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# Globalization and the Competitiveness of the Small Scale Industries in India

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**ABSTRACT:** Small scale industries (SSIs) are considered engine for economic growth all over the world. In present scenario of markets globalization and age of information technology, SSIs are playing significant role in supply chains of larger organizations. To sustain their importance and performance, SSIs are feeling more pressures to improve their competitiveness as compared to past protective markets. In this paper, an attempt is made to examine various issues such as nature of pressures and constraints, priorities for making investment and developing competencies and their competitiveness. Different dimensions of performance and competitiveness have been identified. For analyzing these issues questionnaire based survey methodology was used. Total 75 responses were received. For analyzing the data SPSS 10.0 software is used. On the basis of analysis of data, it is observed that cost reduction, quality improvement and delivery in time are major pressures on SSIs. Lack of growth conducive environment and inadequate government support are major constraints. For making investment, market research, welfare of employees and research and development are major areas of investment. Performance of Indian SSIs is not found very satisfactory in comparison to international standards. However their growth in terms of market share, sales turnover and profit is higher than moderate level. It may be due to enhancing opportunities for them after market globalization. This study implies that Indian SSIs have lot of potential for growth provided they can improve their competitiveness at global level.

**KEYWORDS:** SSIs, globalization, competitiveness, employees, India, potential, market, research

## I. INTRODUCTION

Small scale industries (SSIs) represent the largest proportion of the manufacturing sector in every country. They have always played a key role in the economies of all major industrial countries. 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 (Times of India, 2002). In India, industries having investment in plant and machinery less than Rupees (Rs) ten million are called small-scale industries (SSIs).

The major challenge for SSIs is to continuously provide innovative and customised 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 (Gupta and Garret, 1996). According to Ajitabh and Momaya (2004) in such kind of environment, firm's competitiveness will depend on its ability to provide goods and services more efficiently than others involved in the market place.

In recent years, 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. As business success depends on the formulation and implementation of viable strategies (Pun et al., 2000), therefore to grab these opportunities, SSIs in all sectors need to develop effective strategies for providing higher added values to customers in terms of cost, quality and services at shortest possible time.

There have been very few studies aimed at strategy development by SSIs for competitiveness. Even in developed countries, most of the studies have been devoted to large scale industries (LSI). Small firm with limited resources will be expected to perceive its business environment as being different from that of a large firm with perhaps more resources and it is also likely to face different environment pressures with regard to competitiveness in market. (Gyampah et. al. 2001). The approaches that a large firm uses to benchmark its competitors and negotiate with suppliers are expected to be different from the approaches used by small firm (Vickery et al. 1999). Therefore this study being an empirical study for SSIs has its own importance in enhancing the knowledge of strategy development. It will help to understand major pressures and constraints on SSIs, dynamic nature of strategy development as well as relationship of strategies with performance.

In sustaining their competitiveness, SSIs face many pressures and constraints due to their limited resources such as lack of finance, skilled manpower and advance technology. Thus, their strategy should match the organization's resources to

the changing environment and in particular its markets and customers in the pursuit of its goals and objectives (Porter, 1998).

The new competition is in terms of reduced cost, improved quality, products with higher performance, a wider range of products and better service, and all delivered simultaneously (Dangayach and Deshmukh, 2001). For surviving in this new competition, SSIs will have to develop suitable strategies for making new investments and development of competencies. Chaston et. al.(2001) have observed that the areas of competence concerned with new product development, human resource management practices, organizational productivity, the management of quality and management of information were extremely crucial in terms of influencing small firm growth rates. They have also 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, and identify market changes and use of IT to acquire data.

- Analyse business environment for Indian SSIs.
- Identify priorities for making new investments by them.
- Identify major areas of competency development by them.
- Analyse performance in comparison to national standards.
- Analyse competitiveness at different levels.

For data collection from industries, a structured questionnaire was framed. This was also pilot tested and then administered to industry. Extensive visits were made to SSIs to collect first hand information. Research methodology followed for this study is shown in form of flow chart (Figure. 1). Identification of issues and development of preliminary framework for study was done after extensive review of literature and discussions with industry professionals. The framework developed for this study is shown in Figure 2. Ward et. al. (1995) have observed that link between environment and operations strategy determines firm performance. Therefore based on market environment, SSIs should decide their strategies for investments and development of competencies. Formulation of strategies and their effective implementation will decide their competitiveness.

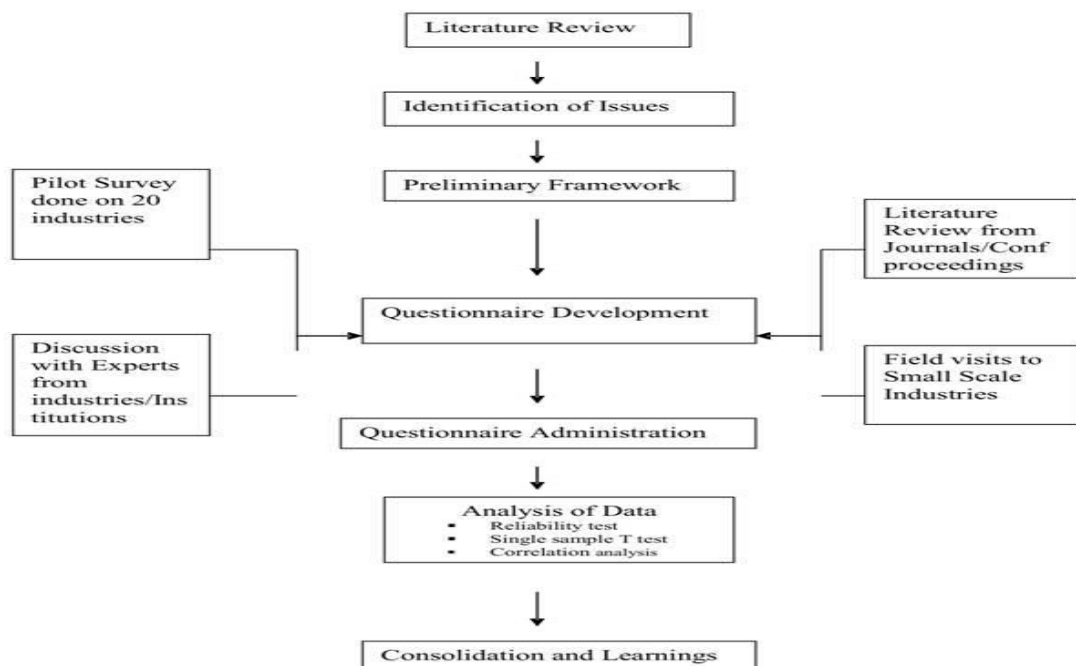


Fig.1.

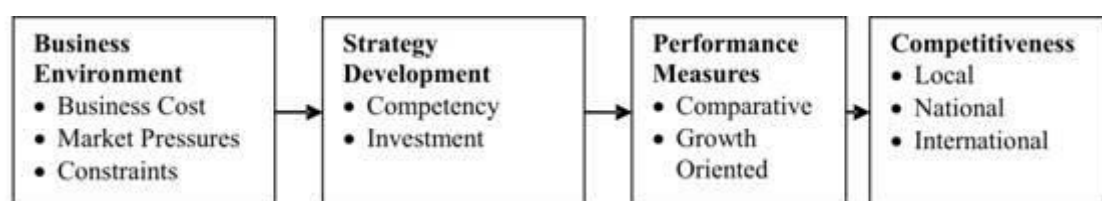


Fig.2



In this study, executives were asked to rate the intensity of each factor 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 various directories available at Confederation of Indian Industries (CII), Auto Component Manufacturers Association (ACMA) of India, Federation of Indian Chambers of Commerce and Industries (FICCI) and Department of industries (Government of India). In spite of continuous reminders, phone calls, e-mails only seventy five valid responses were obtained for this empirical study. This data was analysed in context of business environment, strategy development and performance. First of all reliability test was done for all the issues. It was observed that for all issues, it is more than minimum acceptable value 0.5 (Nunnally, 1978).

In globalised market, growth conducive business environment plays significant role in improving competitiveness of organisations. For analyzing business environment, present study focus on business cost elements, pressures from market and major constraints of SSIs to become competitive in following sections.

#### Business Cost

The business cost dimension includes concerns pertaining to the rising 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 from very unimportant to important in Likert scale of 1 to 5. Results of this analysis are given in Table 1. 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 with respect to their global competitors on Likert Scale of 1 to 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 for improving their competitiveness.

#### Pressures and Constraints of SSIs

In general, smaller firms experience greater market and customer uncertainty. Those who own and manage the smaller business exhibit a vastly greater range of aspirations than owners/ managers of large firms. The smaller firms rationally respond by favouring short over longer-term gains and flexible over specific investments even where there is some cost penalty (Chen & Hambric, 1995). The main barriers to be competitive for SSIs are inadequate technologies as well as inadequate in house human expertise and poor financial resources (Armstrong and Coyle, 1999). Resource scarcity can impact on the ability of smaller firms to enter export markets and can also limit a smaller firm's ability to reach more advanced stages of internationalisation (Moen, 1999).

The results of this study for various pressures being faced by Indian SSIs on a Likert scale of five are presented in Table 2. It is being observed that the highest pressure is to reduce cost (3.62), which is followed by pressure to improve quality (3.45) and to reduce delivery time (3.28). 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. (2004) have also observed same findings in their study for Indian auto component sector. Various constraints felt by Indian SSIs to become competitive in the market are given in Table 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 et al., 1995) but in India, poor infrastructure, red tapism and various government policies are still considered as main barriers for the growth of the industry.

**Table 1 Business Cost elements for SSIs**

SN	Elements of Cost	Level of Concern to your company			In Comparison to global Competitor		
		Mean	SD	T	Mean	SD	T
	Labor	2.35	0.78	-7.12#	1.64	.72	-14.44#
	Material	2.92	0.70	-1.0	2.29	1.09	-4.93#
	Energy	2.75	0.81	-2.59#	2.32	1.11	-4.56#
	Packaging	2.61	0.78	-4.23#	2.14	.99	-6.41#
	Transportation	2.81	0.72	-2.28#	2.34	1.14	-4.25#
	Warehousing	2.60	0.87	-3.83#	2.18	1.05	-5.87#
	Distribution	2.79	1.02	-1.76	2.04	1.00	-7.15#

# Significantly lower than moderate value at  $p < 0.05$



Table 2: Pressures on SSIs

SN	Pressures from customer/market	Mean	SD	t value
	To reduce cost	3.62	1.08	4.90*
	To improve quality	3.45	1.01	3.81*
	To increase range of products	3.25	.94	2.24*
	To reduce delivery time	3.28	1.08	2.26*
	Frequent change in supply schedules	2.73	1.13	-2.06#
	To deliver in small lots	2.54	1.10	-3.59#

\* Significantly higher than moderate value and # significantly lower than moderate value at  $p < 0.05$ 

Table 3: Constraints of SSIs

SN	Constraints to become competitive	Mean	SD	t value
i	Inadequate governmental support/incentives	2.61	1.26	-2.64#
ii.	Shortage of technical man power	2.50	1.13	-3.82#
iii.	Raising funds from market	2.47	1.17	-3.81#
iv.	Poor financial position	2.49	1.07	-4.05#
v.	Lack of quality consciousness	2.41	1.10	-4.56#
vi.	Underutilization of capacity	2.38	1.05	-5.02#
vii.	Lack of growth conducive environment	2.66	1.15	-2.48#
viii.	Poor infrastructure for training	2.53	1.25	-3.19#
ix.	Poor brand image	2.37	1.12	-4.75#
x.	Unreliable Vendors	2.36	1.18	-4.60#
xi.	Lack of support from customers	2.48	1.11	-4.02#

# Significantly lower than moderate value at  $p < 0.05$ 

## II. DISCUSSION

### Strategy Development by Indian SSIs

According to Eren Errin (2004), in order to compete with their competitors, firms have to develop competitive strategies. Competitive strategy is a long-term phenomenon. A firm can not have a strategy of a month. Organizations need to develop their competencies proactively. As SSIs have many resource constraints therefore SSIs should make investments carefully for developing effective strategies. Strategies adopted by SSIs for competency development and making investment in various areas will be discussed in the following sections.

### Development of Competencies

Chaston and Mangles (1997) have found that the areas of competence concerned with new product development, human resource management practices, organizational productivity and the management of quality etc. According to Nonaka and Takeuchi (1995) knowledge and skills have become company's means to gain a competitive advantage because it will help in developing various competencies by organizations for sustaining their market position.

Results of competencies development by SSIs are given in Table 4. 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.

Table 4 Development of Competencies by SSIs

SN	Competencies	In past three years			In next three years		
		Mean	SD	t value	Mean	SD	t value
i.	To identify niches	2.94	1.09	-0.44	<b>3.48</b>	<b>1.04</b>	3.78*
ii.	To develop new products	3.41	0.99	3.52*	<b>3.74</b>	<b>0.99</b>	6.14*
iii.	To optimize work environment	3.47	0.86	4.42*	<b>3.74</b>	<b>0.85</b>	6.89*
iv.	To use customer to define quality standards	3.48	0.84	4.79*	<b>3.83</b>	<b>0.91</b>	7.57*
v.	To introduce new technology	3.31	1.07	2.46*	<b>3.81</b>	<b>0.93</b>	7.14*
vi.	To use information to optimize decisions	3.54	1.02	4.47*	<b>3.94</b>	<b>0.94</b>	8.22*
vii.	To identify market changes	3.43	0.91	3.94*	<b>3.99</b>	<b>0.92</b>	8.81*

\* Significantly higher than moderate value at  $p < 0.05$ 

## Investments Priorities

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).

It is also commonly reported that quality and consistency of the manufacturing performance of SSIs can be improved as a consequence of the use of the most appropriate information technology (IT) tools without any major changes in business practices, manufacturing operations or the production facilities (Chan and Tang, 1995). 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.

In this study, Research and development, Automation of processes, Information technology, Training of employees, Welfare of employees, Market research and Advertisement were considered as potential areas of investment. Respondents were asked to prioritize these areas. The results of this study regarding investment priorities are shown in Table 5. It is observed that 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 globalization. In past, employees turn over and poor R&D had been the major problems for SSIs but observations of this study shows that now SSIs are giving due focus on these areas also. This is a new change observed in context of SSIs.

Above findings show that level of investments in some areas is not at moderate level. Specifically in areas of information technology, training of employees and advertisement, it is significantly less than moderate level. Correlation analysis (Table 5) shows that Research and development, Information technology and Training of employees are significantly correlated with competitiveness of organization. Study made by Oyelaran-Oyeyinka (2004) also observed that internal training opportunities greatly contribute in improving the performance of organization. Findings of this study also imply that SSIs should focus on developing their human resource and IT applications to improve their performance.

Table 5 Investments Priorities of SSIs

SN	Investments	During past three Years			Relationship with Competitiveness
		Mean	SD	t value	Correlation Coefficient
	Research and development	2.85	1.19	-1.07	0.311*
	Automation of processes	2.78	1.11	-1.69	-0.180
	Information technology	2.29	1.12	-5.37	0.287*

	Training of employees	2.49	1.00	-4.32	0.365**
	Welfare of employees	3.00	0.90	0.00	0.235
	Market research	3.07	1.171	0.50	0.098
	Advertisement	2.52	1.026	-3.93	0.083

\* Correlation is significant at  $p < 0.05$ , \*\* Correlation is significant at  $p < 0.01$

#### Results

##### Performance and Competitiveness

Neely et al. (1994) defined performance measurement as the process of quantifying the efficiency and effectiveness of manufacturing system. Performance of an enterprise is often measured as a ratio of output to input. The outputs constitute the products of the enterprise and the inputs are the resources used by the enterprise (Choudhary, 2001). For measuring performance both subjective and objective measures are considered. Performance of an organization relative to its industry standards is termed as its competitiveness (Ghemawat, 1990).

Subjective performance of responding Indian SSIs in comparison to national standards is given in Table 6. Respondents were asked to mark their performance in comparison to national standards on five point Likert scale (1-Very inferior, 2-Inferior 3-Equal, 4-High, 5-Very high) for various measures. Performance of Indian SSIs in comparison to national standards is significantly higher than moderate level for measures such as manufacturing cost, level of inventory, delivery speed, percentage rejection, employee turnover rate, customer satisfaction and supplier satisfaction. In comparison to international competitors, performance of SSIs is significantly lower than moderate value in most of the measures. Objective performance is measured in terms of average percentage change in past three years on certain financial parameters such as market share, return on investment, profit after tax, sales turn over and export. Objective performance of SSIs is given in Table 7. 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 turn over.

Competitiveness of SSIs is measured at three levels i.e. local, national and international. Results are given in Table 8. SSIs have highest competitiveness at local level and lowest competitiveness at International level. This is because most of the SSIs are working in local market and not thinking to enter in international market due to their constraints of finance, technology and infrastructure etc. Although trend is changing as SSIs have started working in partnerships with larger organizations and thinking to enter in global market.

**Table 6 Comparative Performance of SSIs**

SN	Measures	In comparison to the national competitors			In comparison to the international competitors		
		Mean	SD	t value	Mean	SD	t value
i.	Manufacturing cost	3.37	0.73	4.15	2.61	0.82	-3.89
ii.	Level of inventory	3.24	0.74	2.64	2.33	0.77	-7.02
iii.	Delivery speed	3.40	0.69	4.72	2.49	1.15	-3.27
iv.	Flexibility in production	2.90	0.99	-0.85	2.29	1.17	-4.51
v.	Percentage rejection	3.66	0.82	6.64	2.52	0.77	-5.12
vi.	Labor productivity	3.00	0.87	0.00	2.24	0.91	-6.13
vii.	i Capacity utilization	2.91	0.95	-0.77	2.19	0.97	-6.16
viii.	v Employee turnover rate	3.37	0.81	3.75	2.42	0.77	-6.11
ix.	Throughput (Rs/hr)	2.59	0.92	-3.48	2.08	1.05	-6.21
x.	Employee satisfaction	3.06	0.91	0.53	2.52	1.11	-3.18
xi.	Customer satisfaction	3.53	0.97	4.50	2.71	1.08	-1.99
xii.	Suppliers satisfaction	3.40	0.84	3.81	2.70	1.18	-1.79

**Table 7 Growth Oriented Performance**

SN	Parameters	Mean	SD	t value	Sig
i.	Market share	3.41	0.61	4.854	0.000
ii.	Sales turn over	3.54	0.61	6.519	0.000
iii.	Profit after tax	3.39	0.63	4.558	0.000
iv.	Return on investment	3.35	0.56	4.489	0.000
v.	Export	3.15	0.36	2.38	0.023

**Table 8 Competitiveness at different levels**

SN	Level	Mean	SD	T
i.	Local	3.55	0.97	4.782*
ii.	National	3.01	1.01	0.12
iii.	International	2.05	1.16	-6.57#

### III. CONCLUSIONS

- 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.

Although this paper has contributed significantly in finding major pressures and constraints, key areas of investment, competency development and performance of SSIs but present study has got some limitations. All regions of India have not been represented uniformly and only few areas of strategy development have been considered. Further scope for this study may include consideration of other areas of strategy development and their effect on SSIs performance.

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