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Benchmarking business practices in Swedish manufacturing firms

by

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Abstract

Regional benchmarking studies were conducted on business practices in manufacturing plants in three regions in Sweden. The studies were designed to determine their use of best practices and thus enable firms to identify areas in which they need to make improvements. The questionnaire contained around 200 questions to which 452 firms responded. In analysing the results, questions and responses were grouped into six categories. Two indices were developed. The studies classified firms scoring high as leaders, and firms scoring low as laggers. The studies showed *inter alia* that the gap in performance between leaders and laggers is particularly wide in Information & benchmarking and Innovation & technology. Conclusions are that improving benchmarking processes is a strategic step towards improving the firm's business practices.

Keywords: Benchmarking, business practice, manufacturing

1 Introduction

There is a link between business practices adopted and performance (Nelson and Winter, 1982; Davies and Kochhar, 2002; Yasin, 2002). Those businesses that adopt a coordinated and cooperative approach to development generally outperform firms that do not follow this approach. A coordinated and cooperative approach has often been denoted "best practice" (Davies and Kochhar, 2002; Knuckey and Johnston, 2002). The logic behind best practice is simple: It is based on the firm's distinctive capabilities, which enable good operational outcomes, which in its turn leads to improved competitiveness (Barney, 1997; Voss, Ahlstrom et al., 1997). In the past few years, the notion of "best practice" has increasingly become recognised to be a moving target over time (Perry, Davidson et al., 1995; Jarrar and Zairi, 2000; Kyrö, 2003). Furthermore, best practice is now considered to be context specific (Davies and Kochhar, 2002). In attempting to manage the complex relationships between and within firms, there is no single set of "best practices" – there are too many variables. Still the basic logic linking practice – capabilities - outcomes – and competitiveness is not in question. When some practices are jointly adopted they appear to provide firms that with an advantage over those that do not adopt them

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(Lamming, 1996). Practices can be viewed as best practice that 1/ have been shown to produce superior results in firms, 2/ are selected through a systematic process, 3/ are judged by expertise as exemplary and 4/ have been demonstrated to be successful in many organisations (Jarrar and Zairi, 2000). Practices demand continual reinvestment and development and constitute a learning experience (Fitz-Enz, 1992; Senge, 1990). Firms that apply best practices tend to be learning organisations.

2 The project

A Swedish group consisting of business interests, public authorities, and academia initiated in 2001 a number of regional studies of business practices in Sweden. They formed the network *Insights for Progress* (Insikter för framgång) to encourage the use of a common methodology and questionnaire and thus achieve comparability of results between regions in Sweden and between Sweden and other countries (Leigh & Wijkman, 2002; Sanner (ed), 2003). The project is based on a methodology developed by the New Zealand Government for its benchmarking studies for small manufacturing firms (Knuckey and Johnston, 2002). It is designed to determine manufacturers' practices and identify areas in which a firm needs to make improvements. The Swedish project is decentralised to a number of regions, reflecting the academic affiliations of the team members and their geographical areas of work. A guiding principle of the network is that each region is responsible for initiating and financing its own study and all regions use a common questionnaire and similar analysing procedures in order to ensure comparability between regions and countries.

The Swedish project encompasses manufacturing firms with 10 or more employees, measured in full-time employment[1]. The regional studies were initiated in the autumn of 2001 in the Västra Götaland Region and in Örebro county while the Dalarna county study was initiated in 2002 (Ahlström Söderling, 2002; Leigh and Wijkman, 2002; Sundqvist, 2002). In the counties of Dalarna and Örebro the questionnaire was distributed to all firms. In Västra Götaland it was sent to all firms in the four districts of Dalsland, Fyrstad, Norra Bohuslän and Sjuhärad.

The counties of Dalarna, Västra Götaland Region and Örebro represent an economically important swath of central Sweden. Manufacturing is strong and diverse in each of these regions. Dalarna County has old traditions in natural resource based industries such as mining, steel and forestry, but also in engineering. Firms such as ABB, SSAB, STORA ENSO and Avesta Sheffield, all have plants in the region. Västra Götaland has most of Sweden's textile and clothing industry, large fish and food processing industries, important steel and forestry plants, and key engineering firms, particularly in the transport industry including SAAB, Volvo and their many subcontractors. Örebro County, at the North-South, East-West crossroad of Sweden, has a varied industrial structure

[1] In accordance with Swedish statistics firms include autonomous workplaces (plant sites), even if they have their headquarters in some other region.

ranging from light to heavy industries. Ericsson, ABB, ESAB, Procordia Food and Ceralia are important firms in the region.

The projeect surveyed altogether 1,127 manufacturing facilities and received a total of 452 responses (a response rate of 40%). The numbers of distributed questionnaires and number of responses in the different regions were as follows:

Region	Distribution	Responses	Response rate %
Dalarna	327	127	39
Örebro	304	153	50
Västra Götaland	536	172	32

3 The business practices model and indices

If we visualise a firm's capabilities and outcomes as a globe, we can picture business practices as segments of its base and international competitiveness as the ultimate goal (see Figure 1). Each segment needs to be in place and effectively linked with others in order to provide a strong foundation. The absence of one capability may make the whole break down, thus threatening competitiveness and stability. Firms that are successful in achieving this leverage of capabilities are learning organisations.

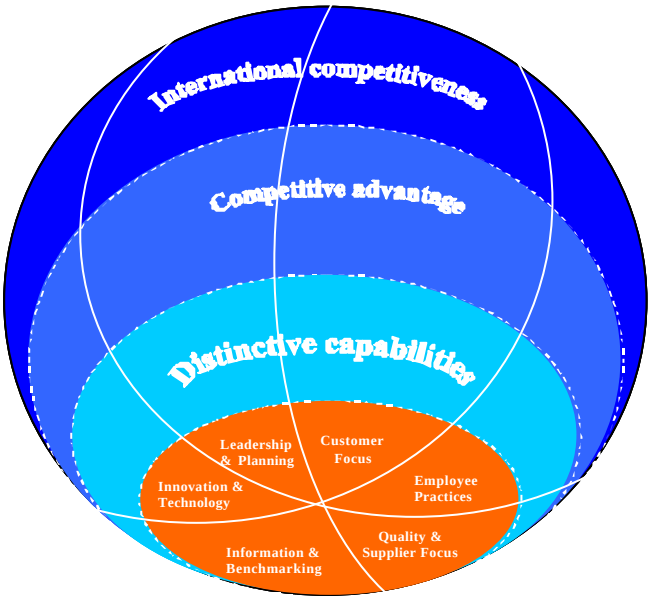


Figure 1. Firm foundations

In designing the survey questionnaire, we adopted and adapted the business practices model uased in New Zealand studies for two reasons (Knuckey and Johnston, 2002; Sanner (ed), 2003). Firstly, the model had worked well in practical surveys. Secondly, it made comparisons possible between Swedish and New Zealand data. The 2001 survey model comprises the following key modules or components (ibid):

- Structure
- Strategy and strategising
- Practices
- Outcomes
- Business results

Structure denotes data of size and industry. Strategy relates mainly to the choice of products, markets, positioning and focus. The traditional list of competitive priorities was examined: i.e. cost, quality, flexibility, delivery and innovation. Strategising encapsulates leadership and planning activities in the firm. It examines the nature of direction setting, whether it is long-term and consultative, and whether it facilitates firm culture and values, and the relationship of the business with its community. Structure, strategy, strategising, practices and outcomes are obviously inter-related. The inter-linking of these components represents the dynamic nature of business, where components rarely operate in isolation in the long run. For example, the focus of practices built up by the firm often reflects its business strategy.

Respondents to the comprehensive survey questionnaire were asked questions on each element of the Business Practices and Performance Model (see Figure 2). Questions on strategising and practices required subjective responses while questions that examined operational outcomes in some cases required quantitative responses.

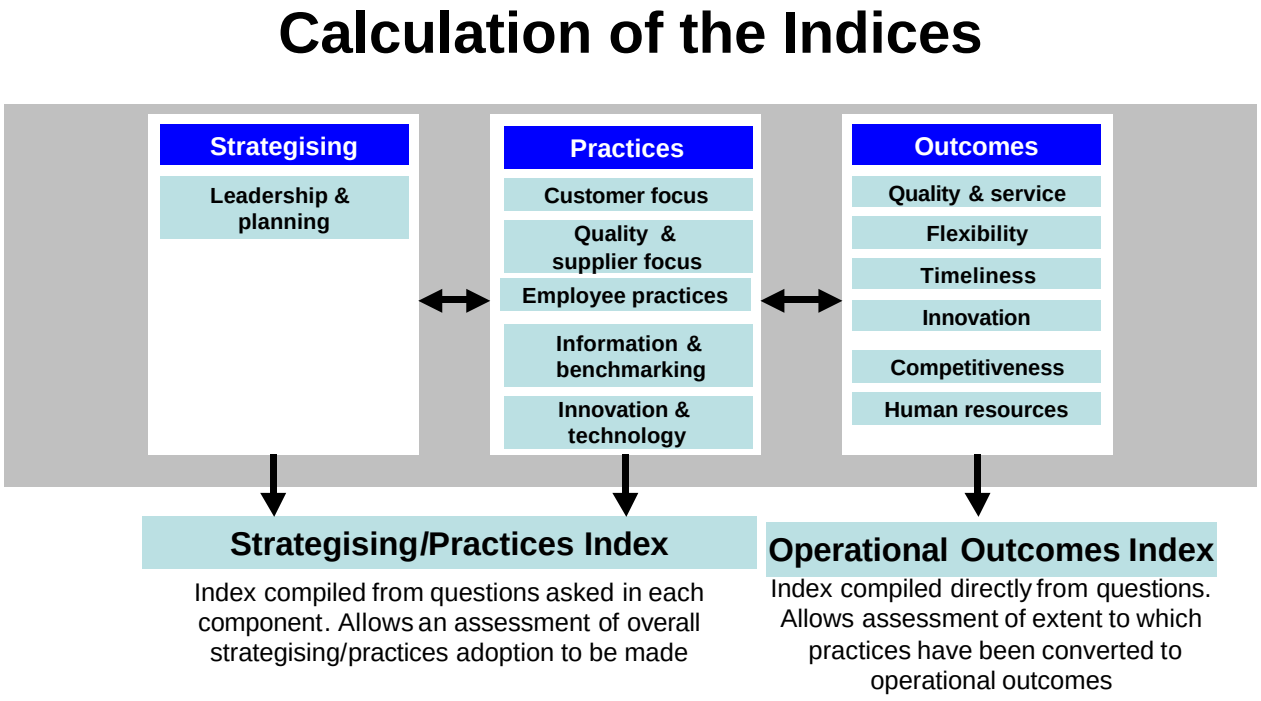


Figure 2. Calculation of the indices

Questions were generally based on a Likert-type (rating) scale, with the response to each question then scored on a range between zero and one with the "worst" answer given the value of zero and the "best" answer a value of one. A similar scoring system was used for questions on operational outcomes. The number of questions in the questionnaire was around 200.

In analysing the results, questions were grouped into six categories of processes: Leadership & planning, Customer focus, Quality & supplier focus, Employee practices, Information & benchmarking, and Innovation & technology. These scores were then summed for each firm across the different practices. Each practice score was standardised to give it a value of 100. The six practice scores were then summed and standardised to provide a single score out of 100 for overall practices. The same procedure was applied for operational outcomes scores.

This scoring system resulted in two main indexes (see Figure 2).

- The strategising/practices index provides an overall assessment of an enterprise's efforts to achieve business improvement
- The operational outcomes index provides an overall assessment of the extent to which practices have been converted into operational outcomes.

When assessing the progress of a firm, both indices are considered simultaneously. Businesses with high scores in strategising/practices have made the most progress in adopting the full range of these practices. If they also have a high score on the operational outcomes index, this indicates that their practices are being converted into outcomes.

The performance of each firm studied can be shown by plotting its position on a set of axes representing Business practices and Operational outcomes. The graph of the distribution of firms according to their scores is shown in Figure 3.The horizontal axis represents the strategising/practices index values, and the vertical axis represents the operational outcomes index values. The closer a plant is to the top right-hand corner of the graph, the more likely it is to be achieving sustainably competitive performance. This shows the expected "oval" form indicating that good outcomes are associated with good practices.

4 Results

4.1 Overall findings: Good practices pay off

The results of the study shows that practices do matter. Firms that have better practices have better outcomes. The regression line shown in Figure 3 has a slope of 36.5 and an intercept of 42.5 and, as expected, confirms that as the methods of running a business improve, so does a firm's performance.

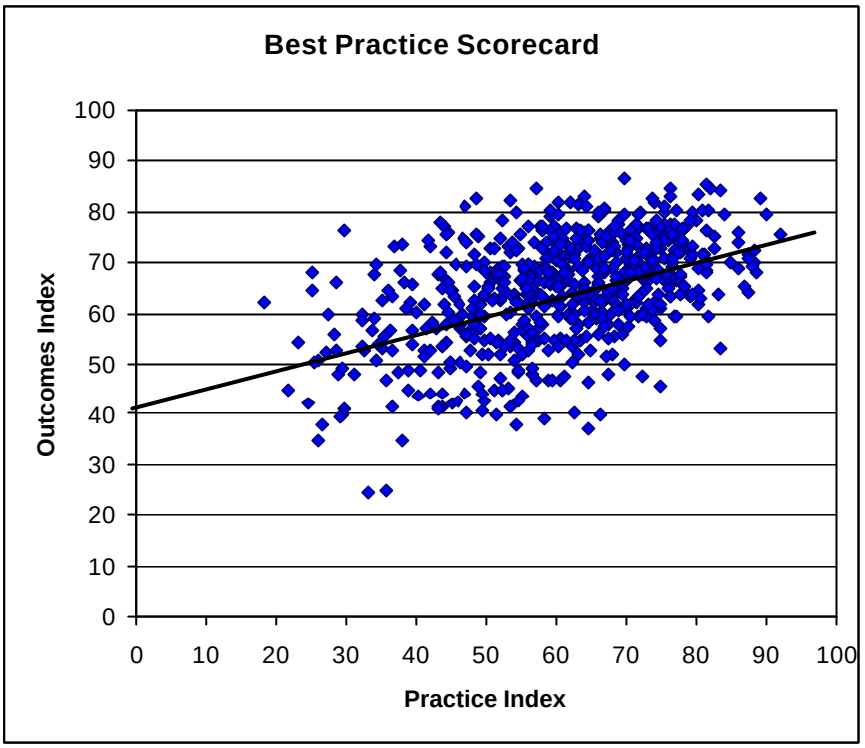


Figure 3. The best practices scorecard for three regions of Sweden

Figure 3 also shows a wide scatter of both the application of best practices and their effectiveness. This indicates that firms could learn a great deal from one another about management competence and good practices, especially those groups that deviate significantly from the regression line could benefit. Two groups of firms are of particular interest and are considered below.

4.2 Leaders and laggers

We defined firms scoring in the top 20 % of both indices as leaders. Laggers score in the bottom 20% of both practices and outcomes indices. Leaders and laggers represent the best and the worst firm situation of firms, respectively. Leaders perform well in all of the best practices. Leaders are not merely using best practices but they also use them effectively. Other manufacturers should try to emulate their business success. Laggers, on the other hand do not have well-applied practices and may have problems in performing effectively in the market place. They need to improve their practices in order to catch up with the leaders. In the study 38 firms (6%) scored as leaders and 57 firms (9%) scored as laggers.

4.3 What sets off leaders from laggers?

Wide competence gaps exist between leaders and laggers (Figure 4). Leaders score more than 150% higher than the laggers. Laggers are closest to leaders on the two indices in which the manufacturers excel, namely Leadership & planning and Quality & supplier focus. By contrast, leaders score an astonishing three times better in Innovation & technology and in Information &

benchmarking than laggers. These are the two indices in which Swedish manufacturers tend to show relatively low scores, suggesting interestingly that these two practices are a distinguishing feature of leadership. To be a leader it is necessary to excel in Innovation and Benchmarking.

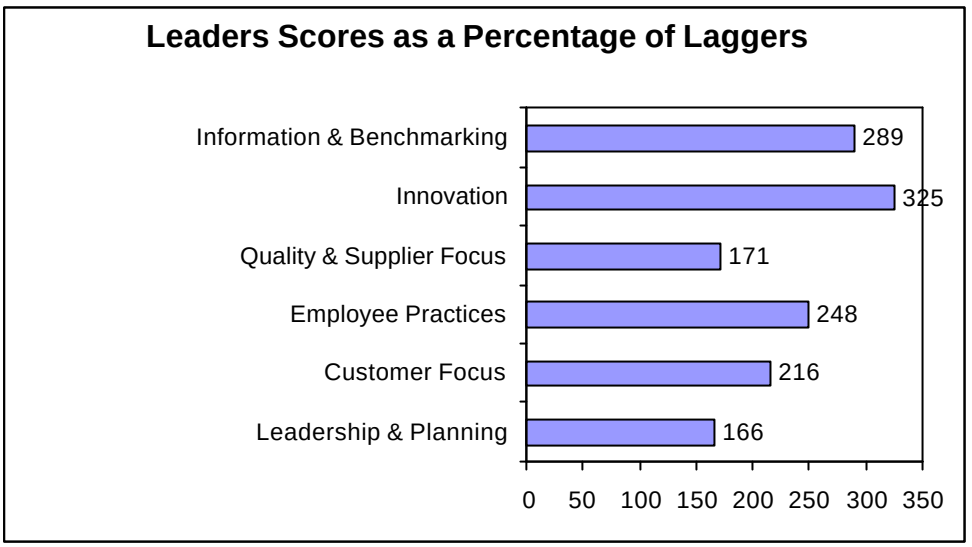


Figure 4. Leader scores as a percentages of lagger scores

The laggers' group is almost exclusively made up of small firms. Not a single large company is classified as a lagger. The predominance of small firms in the lagger group makes it more difficult to assess the implications for manufacturing in the regions, since there could be many reasons for the lack of success. One possibility is that laggers represent firms that have recently started. They are at the beginning of their learning curve, and they struggle to make it through the first years before they have acquired sufficient business experience. In Sweden as elsewhere, there is a high rate of failure of new businesses. Laggers need to find the causes for their poor outcomes and take corrective action to ensure survival in the market.

4.4 A characteristic asymmetry between leaders and laggers

A characteristic asymmetry appears in the business practice profile. In each group, firms tend to be relatively better at Leadership & planning and Quality & supplier focus than at Customer focus and Employee practices while they are significantly worse at Information & benchmarking and at Innovation & technology. A stiking exception is leaders, which are about equally good in all practices. By contrast, laggers are especially bad in Information & Benchmarking and in Innovation & technology. The next subsections consider whether firm size, export orientation or industry branch can explain the asymmetry or the level of the business practice scores.

	Leaders	Laggers
Leadership & Planning	91	55
Customer Focus	85	40
Employee Practices	75	30
Quality & Supplier Focus	88	52
Innovation & Technology	72	22
Information & Benchmarking	74	25

4.5 Size does matter

The study results support the conclusion that there is a strong relationship between differences in formalised business practices and firm size. A much smaller share of small and medium-sized firms than of large firms are leaders.

- 414 (63%) are small sized firms and 19 (4.5%) of those are leaders. Small firms practice scores begin at 18.
- 181 (27%) are medium sized firms and 8 (4.4%) of those are leaders. Medium firms practice scores begin at 41.
- 64 (10%) are large sized firms and 11 (17.2%) of those are leaders. Large firms practice scores begin at 52.

The figures indicate a difference between the three size groups: small, medium and large firms. Small firms practice score begins in the lagger range. Medium-sized firms do not have a practice score below 41. Large companies practice scores begin at 52. The reason for this relationship between size of firm and effectiveness may be that firms that are larger and, by definition, more difficult to manage have to employ more formalised best practices to maintain control, quality and direction. A few key managers cannot pay sufficient personal attention to all areas of the business. They need procedures to ensure that the business is run properly without their close supervision. Practices act as an organisational substitute for personal management. Using good practices means having administrative procedures in place to ensure that decisions are taken in an appropriate way at a lower level in the organisation. It often means that authority for various tasks is delegated to those who perform them. This frees up the key decision makers so that they can focus on the most important information and make strategic decisions.

Small firms do not suffer from the same command and control issues as large firms, since management's span of control is narrower. Good personal management is often sufficient for small firms and there is no need for formalised procedures. Furthermore, many small firms have outcomes that are indistinguishable from the leaders group. The "high outcome" small firms are most likely to be the "niche players". They are small and nimble enough effectively to serve markets that larger firms may find unprofitable to tackle. Clustering may also be a positive factor. Having many small firms of a similar type in a region may create large external economies, such as an informal transfer of competence between them or the ability to take advantage of innovations emerging in the industry. These external economies help firms compensate for the lack of extensive internal practices.

	Small	Medium	Large
Leadership & Planning	72	81	99
Customer Focus	60	71	77
Employee Practices	54	64	73
Quality & Supplier Focus	70	78	87
Innovation & Technology	50	50	67
Information & Benchmarking	44	56	71

Although small firms can be found all over the scorecard, the median scores for each group show the direct link between the number of employees and the general degree of utilization of best practices. For each practice, the median score increases with firm size. However, as mentioned earlier, being small is not in conflict with being good. The majority of leaders are small manufacturers.

A good firm is likely to grow in size over time. As the small firm grows, the entrepreneur will find it more difficult to keep his firm performing efficiently and effectively. Therefore, any small or medium-sized enterprise that plans to grow will have to implement best business practices as well. The performance of the firm will otherwise suffer. In brief, a key part of any successful growth strategy appears to be to have best practice systems in place in advance. The increased demands that the larger size places on a firm can thereby be accommodated. There may be a survivorship bias for large firms in the data. It takes time for small firms to grow into large companies. Firms that are not well run will tend to leave the market. Natural selection that leaves the worst behind will then occur. The large companies that did not have strong enough practices probably did not survive and are therefore not in the study.

Just like leaders, large companies score much better than others in the two indices of Information & benchmarking and in Innovation & technology. Large companies perform better than both middle-sized firms and especially small firms in the two practices. Small firms may be able to work without focusing explicitly on Innovation & technology and Information & benchmarking for a time, but this survey does not tell us how they would fare in the long term. Will they recognize emerging changes in their markets in time? Will they be able to manage those changes? Ultimately, all firms face these problems, but larger firms generally have more resources to benchmark and to innovate.

4.6 Export success related to business practices

Exporters face many challenges that firms serving the local market do not. One is simply distance from the market. The further away the foreign market is from the firm's head office or production plant, the more difficult it will be to meet the needs of that market. Local producers abroad also have transport cost advantages and a greater familiarity with the local market. This means that, to be able to compete effectively in foreign markets, some sort of advantage is needed to overcome the relative advantages of local producers in the foreign markets. Figures below show that the more firms export have the better business practices they have.

Export level	0%	<50%	>50%
Leadership & Planning	73	75	82
Customer Focus	58	65	71
Employee Practices	53	59	66
Quality & Supplier Focus	65	72	83
Innovation & Technology	39	50	61
Information & Benchmarking	40	50	63

In particular, exporters score much better in Innovation & technology and Information & benchmarking practices than non-exporters, although the scores are not high. It is indicative of the challenges faced by exporters that the more of their product they export, the greater the attention they pay to best practices. The higher the proportion of exports, the higher their scores in all of the practices.

Any firm that wishes to enter foreign markets or expand its activities there would be wise to implement best practice systems. Best practices help provide the necessary skills, cost savings and capability to compete in foreign markets. They represent many of the invisible factors that determine international success. Success can emerge irrespective of what a firm produces, or where it produces it, or how large it is. The use of best practices is therefore a strong indicator of a much wider range of good "qualities" of the firm. These qualities make its products competitive in foreign markets.

There are roughly equal percentages of leaders in each of the two groups that did export. As can be seen below, while only 2.7% of purely domestic firms are in the leaders group, 6.3% and 7.1% of the firms in the two exporting groups were leaders. Thus, competitive edge that allows exporters to compete successfully must be developed early. Both groups of exporters in the leaders group have such a competitive edge.

- 111(17%) of firms do not export at all and of those 111, only 3 (2.7%) are leaders.
- 381(58%) of firms export up to 50% of their production and of those 381, 24 (6.3%) are leaders.
- 156 (24%)of firms export over 50% of their production and of those 156, 11 (7.1%) are leaders.
- 11 firms did not know or did not answer this question.

4.7 Innovation and Benchmarking: Achilles heel of the Swedish firms in the study

Innovation & technology - the source of new methods of production and of new products and services – are the weakest index results in the regions studied. The typical scores above is around 50. Only the leading, large companies and export-orientated firms scored well in this index. Why are the Innovation & technology scores so low? More investigation and research is needed to answer this important question.

What external sources are important for ideas about innovation? The firms surveyed were asked to rate a number of sources by degree of both importance and unimportance. (See Figure 5). Most manufacturers considered competitors and other companies as important sources of ideas on how to improve products and processes. They find them important to keep on top of trends in the industry. Very few consider competitors or associated companies to be unimportant. Also note that the relative importance of associated companies as a source of ideas for innovation differs significantly depending on whether the parent company is Swedish-owned or foreign-owned. If it is foreign owned rather than Swedish owned, fewer think an associated company is important as a source of innovation and more think it is unimportant for a subsidiary located in Sweden. In this light, the ongoing transfer of ownership of plants in Sweden to foreign companies has ominous implications for innovation. In addition, very few firms regard the state, state supported agencies and industrial associations as being important to innovation. Actually, a large majority considers these institutions to be unimportant. This observation deserves further investigations before the serious implications can be determined for local and central government policy as well as for industry and employer associations.

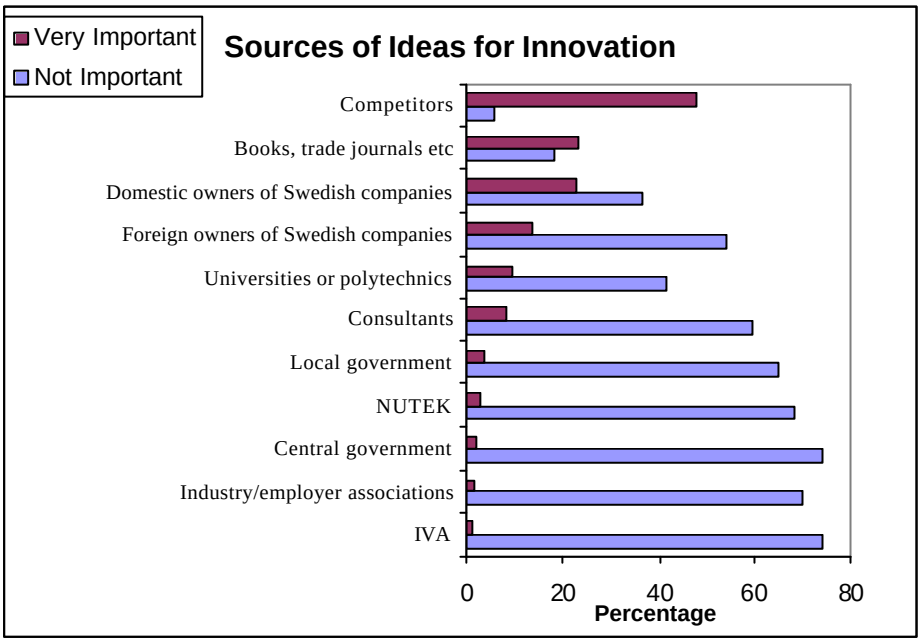


Figure 5. Sources of ideas for innovation.

Even if there were no shortage of ideas for innovation there may well be barriers to innovation that prevent the ideas from being fully exploited.

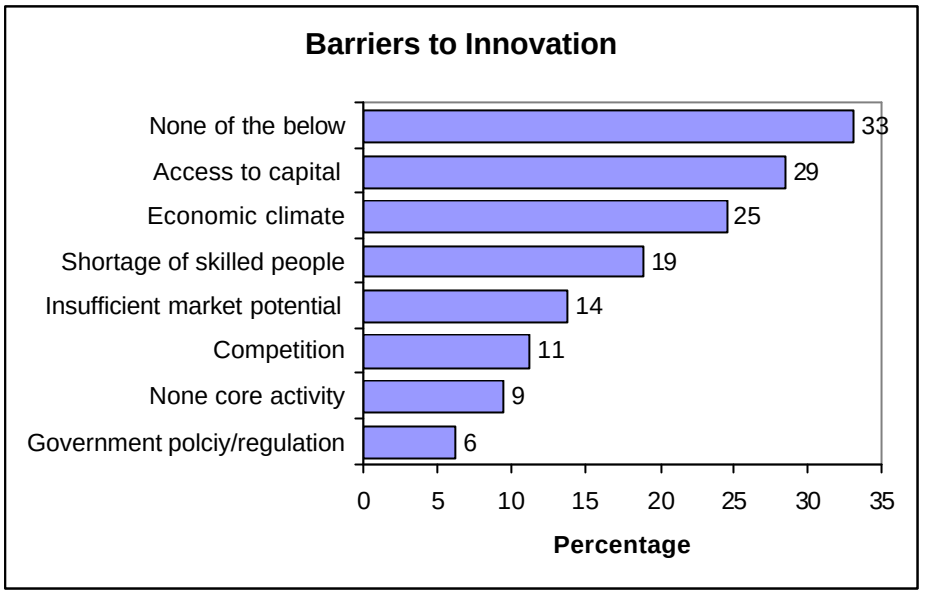


Figure 6. Barriers to innovation

As many as one-third of the respondents indicated that none of the barriers identified in the survey were of significance. Either they do not perceive there to be any significant barriers to innovation or the really important barriers were not identified in this question. While one-third of Swedish manufacturers may feel free to innovate as many as two-thirds do not. How can the barriers experienced by the two-thirds be overcome?

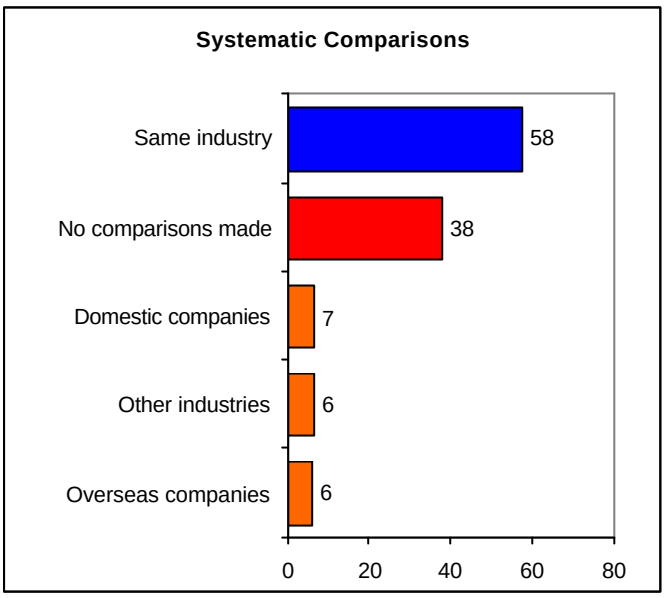
Three major barriers to innovation were identified by many of the respondents. The most important is access to capital. Current market conditions following the bursting of the dot com bubble have reduced the amounts of capital of available for investments. Banks and other institutional lenders have become more risk-averse in an effort to preserve the quality of their portfolios.

The economic climate is the second most important barrier to innovation. The stagnant economy during the study period may have caused firms to postpone or scale back investments that otherwise would have been made.

Shortage of skilled people is the third significant barrier. Responses of firms indicate that the labour market in the manufacturing sector is malfunctioning. New graduates and skilled labour are needed to fill new positions in addition to the natural transfers within industries. The shortage of skilled labour suggests that present educational and vocational training systems are insufficient to meet the needs of industry. The various bodies set up to help Swedish manufacturing should then be looking at ways of addressing these skill shortages.

Benchmarking is related to all other practices, and to innovation in particular. Hence the low scores in benchmarking give cause for serious concern. In all three regions studied, firms were found to benchmark infrequently. 38% of the firms were simply not doing any sort of systematic comparison at all (Figure 7). Those comparisons that firms did make tended to be only financial comparisons with key industry players (Figure 8). While financial comparisons (measuring sales, turnover, profitability etc) can give a great deal of information on the

relative costs and performance of a firm overall, they do not indicate how those results were achieved.



Figures 7. Percentages of firms making systematic comparisons.

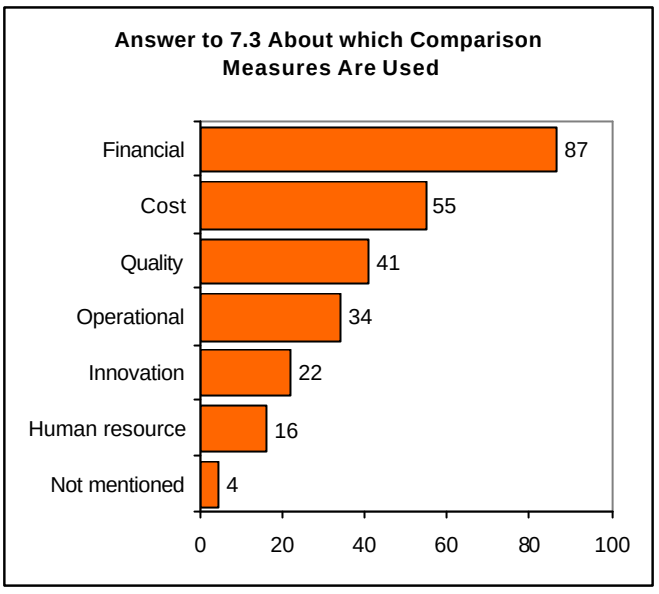


Figure 8. Types of comparisons made.

It is encouraging that among those firms that do systematically benchmark, relatively high percentages pay attention to cost, quality and operational measures as well. This gives them a much better picture of how they compare and can go a long way to identifying reasons for the success or failure of a firm.

Good benchmarking entails costs and challenges. That includes designing appropriate measures to use, finding the data suitable for these measures and determining procedures for processing data and analyzing it. If any one of these steps is poorly performed it can seriously undermine the value of the entire effort. Large companies in particular can benefit from benchmarking. Breaking down the data in Figure 8 by firm size and leadership ability shows that both leaders and very large companies systematically benchmark. (See Figure 9)

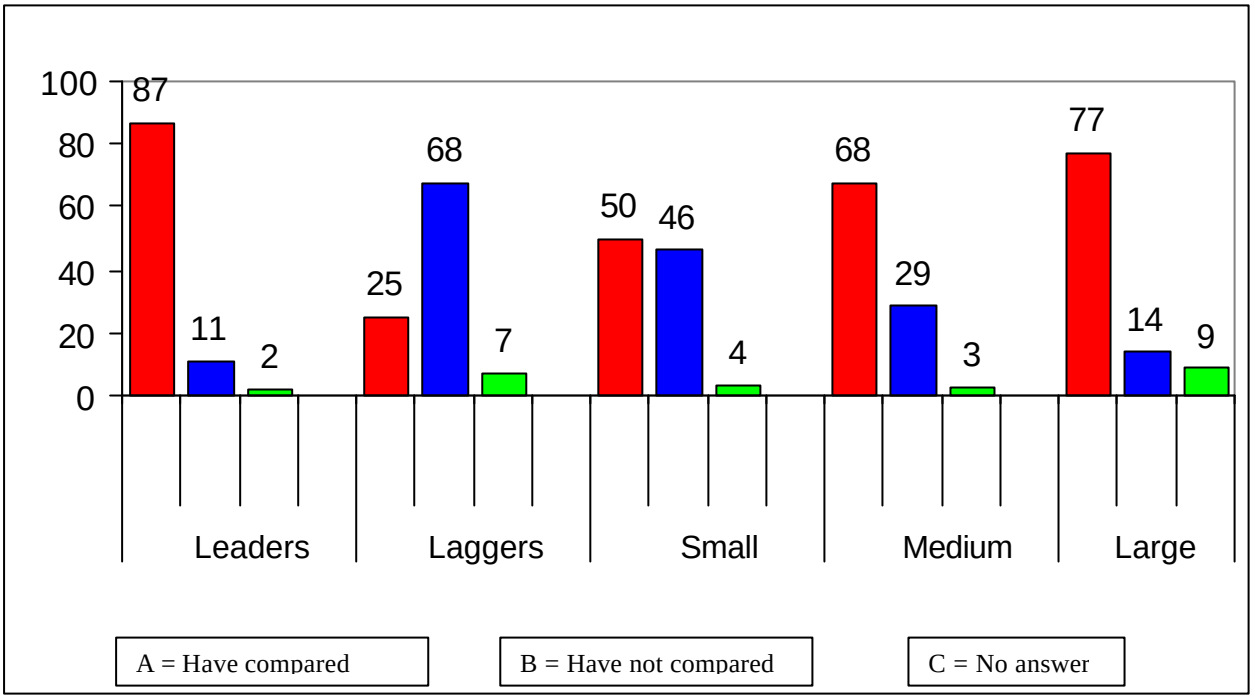


Figure 9. Firms' answers about their performance compared to the two criteria of rank and size that had the most positive effect on the frequency of benchmarking.

If benchmarking were exclusively a size issue, then only the largest companies would have decent scores, because only they would have the time and resources for it. However, the majority of firms classified as leaders are small and medium-sized firms and they have good benchmarking scores. So size is not the sole factor determining the propensity to benchmark. Nevertheless, the data does show a clear relationship between size and benchmarking.

Swedish firms in the study appear to assign insufficient value to the benefits of benchmarking and they therefore spend insufficient resources on it. In particular, they fail to appreciate the impact benchmarking can have on innovation, particularly on process innovation. It helps managers to focus on areas in which production performance is poor or areas in which small improvements can greatly impact the bottom line. For example, a good internal benchmark can identify production bottlenecks and allow managers to solve that problem.

Being a leader is a sign of success. Large size is the result of successful growth. Benchmarking is one of the two areas in which leaders and large companies outperform all others. It is logical to link success and benchmarking. Judging from this study, the manufacturing industry should pay more attention to benchmarking. The question is how it could be done. Regional or industry groups could create databases with a variety of measures from firms to which all could have access. Firms could then compare themselves to aggregate measures and hopefully be better able to assess the state and needs of their business.

5 Conclusions

The study provides a number of key results of importance to the manufacturing industry in Sweden and elsewhere. We believe that the conclusions below are worthwhile for manufacturing to consider also in other countries, since there are many similarities in the industry between different countries.

Judging from the three Swedish regions studied so far, best practices are generally in widespread use in the manufacturing sector. Being a combination of the key ideas essential to running a manufacturing business, they make an important contribution to success in the marketplace. The study indicates that best practices pay off.

Characteristic is a marked asymmetry in which firms score well in Leadership & planning and Quality & supplier focus and poorly in Information & benchmarking and in Innovation & technology. Such patterns in asymmetric practices may indicate that information and values are shared quickly among firms. This rapid speed of national adaptation could facilitate improving those business practices, which are deficient.

There is a significant difference between small firms and large firms, between exporters and firms serving the domestic market. Large companies and exporters both have better practices than small firms and non-exporters. Hence, most leading firms tend to be large firms and most lagging firms tend to be small firms. This suggests that good small firms may require best practices to export or to grow successfully. Indeed, since export is often necessary for growth in a small country, there is a two-fold need for best business practices. Exporters need best practices to offset the advantages of the local producers abroad with whom they compete. These local producers have better knowledge of the local market conditions, needs and customs, and have a transport cost advantage. Such a pattern shows the needs to foster export growth if the manufacturing sector is going to continue to be a source of jobs and income. In this aspect, best practices are an enabler of such growth, not the cause of it.

Innovation is weak and needs to be improved in the regions we studied. An important revelation of the studies is that leaders, exporters and large firms score well in innovation and in benchmarking, in addition to also being good in the other practices. This suggests that benchmarking and innovation are critical practices for being a leader. Innovations give producers product and production advantages, which offset the extra costs of servicing foreign markets. Benchmarking allows keeping track of how well the firm's own processes compare with changing conditions in foreign markets. Improved benchmarking practices are thus likely to be an important tool to increase business practices vital for exports.

Another conclusion is that external barriers to innovation exist. These results would probably differ between countries. In order of importance, the barriers

identified in this study were access to capital, the economic climate and difficulties in finding skilled labour. More barriers were perceived but not clearly identified by responses, and these need to be investigated further. In particular, it would appear to us necessary to increase the synergies between a firm's research and development, the local university centres of excellence and to improve the reward/risk structures. This will require intensified cooperation between firms, academia and local and central government.

Finally, the studies allow conclusions concerning management. In order to be world class firms must do equally well in all practices. Leaders were strong in all six of the practice indices. This is in line with earlier findings that the use of best practices results in strong outcomes (Voss, Ahlstrom et al., 1997; Davies and Kochhar, 2002; Yasin, 2002). Benchmarking is an important instrument for ensuring that a firm does well in all business practices. Hence, it helps establish the holistic approach to management, which is necessary if a firm is to succeed in becoming a leader (Ahlström Söderling, Lindhult et al., 2003). The studies provide a good diagnostic tool to identify which individual firms might benefit from improving their business practices.

A main implication of the study is that benchmarking the practices of a firm is probably the most strategic step towards improving the firm's practices (cf Fitz-Enz, 1992; Normann & Ramirez, 1998). This highlights the need of the firm to develop a systematic way of handling benchmarking information. Benchmarking needs to be applied regularly and encompass all practices. There is also a need for systems that enable comparisons to be made at the aggregate levels of industries, regions and countries. We hope this article will promote benchmarking cooperation between firms, academia and local/regional government. Governments and business organisations need to consider what contributions they can make. International cooperation should then lead to valuable comparisons between countries.

6 Further outlook

The *Insights for Progress* studies continue. A second survey three years after the first one is planned in the regions and will display how the firms may have changed over time in terms of practices. So far every firm has got feed-back concerning its scores and relative positions in its industry based on the first survey. As a follow-up, a large number of firms have participated in discussions and interviews concerning benchmarking. New forms of contact between industry, academia and different levels of government have emerged.

The researchers' experience and the collected database have induced spin-off studies. Prerequisite for growth and competitive advantage (Ahlström Söderling, 2003; Fölster and Ahlström Söderling, 2004), dependence and vulnerability and trust among suppliers to industrial customers (Sanner, 2003a; Sanner, 2003b), innovation in building supply companies (Larsson and Sundqvist, 2003), information technology resources (Sundqvist, Sanner et al., 2004). Information from benchmarking studies is thus an asset for research and development with potentials that go beyond its primary purposes.

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