's sourcing decisions (Ellram & Carr, 1994). The recognition is even more now as many leading firms have considered the control of costs and supply management as important factors in maintaining the ability to remain competitive (Carr et al., 2000; Cousins, 2005). The theory behind the conceptual basis for the sourcing decision is Williamson's (1975) theory of transaction cost analysis, and resource based view (RBV) (Penrose, 1959; Wernerfelt, 1984; Ettlief & Sethuraman, 2002).

2.1 Sourcing Strategy - Make

Capron and Mitchell (2004) argued that 'make' and 'buy' strategies reflect the differences in companies' capacity to cope with contractual hazards, strategic gaps, and internal legitimacy difficulties. Based on the transaction cost arguments, managers are more likely to choose 'make' over 'buy' strategy when the targeted capabilities face increasing asset specificity and contractual hazards (Mowery & Rosenberg, 1989; Pisano, 1990). They also prefer 'make' strategy when targeted capabilities do not exist outside the firm or even if they do exist, they cannot be traded through markets or across firms (Capron & Mitchell, 2004), or when suppliers do not want to trade unique and valuable resources (Dierickx & Cool, 1989). So, to remain competitive, firms need to develop the ability to recombine its internal capabilities into new configurations of capabilities (Henderson & Clark, 1990; Galunic & Rodan, 1998).

2.2 Sourcing Strategy – Buy

'Buy' strategy or outsourcing is an act of moving some of a firm's internal activities and decision responsibilities to outside providers (Lankford & Parsa, 1999). Firms nowadays tend to contract out more manufacturing and service activities than they did a decade ago (Fuller, 2002). This trend has been driven by changes in the business environment and the pursuit of lean operations (Hui & Tsang, 2004). The 'buy' strategic option has enable firms to secure advantages such as economies of scale (mass production) and scope (specialization), cost reduction, quality, service and delivery improvement, organizational focus, product flexibility enhancement and exploit change facilitation provided by external suppliers (Mclvor et al., 1997; Fan, 2000; Zeng, 2000; Kakabadse & Kakabadse, 2000; Jennings, 2002; Hui & Tsang, 2004; Gilbert et al., 2006), as well as gain new knowledge or realised the need for additional product development resources to speed up the time taken to deliver to the market (Fan, 2000; Jenning, 2002; Barragan et al., 2003).

2.3 Sourcing Destination

To remain competitive, firms are required to make substantial judgment on the wide range of trade-offs present, recognize all the alternatives available and make a decision which balances both the short- and long-term needs of the firm. Strategic sourcing or strategic partner for sourcing purposes exist when all the parties involved recognize the opportunity to work together for mutual benefit, in a long-term and on-going relationship (Mclvor and Humphreys, 2000). So, it is important for firms to be very certain on the advantages and disadvantages of each sourcing options because different suppliers or context of supply may have different level of scope and intensity (Branemo, 2006). For example, Monczka and Trent (1991) categorized sourcing into 3 categories: (a) local sourcing as firms buy from local suppliers - engage in no direct foreign purchasing activities; (b) international sourcing - buy from foreign suppliers - procurement personnel view the entire world as a potential source of raw materials, components, services and

finished goods; and (c) global sourcing - buy from global suppliers – procurement personnel view the entire world and seek supply from the most efficient suppliers via coordinating and configuring best suppliers.

2.4 Sourcing Decision and Performance

Advantages and disadvantages of both sourcing strategies are subject to many factors both internal and external. However, globalization has turned the decision to 'make' and 'buy' is no longer a tactical but a strategic issue in manufacturing strategy (McIvor & Humphreys, 2000), and become a major determinant of profit making and a significant contribution to the financial health of the firm (Yoon & Naadimuthu, 1994; McIvor & Humphreys, 2000; Zeng, 2000; Cousins et al., 2006). It is clear that an inappropriate 'make' or 'buy' decision can result in cost overruns, project delays or a solution that does not fit business needs (Murthi, 2002).

Five major issues that firms may fail to consider when determining their sourcing strategy as identified by McIvor et al., (1997) are;

- (a) should the firm strive to maintain and build its capability in a particular technology or source from the best in the industry?
- (b) does the necessary capacity exist within the company to provide the item?,
- (c) does the firm's internal design and manufacturing capabilities lag behind potential suppliers?,
- (d) is the item part of integrated production route involving several stages of manufacture? If so, can outside manufacture be satisfactorily co-ordinated with internal production schedules?, and
- (e) if there is a disparity between purchasers and suppliers, how much investment is required internally to match the capabilities of the suppliers?

The phenomena of making sourcing decision without strategic justification is supported by a study carried out by Ford et al., (1993) on firms that operate in the UK, US, Australia and Canada. They found that over half of the respondents had no policy regarding the 'make' or 'buy' decision. Ironically, even though when such decisions have been considered, they were handled solely by the purchasing section and were based on short-term cost criteria rather than on long-term strategic positioning. To reduce potential risks of a wrong sourcing strategy, some firms go off-shore to form partnerships or establish a subsidiary.

2.5 Hypotheses

The paper proposes three hypotheses and they are:

- H1:** there is a significant difference in the performance of firms that 'make' or 'buy',
H2: there is a significant difference between the performance of firms that 'make' but obtain their resources from different category of countries,
H3: there is a significant difference between the performance of firms that 'buy' from different category of countries.

3. Methodology and Research Design

The total number of respondents were 314, and were convenience sampled from the 2007 list of the Federation of Malaysian Manufacturers (FMM). Questionnaires were mailed specifically to senior personnel in the procurement sector who would be able to respond comfortably to the issues studied. The instrument used by Kotabe and Omura (1989) on sourcing strategy was adapted. Twelve questions on various sourcing practices were used. For the organizational performance, seven questions that cover both financial and non financial measures were also taken and adapted from four different studies (Venkatraman and Ramanujam in 1986, Dess and Robinson in 1994, Lee and Miller in 1996 and finally Kaplan and Norton in 1996). For the sourcing pattern and source of supply, it was developed and validated through a focus group process.

4. Findings and Discussions

- a. H1: there is a significant difference in the performance of firms that 'make' or 'buy',

Table 1: Group Statistics

	SSMB	N	Mean	Std. Deviation	Std. Error Mean
GP	1.00	153	5.8618	.40751	.03295
	2.00	161	5.8296	.46167	.03638

Table 2: Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
GP	Equal variances assumed	1.616	.205	.653	312	.514	.03218	.04924	-.06471	.12906
	Equal variances not assumed			.656	310.329	.513	.03218	.04908	-.06440	.12875

The tables above show the two category of firms (high percentage of 'make'=1'; and 'buy'=2). An independent sample t-test was conducted to compare the performance of those that opted for the strategy to 'make' and to 'buy'. There was no significant difference in the scores for make (M = 5.86, SD = 0.42), and buy (M = 5.83, SD = 0.46); t = 0.65; df = 312, and p > 0.05.

H1 is thus rejected.

Discussion: The study indicated that the performance of firms were not influence by their decision whether to 'buy' or 'make'. Such decision though strategic do

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influence the performance but there is no indication that firms that 'buy' perform better than those that 'make'

- b. H2: there is significant difference between the performance of firms that 'make' but obtain their resources from different category of countries,**

For firms that opted for 'make' strategy, they still have to get their raw materials and components and these were obtained from various parts of the world. Table 3 below shows in detail the origin of these resources.

Table 3: Distribution of Supplying Countries for 'Make' Option

COUNTRY	OPT 1	OPT 2	OPT 3	OPT 4	FREQUENCY	PERCENTAGE %
Malaysia	227	-	9	-	236	18.8
China	6	31	15	-	52	4.1
Singapore	15	23	3	-	41	3.3
Indonesia	24	9	5	-	38	3.0
Thailand	3	23	2	1	29	2.3
Japan	12	3	6	-	21	1.7
USA	6	-	9	-	15	1.2
UK	3	10	-	-	13	1.0
Germany	3	6	3	-	12	1.0
Vietnam	-	7	4	1	12	0.9
S. Korea	7	3	-	-	10	0.8
Australia	4	-	4	-	8	0.6
Norway	4	3	-	-	7	0.6
UAE	-	7	-	-	7	0.6
Holland	-	-	7	-	7	0.5
Switzerland	-	-	3	-	3	0.2
India	-	-	1	-	1	0.1
Others	-	-	-	45	45	3.6
Not Selected	-	189	243	267	699	55.7
Total	314	314	314	314	1256	100

The supplier countries in the above table were then categorised into high and low cost of production countries (with Malaysia a category of her own). Developed and high per capita income countries were categorised as high production countries. The performance scores of firms that 'make' were then analysed according to these categories and the results are shown below.

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Table 4: Data according to category

Group	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
1.00	66	5.8918	.44338	.05458	5.7828	6.0008	5.00	7.00
2.00	19	5.6316	.11967	.02745	5.5739	5.6893	5.57	6.00
3.00	12	6.0714	.12922	.03730	5.9893	6.1535	5.86	6.14
4.00	20	5.8643	.52330	.11701	5.6194	6.1092	5.29	7.00
5.00	16	5.8929	.31080	.07770	5.7272	6.0585	5.29	6.43
6.00	1	5.0000	5.00	5.00
7.00	19	5.8722	.40934	.09391	5.6749	6.0695	5.29	6.43
Total	153	5.8618	.40751	.03295	5.7967	5.9269	5.00	7.00

Group 1 = Malaysia only

Group 2 = High costs of production countries (Western, Australia, Japan, Singapore)

Group 3 = Low costs of production countries (developing countries plus China)

Group 4 = Malaysia and Group 2

Group 5 = Malaysia and Group 3

Group 6 = Group 2 and 3 combined

Group 7 = All

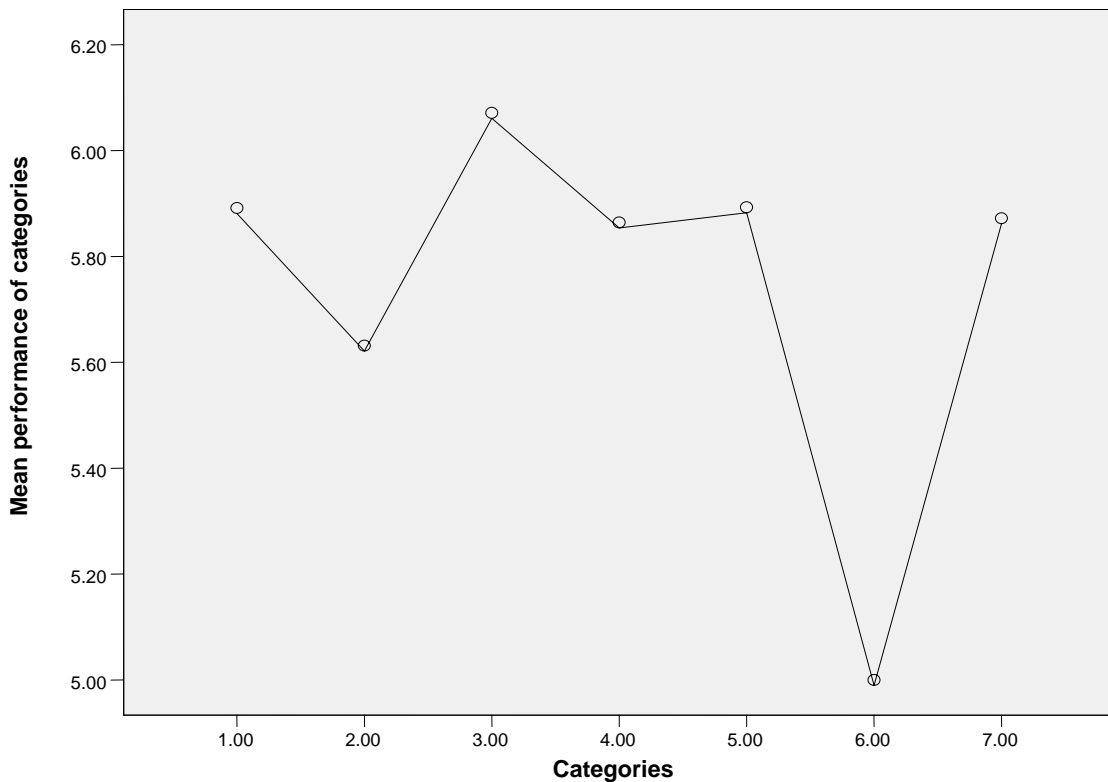
Table 5: ANOVA

Group	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	2.354	6	.392	2.503	.025
Within Groups	22.888	146	.157		
Total	25.242	152			

A one way between-groups ANOVA was done to explore the impact of sourcing destinations. There was significant difference at the $p < 0.05$ level in categorised scores for the seven groups $F(6, 146) = 2.50$. Thus this supports hypotheses H2. Despite indicating significant difference statistically, the actual difference in mean scores between the groups were quite small.

Graphically, the results are also shown in Chart 1.

Chart 1: Means Plots



Discussion: Though the performance between those that ‘make’ and ‘buy’ were not significantly different, analysing them within the same ‘make’ category do show differences when compared to where they get their supply from. Getting from supplies from low-cost producing countries seem to show better performance (category 3). But the majority had their resources supplied within the country confirming the fact that because resources are available in Malaysia perhaps that was one of the main reason of setting up the manufacturing plant in the country. The percentage of supplies coming from high and low cost supplier country category were about 11.5 and 10.4% respectively. Rationally sourcing from low cost producers should improve performance but the fact that the difference was very small require further probing.

H3: there is significant difference between the performance of firms that ‘buy’ from different category of countries.

Firms that opted for the ‘buy’ strategy did not differ much from their preference of the source country with those that opted for the ‘make’ strategy. Malaysia was still the country that was the main supplier. The total number of countries that supply were more and these are as shown in Table .. below. Obviously Malaysia had the highest percentage.

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Table 6: Distribution of Supplying Countries for 'Buy' Option

COUNTRY	OPT1	OPT2	OPT3	OPT4	FREQUENCY	PERCENTAGE %
Malaysia	137	16	18	2	173	13.8
China	43	39	10	-	92	7.4
Singapore	37	12	6	-	55	4.4
Japan	13	21	10	-	44	3.5
USA	17	15	9	-	41	3.3
Germany	16	9	8	-	33	2.6
S. Korea	3	17	9	-	29	2.3
Thailand	9	14	5	-	28	2.3
Indonesia	12	11	1	-	24	2.0
UK	7	3	6	-	16	1.3
Vietnam	3	4	7	-	14	1.1
India	4	6	3	-	13	1.0
Holland	-	6	3	-	9	0.7
Ghana	3	3	-	-	6	0.5
Taiwan	-	3	3	-	6	0.5
Italy	-	6	-	-	6	0.5
Russia	4	-	-	-	4	0.3
Christmas	-	4	-	-	4	0.3
Australia	-	-	-	3	3	0.2
Switzerland	-	-	3	-	3	0.2
New Zealand	3	-	-	-	3	0.2
Jordan	3	-	-	-	3	0.2
Denmark	-	3	-	-	3	0.2
Ivory Coast	-	-	3	-	3	0.2
Norway	-	2	-	-	2	0.2
Others	-	-	-	72	72	5.7
Not Selected	-	120	210	237	576	45.1
Total	314	314	314	314	1256	100

Again the above countries were categorised accordingly as done in the previous analysis.

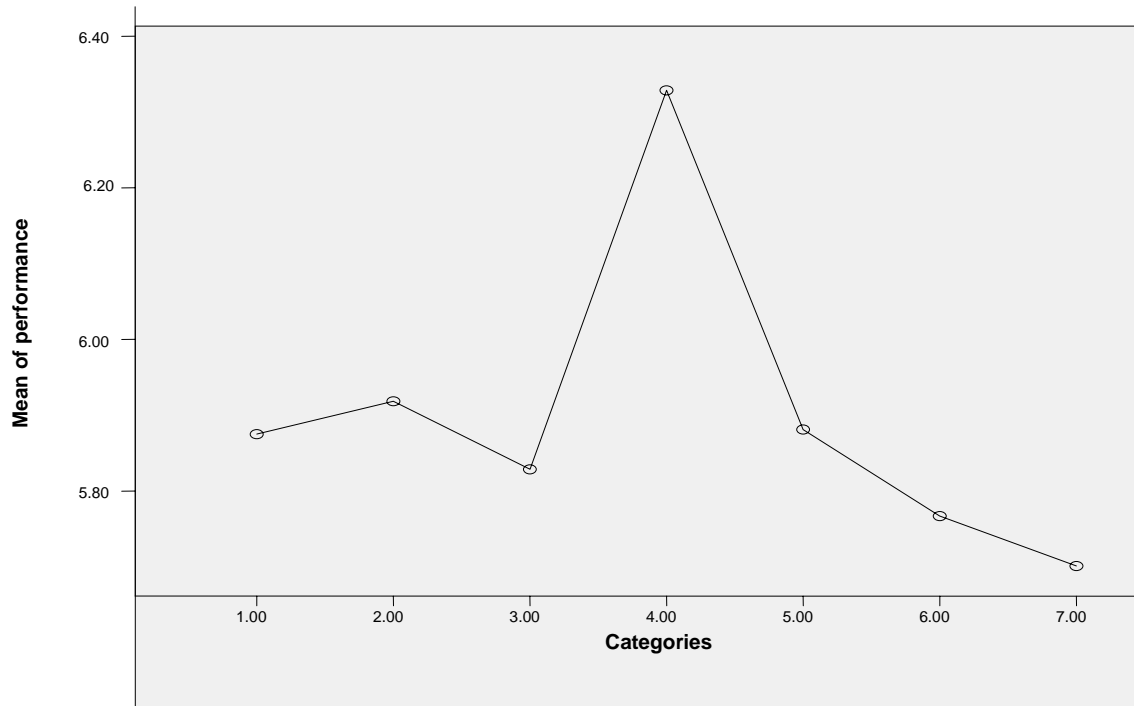
Table 7: Data According to Category

Group	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
1.00	24	5.8750	.49900	.10186	5.6643	6.0857	5.29	7.00
2.00	14	5.9184	.23583	.06303	5.7822	6.0545	5.71	6.43
3.00	20	5.8286	.48301	.10800	5.6025	6.0546	5.29	6.86
4.00	10	6.3286	.62106	.19640	5.8843	6.7729	5.57	7.00
5.00	12	5.8810	.26435	.07631	5.7130	6.0489	5.43	6.14
6.00	38	5.7669	.52349	.08492	5.5948	5.9390	5.14	7.00
7.00	43	5.7010	.35518	.05417	5.5917	5.8103	5.00	6.43
Total	161	5.8296	.46167	.03638	5.7578	5.9015	5.00	7.00

Table 8: ANOVA

Group	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	3.542	6	.590	2.974	.009
Within Groups	30.561	154	.198		
Total	34.103	160			

Chart 2: Means Plots



A one way ANOVA between-groups was conducted to explore the impact of sourcing destinations. Subjects were divided into seven groups of Sourcing countries as explained. There was a statistically significant difference at the $p < 0.05$ level in the mean scores for the seven groups $F(6, 154) = 2.97$. Thus this third hypotheses H3 is supported. Despite indicating statistical difference the actual value in the mean scores between the groups were quite small.

Discussion: The preferences of firms that opted for buy strategy is clear, where the majority would sought supply locally. There could be several reasons for such a behaviour. Some of the reasons are issues like small scope of competition, lack of information on availability of international players, lack of knowledge on how to affiliates with international players. The size of the firms, (as most of them would be categorized as small and medium – SMEs) could be an influential factor. These

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reasons are similar with the reasons given by firms with the make strategy orientation.

5. Conclusion

The study focused on the relationship between sourcing strategy (make and buy), the origin of supply and organizational performance. The general perception that outsourcing (buy) would result in better performance does not stick. Outsourcing would be beneficial depending on the scale of operations and the gap of operating costs with that of the outsourced firm. Of course performance will also depend on an array of other variables covering the wide scope of finance, marketing, operations and management. For firms that 'make', buying resources if needed, from low cost-producing countries is rationale. But there must be an understanding that the competitive advantage in doing so must be clear as buying from high-cost producing countries need not necessarily result in low performance (difference quite low). The buying from low-cost producers need to be coupled with other related costs as well as in risk, quality, transaction uncertainties and many more. If the latter are advantageous then perhaps outsourcing from low-cost could be advantageous.

For firms that 'buy', a similar scenario exist. A straight 'make' or 'buy' decisions based on the low-cost of production does not assure a better performance. The complicated determinants of firm's success require a much thorough probing into such strategic decision studies. Categorising them into different industrial sector and different sizes could be a future options. With the current globalisation trend, outsourcing the resources needed or the finished products, will still be an area of interest for many, but the framework for the analysis to determine its actual benefits especially for the small and medium industries have yet to be laid down clearly. The move towards clustering production facilities could also be another dimension to add.

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