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Strategy development by small scale industries in India

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Abstract

Purpose – In the present scenario of e-globalization, small scale industries (SSIs) are considered engine for economic growth all over the world. After markets globalization, SSIs are facing many pressures and constraints to sustain their competitiveness. The purpose of this paper is to examine various issues in context of Indian SSIs such as nature of pressures and constraints, competitive priorities, competencies development, areas of investment, and their relationship with performance.

Design/methodology/approach – For collecting data, a questionnaire-based survey was conducted. In total, 75 valid responses were received. Statistical analysis of data acquired from survey is done by reliability test, *t*-test, and correlation analysis.

Findings – Cost reduction, quality improvement, and delivery in time have emerged as major challenges for SSIs. Market research, welfare of employees, and research and development are found as major areas for investment. Use of information technology, training of employees, and research and development has significant relationship with performance.

Research limitations/implications – Organizations should develop their strategies after analysing business environment and SSIs should utilize their resources judiciously. However, it is felt that this study can be further explored by considering other aspects of strategy development such as human resource, vendor development, organization culture, etc.

Originality/value – Findings and issues of the paper will be highly useful for SSIs in framing their strategies, and academia for further research in the context of changing market scenario.

Keywords India, Small enterprises, Competitive strategy, Business development, Product management

Paper type Research paper

1. Introduction

In India, 95 percent of industrial units are in small-scale sector with 40 percent value addition in the manufacturing sector and 6.29 percent contribution to the Indian gross domestic product (Singh *et al.*, 2008b). In most of the countries, small scale industries (SSIs) are defined in terms of number of employees whereas in India, investment in plant and machinery is the criteria for defining SSIs. In India, the size of SSIs is defined

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as industries having investment in plant and machinery less than Rs 50 million (US$ = Rs 50) and for medium-scale enterprises this limit is Rs 100 million (SIDO, 2005). In India, organizations having investment up to 100 million rupees are also commonly referred as small and medium enterprises (SMEs). As investment limit does not differ significantly therefore they have quite similar characteristics. The major challenge for SSIs is to continuously provide innovative and customized products using the best available process technologies. Improvements in competitors' capabilities have shortened product life cycles, elevated product complexity, and expanded accessibility to new technical breakthroughs. Therefore, firm's competitiveness will depend on its ability to provide goods and services more efficiently than others involved in the market place.

Ngai and Wat (2002) argue that globalization and information technology (IT) are radically changing the face of business and organization. IT has become the major facilitator of business activities today. Management activities, which were time consuming earlier, are taking far less time and effort in IT-enabled globalization. The presence of IT tools deemed the geography and physical distance of no importance. This IT-enabled globalization is called as e-globalization. Abouzeedan (2005) defines it as the phenomenon related to the establishment of commercial and cultural contact between people, firms and nations using, extensively, methods of modern IT tools. Now, IT is being used in all aspects of business activities including sales and marketing, purchasing, financial transaction, accounting, production, and planning and control. It has also become essential tool for managing the supply chains. Information is improving the speed and reliability with which information is passed not only within the individual organization but also around the globe. E-globalization is creating new brand experiences for customers, suppliers and business partners. Now markets have become more transparent.

In the present era of e-globalization (Abouzeedan, 2005), many large organizations all over the world have been focusing on their core business, down sizing and outsourcing. This trend has given many opportunities for SSIs to work in partnership with them and expand their market. Business success depends on the formulation and implementation of viable strategies (Pun *et al.*, 2004). By improving product quality, organizations can accumulate multifaceted competitive advantage in terms of cost and service (Prajogo, 2007). Small firms with limited resources, perceive its business environment differently from that of large firms (Gyampah and Boye, 2001). Owing to limited resources small firms are not able to devote sufficient resources and time for developing strategies to sustainable growths. There are very few studies aimed at strategy development by SSIs for competitiveness specifically in developing countries including India.

The initiation of economic reforms through industrial and trade liberalization in 1991-1992 marked the beginning of a new era for Indian industry. The measures included: industrial delicensing, the removal of threshold limits on the assets of large enterprises, liberal foreign investment policy, the expansion of the open general license list, reductions in customs duties and so on. This implied easier entry and more operational freedom, as well as cheaper and easier access to imported inputs and capital goods for large enterprises. After the opening of Indian economy, scenario for Indian SSIs has changed from protective to competitive environment (Singh *et al.*, 2008a). Sustainable growth in globalized market has become a big challenge for SSIs.

The remaining part of the paper is organized as follows. Section 2 discusses the literature review. Section 3 discusses about research methodology. Section 4 discusses about findings from questionnaire-based survey on Indian SSIs. Finally, concluding remarks are presented in Section 5.

2. Literature review

Today's intense competition requires that firms excel simultaneously in several areas without trade-off, including innovativeness and responsiveness to their customers. Rise in global competition has compelled the firms to increase performance standards in many dimensions such as quality, cost, productivity, product introduction time, and smooth flowing operations. Different pressures on small enterprises are conformance to quality, i.e. low-defect rates, product features or attributes, competitive price and performance (Corbett and Campbell-Hunt, 2002). Capacity of a firm to maintain reliable and continuously improving business and manufacturing processes to meet above challenges appears to be a key condition for ensuring its competitiveness in the long run (Lagace and Bourgault, 2003).

In this complex business environment, small firms must develop themselves strategically in order to remain competitive, grow, and prosper (Mugler, 2002). Moreover, they must not only develop new product/market strategies, but also network strategies based on value chain integration and cooperation with key business partners (Fariselli *et al.*, 1999). According to Moore and Manring (2009), networked SMEs provide much financial and organizational efficiency that enable development of technologies and markets essential to achieve "sustainable development".

SSIs have commonly been categorized to be component manufacturers for larger companies, where they operate in the "make to order" or rather the "engineer to order" approach. It imposes rigid constraints on meeting changes in requirements at short notice. SSIs often are oriented towards serving local niches or developing relatively narrow specializations (Urbonavicius, 2005). They may have constraints due to the scarcity of resources, flat organizational structure, lack of technical expertise, paucity of innovation, occurrence of knowledge loss, etc. The flat structure of SSIs can often leave employees frustrated because they are often unable to realize their short and mid-term career goals. That is why SSIs may find it difficult to employ high-caliber staff and even harder to retain them. Major constraints on small firms in meeting the challenges of competitiveness are:

- resource scarcity can impact on the ability of smaller firms to enter export markets (Moen, 1999);
- time and effort to incorporate telecommunications in their business as principal barriers to adoption of IT (Chappell and Feindt, 2000);
- lack expertise, time, money, and support to upgrade their current manufacturing operations (Gunasekaran *et al.*, 2001);
- excessive cost of product-development projects (March-Chorda *et al.*, 2002);
- less likely to survive or quickly overcome a failed implementation of an expensive enterprise resource planning (ERP) system (Muscatello *et al.*, 2003);
- unable to meet the demand for multiple technological competencies (Narula, 2004);

- information gap between marketing and production functions as well as lack of funds for implementing expensive software such as ERP system (Xiong *et al.*, 2006);
- shortage of qualified human resources is also considered a critical bottleneck in SMEs businesses (Korea Federation of Small Businesses, 2003); and
- problems in initiation of the innovation and protection of intellectual property (Stokes, 2002).

For sustaining their competitiveness under pressures of e-globalization, strategy should match to organization resources, changing environment and in particular markets and customers needs (Porter, 1998). According to Kerr (2006), SMEs should develop strategies that incorporate sustainable development, and that the resulting skills would guide them to act in a sustainable way. A firm's competitive strategy specifies the potential products and markets, long-term objectives, and policies for achieving the objectives. Organizations must continuously review their manufacturing strategies to identify the aspects of market priority, product structure, manufacturing configuration, and investment (Silveira, 2005). Improvement programs should match operational goals and objectives (Raymond and St-Pierre, 2005). Building core competencies becomes essential for long-term competitive advantage because advantages emanating from the product-price-performance-tradeoffs are almost short term (Kak and Sushil, 2002). Chaston *et al.* (2001) have observed that the areas of competence concerned with new product development, human resource management practices, organizational productivity and the management of quality and information.

In such a challenging environment, the capacity of a firm to maintain reliable and continuously improving business and manufacturing processes appears to be a key condition for ensuring its sustainability in the long run (Denis and Bourgault, 2003). Vos (2005) has observed that managers of small-scale firms have poor skills in reflecting upon their companies strategically. SMEs, which link operations to their business strategies, outperform the competition. According to Corbett and Campbell-Hunt (2002), companies should focus their energy and resources on innovative product and its niche. As SSIs are faced with unfamiliar products and processes on a fairly regular basis, they must develop innovative strategies to meet the changing customer expectations.

According to Chanaron and Jolly (1999), global competitive strategies are increasingly becoming technology driven in the context of extremely dynamic and turbulent environments. Technology operates on competitiveness in two ways. First, by altering the price structure through the development of more efficient and flexible processes and second by enabling the creation of better products of greater quality, better design, after sales service and short delivery periods, etc. (Vinas *et al.*, 2001). Capkun *et al.* (2009) have observed the correlation between inventory and financial performances.

With the strong waves of globalization and liberalization across the world, IT is believed to be the most cost-efficient tool to help companies gain bigger markets and the ability to compete with larger organizations in attracting customers to their products, services and information (Tan *et al.*, 2009). Manufacturing performance of SMEs can be improved by the use of the most appropriate IT tools in different manufacturing operations (Singh *et al.*, 2008b). Several studies (Lal, 2004; Hodgkinson and McPhee, 2002) have found that users of advanced e-business technology perform better

than non-user in the export market. However, investments in e-business technology alone are not sufficient to improve business performance, especially if they are not coherent with the business environment and strategic objectives of SMEs. To this end, these enterprises must improve their technology management capability, and thus they must receive support from researchers and knowledge-transfer agents (Morgan *et al.*, 2006; Raymond and Bergeron, 2008). Other areas of investment may be research and development, automation of processes, training of employees, and market research (Singh *et al.*, 2008a). Globalization has resulted in the rapid inflow of foreign direct investment across the globe, particularly into newly industrialized countries (UNCTAD, 2005). It has given good opportunities for small firms to be part of global network and partner with larger companies. To avail these opportunities, SSIs have to further strengthen their strengths of flexibility, innovativeness, multiskilling, etc.

3. Research objectives and methodology

Present study being an empirical study for SSIs has its own importance in enhancing the knowledge of strategy development. This paper endeavors to address issues related to business environment, strategy development, and performance of Indian SSIs. Under business environment, it will try to identify major pressures and constraints on SSI to sustain their competitiveness. In strategy development, authors have tried to identify competitive priorities, areas of competencies development and major areas of investment. Two dimensions of performance have been explored in the present study. These are subjective and objective. Subjective performance will try to compare the performance of organization with respect to national standards whereas objective performance will measure the average growth on certain financial parameters (Singh *et al.*, 2007).

In the era of e-globalization, markets have become extremely dynamic and turbulent. Competitiveness has become technology driven. To update their technology, SSIs need to invest their resources judiciously. Therefore, it is expected that competitiveness of the organizations will depend on investment in different areas/technology. This leads to following proposition:

P1. The degree of emphasis that SSIs place on different areas of investment is positively correlated with their performance and competitiveness.

In this study, performance of organizations has been measured on two criteria, i.e. subjective and objective. Subjective performance is based on comparison of 12 different measures such as manufacturing cost, level of inventory, flexibility in production, etc. with national standards. Objective performance is based on average growth of financial measures such as profit, sales turnover, market share, return on investment, and export. It is expected that if organization performs better than national standards then its objective performance will be also good. Both of these performances will also lead to competitiveness of organization. Hence, following propositions can be proposed:

P2. Subjective and objective performances are positively correlated with competitiveness.

P3. Subjective performance is correlated with objective performance.

To study different issues such as business environment, strategy development and performance of SSIs in Indian context, authors developed a framework as shown in Figure 1. According to this framework, on the basis of business environment, SSIs would formulate their strategies. Business environment will depend on nature of pressures, constraints, and cost of different inputs such as raw materials, labour, power, etc. On the basis of market pressures and business environment, SSIs have to develop strategy for deciding their competitive priorities and competencies. Based on these priorities, investments will be made on different areas such as research and development, automation of processes, training of employees, etc. As SSIs lack financial resources and basic infrastructure, selection of these priorities and effective utilization of limited resources is very important for improving performance and competitiveness of SSIs.

In order to test research propositions and for analysis of different issues related with competitiveness, a survey instrument was developed. Survey was done among Indian SSIs from different sectors such as auto component, plastic and electronics from June 2008 to March 2009. Majority of them were located in semi-urban area. All of them were having investment in plant and machinery less than Rs 50 million as per definition of SSIs in context of India. Authors conducted a pilot survey of some SSIs for finalizing the questionnaire. Although questionnaire was sent by post or e-mail but most of the SSIs for pilot survey were contacted on personal basis by taking appointment from the management. Annexure was given at the end of questionnaire; it contained guidelines for responses and terminology to avoid unknown bias. The questionnaire contained three sections. Section A dealt with profile of organization, Section B dealt with pressures and constraints, competitive priorities, investment priorities, competency development and Section C focused on performance and competitiveness area.

In this study, executives were asked to rate the intensity of each attribute for their respective organization on a five-point Likert scale (1 – lowest, 5 – highest). About 450 small scale organizations from all parts of India were contacted for collecting responses. These organizations were selected from directories available at Confederation of Indian Industries, Auto Component Manufacturers Association, Federation of Indian Chambers of Commerce and Industries and Directorate of Industries (Government of NCT Delhi). As in India, SSIs are defined on investment in plant and machinery, i.e. Rs 50 million. Therefore, for this study, respondents were selected fulfilling these criteria and those belonging to manufacturing sectors. In spite of continuous e-mails, telephones, reminders and personal visits to plants, only 75 complete responses (representing a response rate of 16.66 percent) could be obtained. Most of the respondents were at the level of production manager or business head. Out of

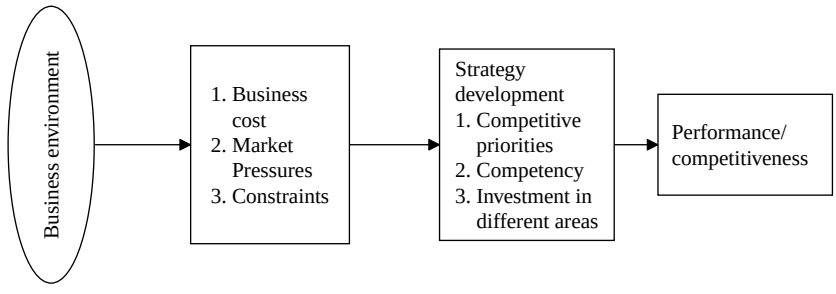

Figure 1.
Framework for study

75 responding organizations, 28 percent were from auto component sector, 21 percent from plastic and 24 percent from electronics sector. Remaining were light-engineering organizations.

4. Results and discussions

Inter-item analysis is used to check the scales for internal consistency or reliability. Cronbach's coefficient α is calculated for each scale, as recommended for empirical research in operations management (Flynn *et al.*, 1990). Summary statistics is given in Table I. The coefficients of Cronbach's α for all constructs were in range from 0.688 to 0.9035. These values exceed the minimum requirements of 0.5 for an exploratory study such as this one (Nunnally, 1978). Data acquired from survey of Indian SSIs are analysed by statistical tests such as one sample *t*-test, paired sample *t*-test (PST), correlation and regression analysis in following sections.

4.1 Business environment

In general terms, the business environment consists of the forces which are beyond the control of management in the short run. Growth-conducive business environment plays significant role in the performance of organizations. Although business environment consist of many dimensions but present study focus on business cost elements, pressures from market and major constraints. Level of these attributes may vary from country to country. For example, labour cost in the USA or Singapore will be higher than in India.

4.1.1 Business cost. The business cost includes cost of labour, material, energy, packaging, transportation, warehousing, and distribution. Respondents were asked to indicate the degree to which the above elements are of concern for their company's competitiveness on Likert scale of 1-5 (1 – least important, 5 – most important). Results of this analysis are given in Table II. It is observed that rising material cost (mean = 2.92) is of highest concern for Indian SSIs competitiveness. After this, transportation and distribution cost are considered as most important cost elements. Respondents were also asked to compare these components of cost with respect to their global competitors on the basis of their perception on Likert scale of 1-5 (1 – very low, 5 – very high). It is observed that for Indian SSIs, most of the cost components are very less in comparison to global competitors. It implies that Indian SSIs have cost advantage in comparison to their global competitors and they should take leverage of this asset

S. no.	Variable	Mean	SD	No of items	Cronbach α
i.	Business cost	2.68	0.54	7	0.7812
ii.	Pressures	3.12	0.71	6	0.7280
iii.	Constraints	2.47	0.75	11	0.8688
iv.	Competitive priorities	3.40	0.71	12	0.9035
v.	Competencies development	3.35	0.73	7	0.8089
vi.	Investment priorities	2.71	0.64	7	0.6883
vii.	Subjective performance	3.20	0.49	12	0.8218
viii.	Objective performance	3.36	0.44	5	0.8555
ix.	Competitiveness	2.62	0.89	3	0.6980

Table I.
Summary statistics and reliability of constructs

Table II.
Business cost elements for SSIs

S. no.	Elements of cost	Level of concern to own company Mean	SD	T	In comparison to global competitor Mean	SD	T
i.	Labour	2.35	0.78	-7.12^{*}	1.64	0.72	-14.44^{*}
ii.	Material	2.92	0.70	-1.0	2.29	1.09	-4.93^{*}
iii.	Energy	2.75	0.81	-2.59^{*}	2.32	1.11	-4.56^{*}
iv.	Packaging	2.61	0.78	-4.23^{*}	2.14	0.99	-6.41^{*}
v.	Transportation	2.81	0.72	-2.28^{*}	2.34	1.14	-4.25^{*}
vi.	Warehousing	2.60	0.87	-3.83^{*}	2.18	1.05	-5.87^{*}
vii.	Distribution	2.79	1.02	-1.76	2.04	1.00	-7.15^{*}

Note: Significantly lower than moderate value at $^{*}p < 0.05$

for improving their competitiveness. Singh *et al.* (2008a) have also observed that firms in auto component sector have cost benefit with respect to their global competitors.

4.1.2 Pressures and constraints. On the basis of literature (Dangayach and Deshmukh, 2001; Singh *et al.*, 2008a), five pressures are identified. The results of this study for various pressures being faced by Indian SSIs on a Likert scale of five are shown in Figure 2. It is being observed that the highest pressure is to reduce cost (3.62). It is followed by pressure to improve quality (3.45) and to reduce delivery time (3.28). These findings imply that SSIs should continuously improve quality and delivery service without increasing product cost. This was evidenced in the 1980s also when the lower price and higher quality of the Japanese products flooded global markets which had previously been dominated by Western companies (Raisinghani *et al.*, 2005). Lau (2002) has also found higher quality and lower cost as top-ranking competitive factors among US electronics and computer industries. Pun *et al.* (2004) have observed that for electronics industry in Hong Kong, product/service quality and customer services have emerged as the critical success factors. Singh *et al.* (2006) have also observed that for Indian plastic sector, quality improvement, cost reduction, and increasing product range are the major pressures. Input cost of raw materials, energy, and labour are continuously increasing. Therefore, to tackle quality and product cost simultaneously,

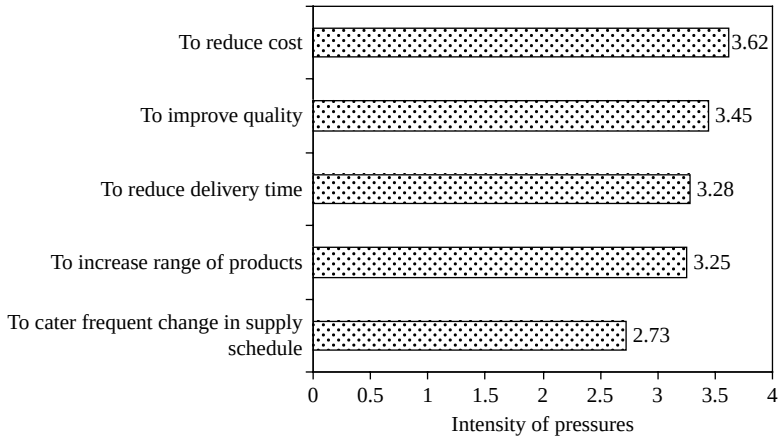

Figure 2.
Pressures on Indian SSIs

SSIs should improve productivity by managing their limited recourses and processes in a most efficient manner.

Levels of various constraints on Likert scale of five are shown in Figure 3. Most of the constraints are significantly below moderate level. Lack of growth conducive environment (2.66), inadequate government support (2.61) and poor infrastructure for training (2.53) are observed as most severe constraints. In creating growth conducive environment, government policies play important role. Government policies have played a facilitative role in countries like Japan, South Korea, Taiwan, etc. (Wang and Tsai, 1995). In India, some initiatives such as raising of investment limit from Rs 10 million to Rs 50 million for small-scale sector, raising of loan limit and subsidy for technology upgradation, improvement in infrastructure, transparency and accountability of administrative systems, and setting of national manufacturing competitiveness council are being taken up but still lot of efforts are needed from government side for making Indian organizations competitive in the global market.

4.2 Strategy development for competitiveness

According to Errin (2004), in order to compete with their competitors, firms have to develop competitive strategies. Main task of corporate strategy is not to describe the current state of art, but to identify and explore core competencies that must be added. Otherwise, the current competencies can become obsolete and begin to function as core rigidities. Under this section of strategy development, different issues such as competitive priorities, competency development, areas of investment will be discussed.

4.2.1 Competitive priorities. Competitive priorities represent a holistic set of tasks, which should be performed by the manufacturing function in order to support the business strategy. Competitive priorities are the planned or intended goals that guide strategic actions and resource allocation decisions (Flynn and Flynn, 2004). Four widely

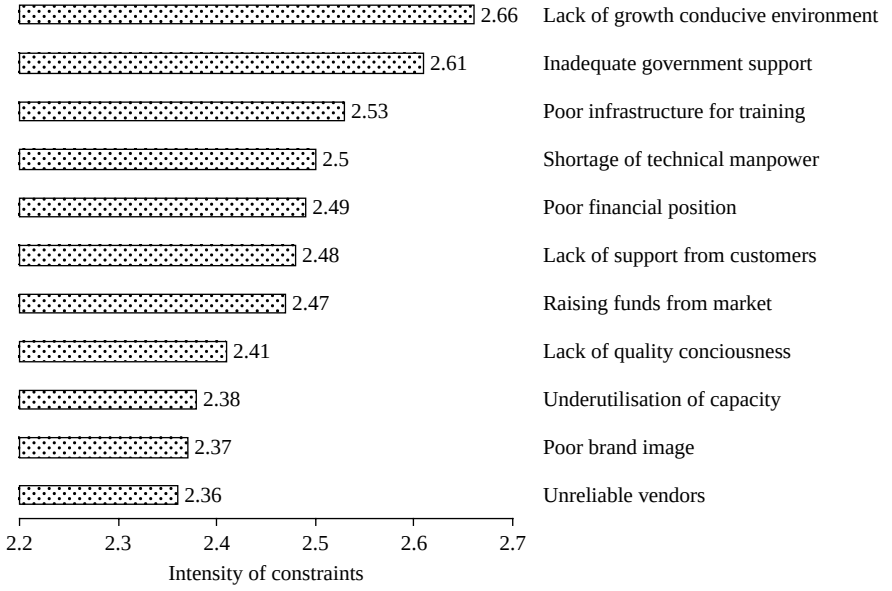

Figure 3.
Constraints of Indian SSIs

accepted competitive priorities are cost, delivery, quality, and flexibility (Ward *et al.*, 1995). Lagace and Bourgault (2003) have advocated for linking of manufacturing improvement programs and practices with the competitive priorities of SMEs. Vachon *et al.* (2009) have observed that interactions with suppliers improve alignment of competitive priorities for improving responsiveness of the organization. According to Fleury and Fleury (2003), organizations should optimize the quality/price ratio for operational excellence. Singh *et al.* (2008a) have observed that for SMEs in auto component sector, cost reduction, product quality, and delivery in time are major competitive priorities.

In present study, 12 competitive priorities have been identified. Respondents were asked to mention the level of priority on these factors during past three years and in next three years on a Likert scale of five. Results are given in Table III. In past three years, timely delivery (3.80), product quality (3.79), and safety measures for employees (3.65) were the major competitive priorities. It has to be noted here that product cost has not emerged as a top ranking priority as observed in previous studies. It may be due to the reason that most of the SSIs are working as vendors to larger organizations where product quality and timely delivery are essential to stay in supply chain. Product cost has not emerged as a top priority because presently organizations consider product cost as a qualifying criterion. It means organizations themselves try to add different features on their product at competitive price only for the delight of customers. Safety measures for employees have emerged new competitive priority which reflects the changed attitude of SSIs towards their employees. It will help them in retaining their employees as well as in developing their human resource as a competitive asset.

Respondents were also asked to mention the level of priority in next three years to study dynamic nature of strategy development. It is observed that, top priorities are same however their ranking has changed. On the basis of PST, it is observed that mean values for past three years and next three years differ significantly. It implies that level of focus as well as priority changes with time. It reflects the dynamic nature of strategy development. This is a positive indication for Indian SSIs to survive in highly dynamic market after e-globalization.

		In past three years			In next three years			
S. no.	Competitive priorities	Mean	SD	*t*-value	Mean	SD	*t*-value	T_{PST}
i.	Product quality	3.79	0.74	9.04*	4.39	0.73	16.17*	7.97**
ii.	Product cost	3.32	0.93	2.91*	3.53	1.16	3.80*	2.49**
iii.	Timely delivery	3.80	0.86	7.91*	4.31	.79	13.91*	5.37**
iv.	Flexibility in production system	3.16	0.96	1.37	3.74	1.00	6.05*	5.23**
v.	Vendor development	3.22	0.97	1.87	3.84	0.98	6.99*	5.74**
vi.	Human resource development	3.14	1.05	1.13	3.73	0.95	6.44*	6.95**
vii.	Effectiveness of value chain	3.18	1.10	1.35	3.67	1.12	4.91*	5.63**
viii.	Leaner organization structure	2.96	0.96	−0.38	3.50	1.09	3.74*	5.34**
ix.	Labour productivity	3.38	0.93	3.39*	4.02	0.75	10.93*	6.67**
x.	Total productive maintenance	3.33	1.00	2.74*	4.00	0.86	9.69*	6.33**
xi.	Safety measures for environment	3.50	1.02	4.11*	4.13	0.87	10.76*	6.41**
xii.	Safety measures for employees	3.65	0.91	6.11*	4.21	0.77	13.20*	6.81**

Table III.
Competitive priorities of Indian SSIs

Notes: Significantly higher than moderate value at $^{*}p < 0.05$; difference of mean values for past and next three years is significant at $^{**}0.05$ level (based on PST)

4.2.2 Development of competencies. Core competencies of the organization are built on intangible assets that cannot be easily imitated by competitors and are the source of the company's ability to deliver unique value to its customers, and allow the company to be flexible in terms of markets and products. Chaston *et al.* (2001) have observed that firms which have adopted a higher level learning orientation can be expected to exhibit statistically significant higher competencies across the areas of measuring customer expectations, identifying quality variance, implementing quality improvements, using information to optimize information, create control systems, identify market changes, and use of IT to acquire data. In tomorrow's business world, success will be critically influenced by the degree to which firms utilize new knowledge to support innovation. The foundation of organizational competitiveness has shifted from physical and tangible resources to knowledge (Wong and Aspinwall, 2005).

In present study, seven major competencies have been identified (Singh *et al.*, 2006). Results of competencies development by SSIs are given in Table IV. In past three years, SSIs had given maximum focus for developing competencies in the area of using information to optimize decisions (3.54), use of customer to define quality standards (3.48) and optimization of work environment (3.47). In next three years, identification of market changes (3.99), use of information to optimize decisions (3.94), and use of customer to define quality standards (3.83) will remain as major areas of competency development.

Although most of the areas of competency development except identification of niches, have got significantly higher focus than moderate level in past three years but on the basis of PST, it is observed that level of focus for developing these areas of competency have increased significantly with time. Analysis also shows that present organizations differ from focused organization of the past. Reason is that to satisfy and retain their customers for their sustainable growth in present global competition, they cannot ignore any of these competencies.

4.2.3 Investments priorities. In this study, research and development, automation of processes, IT, training of employees, welfare of employees, market research, and advertisement are considered as potential areas of investment (Singh *et al.*, 2006). Respondents were asked to prioritize these areas on Likert scale of five. The results of this study regarding investment priorities are shown in Table V. It is observed that

S. no.	Competencies	In past three years Mean	SD	*t*-value	In next three years Mean	SD	*t*-value	T_{PST}
i.	To identify niches	2.94	1.09	−0.44	3.48	1.04	3.78*	6.07***
ii.	To develop new products	3.41	0.99	3.52*	3.74	0.99	6.14*	3.50***
iii.	To optimize work environment	3.47	0.86	4.42*	3.74	0.85	6.89*	3.75***
iv.	To use customer to define quality standards	3.48	0.84	4.79*	3.83	0.91	7.57*	3.18***
v.	To introduce new technology	3.31	1.07	2.46*	3.81	0.93	7.14*	4.86***
vi.	To use information to optimize decisions	3.54	1.02	4.47*	3.94	0.94	8.22*	3.33***
vii.	To identify market changes	3.43	0.91	3.94*	3.99	0.92	8.81*	6.60***

Notes: Significantly higher than moderate value at $^{*}p < 0.05$, significantly lower than moderate value at $^{**}p < 0.05$; difference of mean values for past and next three years is significant at $^{***}0.05$ level (based on PST)

Table IV.
Development of competencies by SSIs

for SSIs, market research (3.07), welfare of employees (3.00), research and development (2.85) are the major areas of priority for investment in past three years. SSIs are giving maximum focus on market research due to highly dynamic nature of market after e- globalization. In past, high employees turnover and poor R&D had been the major problems for SSIs but observations of this study show that now SSIs are giving due focus for employees welfare and research. This is a new trend being observed in context of SSIs. It will help them in developing innovative products and human resource. Maranto-Vargas and Tagle Rangel (2007) have also observed that the fulfillment of employees expectations by management, contribute to the competitive advantages of SMEs.

Above findings show that level of investments in some areas is not at moderate level. Specifically in areas of IT, training of employees and advertisement, it is significantly less than moderate level. On the basis of PST, it is observed that mean values for different investment areas have changed significantly with time. It also reflects dynamic nature of strategy development by SSIs.

4.3 Performance and competitiveness

Performance measurement can be defined as the process of quantifying the effectiveness of various processes being followed by the organization. Performance measurement provides the information necessary for decision makers to plan, control, and direct the activities of the organization. They also allow managers to measure performance, to signal and educate employees (and suppliers) on the important dimensions of performance, and to direct improvement activities by identifying deviations from standards (Cousins *et al.*, 2008).

For measuring performance both subjective and objective measures are considered. Although there are special methods of SMEs efficiency measurement (Abouzeedan, 2005) however smaller companies have much less sophisticated accounting systems, shorter operational track records, and their internal data are less available for outside research. Garg *et al.* (2003) suggest that as most small firms are privately held, it is unlikely that their CEOs will be willing to provide detailed accounting data on the firms' performance. Therefore, they suggest the use of "subjective and self-reporting measures of performance".

		During past three years			In next three years			
S. no.	Investments	Mean	SD	*t*-value	Mean	SD	*t*-value	T_{PST}
i.	Research and development	2.85	1.19	−1.07	3.51	1.13	3.82*	6.46***
ii.	Automation of processes	2.78	1.11	−1.69	3.61	1.01	5.07*	8.37***
iii.	IT	2.29	1.12	−5.37**	3.22	1.24	1.46	7.71***
iv.	Training of employees	2.49	1.00	−4.32**	3.23	1.08	1.75	8.45***
v.	Welfare of employees	3.00	0.90	0.00	3.56	0.987	4.72*	6.95***
vi.	Market research	3.07	1.17	0.50	3.77	1.24	5.20*	6.80***
vii.	Advertisement	2.52	1.03	−3.93**	3.39	1.20	2.70*	8.29***

Table V.
Investments priorities of SSIs

Notes: Significantly higher than moderate value at $^{*}p < 0.05$; significantly lower than moderate value at $^{**}p < 0.05$; difference of mean values for past and next three years is significant at $^{***}0.05$ level (based on PST)

For measuring subjective performance of Indian SSIs, respondents were asked to mark their performance in comparison to national standards on a five-point Likert scale for various measures such as manufacturing cost, level of inventory, delivery speed, flexibility in production, labour productivity, capacity utilization, throughput, customer satisfaction, supplier satisfaction and employee satisfaction (Singh *et al.*, 2007). Objective performance was measured in terms of average percentage change in past three years on market share, profitability, export and return on investment on a Likert scale of five. This scale took care of decreasing, constant as well as increasing percentage changes. Respondents were also asked to mention status before three years in scale of five on same measures and their target in next three years as a part of this question. This was done to take care of leading organizations in the market because for them absolute change may not be as much as for newer or non leading organizations. Final score for objective performance on a five-point Likert scale was assigned considering the average of both parts of question (Singh *et al.*, 2006).

Subjective performance of responding Indian SSIs in comparison to national standards is given in Table VI. Performance of Indian SSIs in comparison to national standards is significantly higher than moderate level on measures such as manufacturing cost, level of inventory, delivery speed, percentage rejection, employee turnover rate, customer satisfaction, and supplier satisfaction. Objective performance of SSIs is given in Table VII. It is observed that average growth rate on all business parameters is higher than moderate value. SSIs have observed highest growth rate in terms of sales turnover and lowest in export.

Performance of an organization relative to its industry standards is termed as its competitiveness. According to Ambastha and Momaya (2004), competitiveness is the ability of organization to provide goods and services more efficiently than competitors in the market. In this study, competitiveness of SSIs is measured at three levels, i.e. local, national, and international. Based on above definition, respondents were asked to mention their competitiveness with respect to their competitors at local, national, and international level on five-point Likert scale. For evaluating overall competitiveness of an organization, weightage for different levels was decided on the basis of discussion

		In comparison to the national standards		
S. no.	Measures	Mean	SD	*t*-value
i.	Manufacturing cost	3.37	0.73	4.15*
ii.	Level of inventory	3.24	0.74	2.64*
iii.	Delivery speed	3.40	0.69	4.72*
iv.	Flexibility in production	2.90	0.99	−0.85
v.	Percentage rejection	3.66	0.82	6.64*
vi.	Labour productivity	3.00	0.87	0.00
vii.	Capacity utilization	2.91	0.95	−0.77
viii.	Employee turnover rate	3.37	0.81	3.75*
ix.	Throughput (Rs/hour)	2.59	0.92	−3.48
x.	Employee satisfaction	3.06	0.91	0.53
xi.	Customer satisfaction	3.53	0.97	4.50*
xii.	Suppliers satisfaction	3.40	0.84	3.81*

Note: Significantly higher than moderate value at $^{*}p < 0.05$

Table VI.
Subjective performance of Indian SSIs

with industry professionals. It was 0.2 for local, 0.3 for national and 0.5 for international (Singh *et al.*, 2007). Results are given in Table VIII. SSIs have highest competitiveness at local level (3.55) and lowest competitiveness at international level (2.05). These findings indicate towards poor performance of Indian SSIs in global market. It may be due to various constraints mentioned in the literature as well as in this study. Without sufficient resources, trained and qualified manpower, and state-of-the-art technology, Indian SSIs could not compete with their counterparts in developed countries or especially emerging and newly industrializing economies such as Singapore, Hong Kong, South Korea, Taiwan, Mexico and Malaysia. These challenges have forced majority of the SSIs to focus on local market and made them unable to compete successfully in global market. Therefore, major challenge for them is to broaden their product range and market by improving their long-term competitiveness.

4.4 Correlation analysis for testing of research propositions

In earlier sections, study has tried to identify major pressures, constraints, competitive priorities, areas of competency development and investment. For testing of propositions made in this study, correlation and regression analysis has been done in this section. Correlation and regression analysis of areas of investment with performance and competitiveness is shown in Table IX. It is observed that all areas of investment except automation of process and advertisement are significantly correlated with subjective performance of SSIs. Areas related with human resource development and market research have highest correlation with competitiveness. Research and development is significantly correlated with objective performance whereas others do not have significant relationship with it. Reason for this may be unwillingness of SSIs to give exact information of business measures as well as low growth rate of already-established competitive firms. With overall competitiveness, all areas of

S. no.	Parameters	Mean	SD	*t*-value
i.	Market share	3.41	0.61	4.854*
ii.	Sales turnover	3.54	0.61	6.519*
iii.	Profit after tax	3.39	0.63	4.558*
iv.	Return on investment	3.35	0.56	4.489*
v.	Export	3.15	0.36	2.38*

Note: Significantly higher than moderate value at $^{*}p < 0.05$

Table VII.
Objective performance of Indian SSIs

S. no.	Level	Mean	SD	*t*- value
i.	Local	3.55	0.97	4.782*
ii.	National	3.01	1.01	0.12
iii.	International	2.05	1.16	−6.57**

Notes: Significantly higher than moderate value at $^{*}p < 0.05$; significantly lower than moderate value at $^{**}p < 0.05$

Table VIII.
Competitiveness at different levels

S. no.	Investment areas	Subjective performance	Objective performance	Overall competitiveness
i.	Research and development	0.243*	0.370**	0.311*
ii.	Automation of processes	0.041	−0.189	−0.180
iii.	IT	0.258*	0.226	0.287*
iv.	Training of employees	0.398**	0.082	0.365**
v.	Welfare of employees	0.481**	−0.066	0.235
vi.	Market research	0.328**	−0.143	0.098
vii.	Advertisement	0.196	0.102	0.083
viii.	Overall Investment	0.435**	0.106	0.286*
	Regression analysis for dependent variables: subjective performance, objective performance and competitiveness, independent investment areas	$R^2 = 0.297$ $F = 3.44$ Sig. = 0.004	$R^2 = 0.316$ $F = 2.964$ Sig. = 0.012	$R^2 = 0.306$ $F = 3.273$ Sig = 0.006

Note: Significance at: *0.05 and **0.01 levels

Table IX.
Relationship between investment areas and performance/ competitiveness

investment except automation of processes have positive correlation whereas research and development, IT, and training of employees are significantly correlated. Therefore, research and development, application of IT, and training of employees have emerged as critical factors for improving competitiveness. In past, SSIs had been reluctant to invest in R&D, investment on employees as well as in IT applications. Therefore, finding of this study will be very important to change traditional thinking of SSIs. It means Indian SSIs should improve their investment for R&D, training of employees and in IT infrastructure for improving their competencies such as developing new products and technology, identifying market changes, etc. However, basic areas of investment of SSIs are quite similar to larger organizations. In recent past many of the Indian organizations such as Sona Koyo Ltd, Maruti Udyog Ltd, and Havells India Ltd have given too much focus on technology upgradation, human resource management, R&D to improve their competitiveness (Singh *et al.*, 2008a). Regression analysis shows that these areas of investment explain about 30 percent ($R^2 = 0.30$) variability in performance and competitiveness. This regression model is significant at $p < 0.01$. Regression model for overall competitiveness as dependent variables and investment areas as independent variables can be written as below:

$$\begin{aligned}\text{Overall competitiveness} = {} & 1.755 + 0.253 \text{ research and development} \\ & - 0.247 \text{ automation of processes} \\ & + 0.205 \text{ information technology} \\ & + 0.160 \text{ training of employees} \\ & + 0.154 \text{ welfare of employees} \\ & - 0.28 \text{ market research} - 0.142 \text{ advertisement}\end{aligned}$$

This model shows that by investing on research and development, IT, training, and welfare of employees, SSIs can improve their overall competitiveness. Negative coefficients for automation of process, market research, and advertisement may be due to lack of expertise of SSIs in these areas. It implies that for making effective utilization of resources in these areas, SSIs should take help from professionals and consultants.

These findings support *P1* that investment in different areas is correlated with performance and competitiveness.

For testing *P2* and *P3* correlation analysis was done for subjective performance, objective performance and competitiveness. Results are given in Table X. It is observed that subjective as well as objective performances are significantly correlated with competitiveness ($p < 0.01$). It supports *P2*. As most of the subjective performance measures are related with operational issues and objective performance measures are related with business measures. It implies the need for overall improvement. In addition to this subjective performance measures are comparative in nature and objective measures are absolute. Therefore, acceptance of *P2* implies that to improve overall competitiveness, SSIs should focus on improving the effectiveness of operational functions as well as business measures. In past, SSIs have focused mainly for short-term business gains such as profit, market share, return on investment, etc. Owing to this attitude, operational functions have been ignored, which caused short-term survival for many of the SSIs. It means to sustain their short as well as long-term performance, SSIs should focus on operational issues such as quality management, human resource development, vendors development, customer satisfaction, inventory management, etc. By improving these operational issues, they can also overcome on various challenges mentioned in literature such as resource constraints (Moen, 1999), lack of expertise (Gunasekaran *et al.*, 2001), high product rejection rate and information gap between marketing and production functions (Xiong *et al.*, 2006). This finding has important implications for Indian as well as small scale firms from other developing countries also such as Pakistan, Bangladesh and Sri Lanka because challenges and constraints for them are quite similar.

It is also observed that subjective and objective performances are not mutually correlated thereby rejecting *P3*. It implies that for an organization which is highly competitive with respect to national standards, average growth in business measures may not be very high due to already saturated level. In such situation, SSIs should try to enter in new emerging markets and innovative product segments for better growth by developing competencies such as developing new products, involvement of customers, use of appropriate information for identifying market changes. In India, market scenario is changing very fast for SSIs. In past, they were working in government supported and protective environment. Now, many of big Indian players and foreign firms have also entered in the product segment reserved for SSIs. Therefore, under such situation, survival of SSIs depends on their core competencies. Development of various competencies as discussed above will help SSIs in sustaining their long-term competitiveness because these cannot be copied easily by their competitors.

Table X.
Relationship between performance and competitiveness

S. no.	Performance/ competitiveness	Subjective performance	Objective performance	Overall competitiveness
i.	Subjective performance	1.00	− 0.055	0.539*
ii.	Objective performance	− 0.055	1.000	0.386*
iii.	Overall competitiveness	0.539*	0.386*	1.000

Note: Significant at: *0.01 level of significance

5. Concluding remarks

Objective of this study was to analyse business environment and strategies for making investments by Indian SSIs in globalized market. Major findings of this study are:

- Indian SSIs have cost advantage in comparison to their global competitors;
- cost, quality, and to reduce delivery time are the main pressures on SSIs;
- SSIs are considering lack of growth conducive environment, inadequate government support/incentives and poor infrastructure for training as major constraints;
- market research, welfare of employees, and research and development are top ranking areas for making investments;
- use of information to optimize decisions, to define quality standards, and optimization of working environment are main areas of competency development;
- application of IT, training of employees, and research and development are significantly correlated with competitiveness; and
- SSIs have highest competitiveness at local level and lowest competitiveness at International level.

Findings of the study have many crucial implications for SSIs and academia. Major implication is that SSIs should develop their strategies effectively after analysing business environment. They should develop competencies for continuous cost reduction, improvement of product quality, and ability to reduce delivery lead time. They should devote their resources for IT applications, training of employees, and research and development to improve their competitiveness at global level. At the same time, negative coefficients for some of the variables in regression model also imply that SSIs should take help from consultants while investing in the areas such as automation of process, market research, and advertisement. Another implication is from government perspective. Government should create growth conducive environment, necessary infrastructural support, and provide incentives to make them globally competitive for sustainable growth. As the condition of SSIs in developing Asian countries such as Pakistan, Bangladesh, and Sri Lanka is quite similar to India. Therefore, these findings will be of great value for SSIs from these developing countries in formulating their long-term strategies.

After liberalization of economy, market scenario is changing very fast, product life cycle is decreasing and technology is changing. Under such circumstances, findings of this study and its implications for developing various competencies and for making investment decisions will help SSIs in developing strategies for long-term competitiveness.

In spite of significant contribution of this study in area of strategy development by SSIs, this study has got some limitations due to smaller sample size. This was due to unavailability of complete data from many of the respondents because of reluctance of SSIs in disclosing detailed information to outsiders as well as overburden of work. Therefore, careful interpretation and generalization of the results needs to be taken. This study can be further explored by considering other aspects of strategy development such as human resource, vendor development, organization culture, green productivity, etc. by taking large sample size in context of role of SSIs in growth of specific sectors.

Researchers can also analyse these issues in context of other developed countries for bringing out significant differences of SSIs in different scenario as a future scope for the study.

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