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SMALL-SCALE INDUSTRIES IN THE ERA OF GLOBALISATION: AN EXPLORATIVE STUDY

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Small-Scale Industries in the Era of Globalisation: An Explorative Study

M Jaya Krishna*

Abstract

The main focus of this paper is to assess the level of awareness about WTO and its agreements, and to identify the factors contributing to the sales turnover of the small-scale industries in Karnataka. The paper has used both qualitative and quantitative data for the period 1999–02 as well as descriptive statistics and multiple regression for analysis. The paper found poor awareness among entrepreneurs about WTO agreements and its implication, growth rates are positive but inconsistent among classifications, and investments on technology, working capital and workers contribute significantly to sales turnover. The paper suggests providing modern technology, infrastructure and marketing support and also inviting foreign investment.

Introduction

Small-Scale Industries[1] (SSIs) have acquired a prominent place in shaping the economy of India since Independence. Historically, SSIs have had a special place in developmental policy by generating employment, production and income through widely dispersed sectors across different geographical locations of our country. Today, they account for almost 40 per cent of the total industrial production, about 80 per cent of industrial employment and 35 per cent of exports of India (GoI, 2001; Naik, 2002). In addition, they account for about 95 per cent of all industrial units, which provide employment to 186.8 lakh people spread over 34 lakh units all over the country. Thus, SSIs have a major role to play in accomplishing the potential national export target of US $ 80.5 billions in 2006–07 (Narayana, 2002).

Small-scale industries[2] cover a wide range of products (8,000), which include modern and traditional sectors. Of which, 836 items of 1045 products account for 13 per cent which are reserved (Hussain, 1997). Of late, the total number of items reserved for SSIs have come down to 674 in India's budget of 2003–04 (GoI, 2003). In contrast to this, the

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number of items on the Open General License (OGL) have increased from 478 during 1998–99 to 714 during 2001–02. However, in spite of special patronage by both Central and State governments, SSIs have remained mostly tiny, traditional and lack the competitive spirit (Ayyar, 1994; GoI, 1997). SSIs survive in India due to product and geographical market segmentation and policy protection. In the era of liberalisation and globalisation, this role of segmentation and government protection is getting reduced (Tendulkar and Bhavani, 1997). In short, government policies on SSIs clearly bring out the shift from 'protection-led growth' to 'competition-led growth'.

At the national level, there has been a steady increase in the growth of production in the SSI sector, which peaked in 1995–96 at 11.4 per cent from 3.1 per cent in 1991–92 and thereafter declined to 8.43 per cent in 1997–98 and to 8.1 per cent in 2000–01 (Singh, 2001). On the export front, the growth shows a worsening trend. It registered a growth of 17.7 per cent in 1995–96 from 43.7 per cent during 1991–92. It fell to 2.7 per cent in 1998–99 and recovered to 5 per cent in 2000–01. As far as employment is concerned, SSIs accounted for 3.6 per cent of the total industrial employment in 1991-92, increased to 4.1 per cent in 1995–96, fell to 2.6 per cent in 1998–99 and again increased to 4 per cent in 2000–01 (GoI, 2001). Unfortunately, in the recent past, the Indian economy has been facing several external and internal shocks, whose impact is seen in the fall of growth of employment, production and exports, of SSIs in particular, and industry in general. An external shock includes the East Asian crisis of 1997–98 and the oil price increase of 2000–01. Internal shocks comprise natural disasters and consecutive years of poor agricultural performance due to monsoon failures. Added to these, the global economy has been going through an overall depression, which has been reflected in an output growth of 2.4 per cent for the past few years. Despite the above, SSIs registered a higher growth rate than the entire industrial sector during 2002–03. In general, they account for 3.8 per cent of unit growth, 7.5 per cent of production and 3.9 per cent of employment (GoI, 2002).

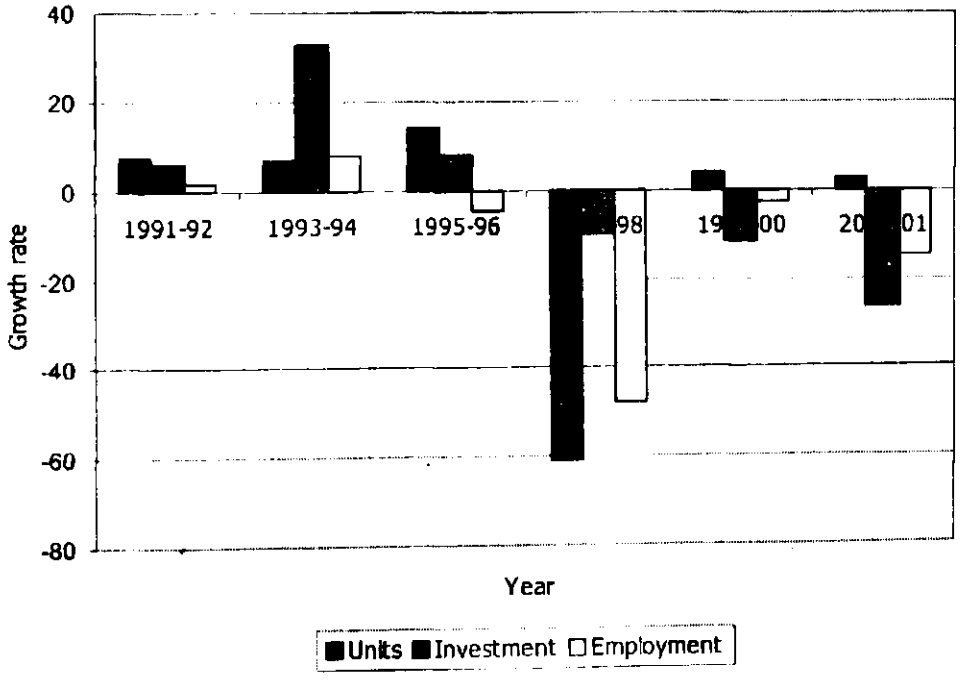
Karnataka is one of the top industrialised states of India where SSIs play a major role in exports, employment generation and providing ancillary services to medium and large-scale industries over the past few decades. SSIs also contribute significantly to the state's domestic product. Further, Karnataka[3] has been a pioneer in industry and has achieved pride of place in the global market with Information Technology (IT) related industries and biotechnology, and strong research and development institutions, which come under the SSI category. This is evident from the growth of total number of registered SSIs from 9,700 units in 1989–90 to 15,938 units in 1999–00 and to 16,554 units in 2000–01. Correspondingly, the total investment (or employment) has increased from Rs.112.47 crore (or 51,521 persons) in 1989–90 to Rs.737.06 crore (or 88,279 persons)

in 1999–00. It declined to Rs.651.58 crore (or 85,792 persons) in 2000–01 (GoK, 2001 and 2002). The rate of growth of SSI units, investment and employment is shown in Figure 1. However, there has been a general deceleration in industrial activity in the country, which, over the last few years, has had its impact on the industrial sector of Karnataka also except for 1993–94 (see graph). In spite of modified comprehensive industrial policy in 2001 with focus on harnessing the resources of the SSI sector to its optimality and provision for private sector participation, Karnataka registered a decline in investment to the tune of Rs.478.84 crore and in employment to 73,195 persons in 2001–02 (GoK, 2003).

Need for the Study

The World Trade Organisation (WTO) regulates multilateral trade agreements of its member countries, disciplines import quotas and other import restrictions, reduces import tariffs, and insists on removal of subsidies and concessions for export of domestic goods by 2003 (Kumar, 2000). This has opened up competition from foreign industries (particularly after withdrawal of government protection) with the import of quality goods from the advanced countries and inexpensive goods from other developing countries. In this context, though this sector shows substantial progress in terms of its contribution to the economy, it is important to know how SSIs in India are coping with the present new challenges being posed to them. Further, it is essential to gauge the future scenario of SSIs and determine policy alternatives for dealing with problems.

Figure 1 Rate of Growth of SSI units, Investment and Employment in Karnataka



Objectives of the Study

With the above background, the specific objectives formulated for the present study are: (a) to assess the awareness of WTO and its agreements among small-scale industrialists; (b) to analyse the growth and performance of SSIs by generation of the entrepreneurs and year of establishment of the units; and (c) to estimate the factors contributing to the sales turnover of the SSIs. Keeping in view these objectives, the paper is organised as follows: First, an introductory note is provided, followed by a discussion on the methodology of the study. Next, a brief overview of the WTO is provided, followed by the general implications of WTO agreements on SSIs. Finally, the findings of the study are discussed, conclusions following therefrom are noted, and the implications of the study are presented.

Methodology

Study Area and Sample Size

The primary database for this study is drawn from a small sample survey, conducted in and around Bangalore rural and urban districts of Karnataka during May–June, 2002, as part of pre-testing for a large study undertaken at ISEC, Bangalore. These districts occupy a distinct position in terms of industralisation of the State. Further, SSIs in the Bangalore districts accounted for 21.1 per cent of units, 31.5 per cent of investment and 31.9 per cent of employment generation in the State during 2000–01. Thus, this study may have implications for urban industries in Karnataka, in particular, and elsewhere in the country, in general. Indeed, the survey covered 38 randomly selected registered SSI units of which 26 units provided all the required information. Of the selected 26 sample units, 7 units were established after 1994 and the remaining units before 1995. Likewise, first-generation entrepreneurs accounted for 15 units, and while the remaining were set up by earlier entrepreneurs. However, since the IT industry comes under the service sector, as such WTO agreements will not apply to this sector.

Framework for Descriptive Analysis

In order to assess the entrepreneurs' awareness about WTO implications, performance of small-scale industries, and factors contributing to sales turnover, a structured questionnaire was circulated among selected entrepreneurs. In addition, information was collected on components of investment and expenditure, production, imports, concessions and subsidies, and internal and external sales in lakhs of rupees between 1999–00 and 2001–02. However, information on employment was collected only for the latest year 2001–02. The study collected recent

data on size of employment because entrepreneurs report the same size for all the years. In fact, information on the order of generation status of entrepreneurs and infrastructure availability was collected through informal discussions with the sample entrepreneurs.

The data are analysed using descriptive statistics, such as percentages, ratios, growth rates by generation of the entrepreneurs and the year of establishment of the unit before or since 1995. In addition, infrastructure index[6] (II) is measured using the scaling technique.

Framework for Cross-Section Analysis

To estimate the factors contributing to output, conventional production function analysis is used. Sales turnover (Y) is used as a dependent variable from the collected information on sample SSI units. This is defined as the total output produced (at current prices) during the reference year 2001–02. The main reason to consider total sales turnover is that the production of most of these SSIs is order-based with competitive price regime and quality. Here, along with the conventional variables like capital and labour, the study has taken investment on technological upgradation of firms as an independent variable.

Accordingly, production function is written as

$$Y = f(K, L, T), \qquad (1)$$

where K = PM + WC, L = M + W and T = TUG.

The production function in equation (1) can be rewritten as,

$$Y = f(PM, WC, M, W, TUG). \qquad (2)$$

Further, the study has considered qualitative variables, namely the generation of the entrepreneurs and year of establishment of the unit before or since 1995, as independent variables, since they reflect the nature of decision-making of the entrepreneurs regarding investments, marketing strategies, recruitment, certifications, quality and price of the product. Again equation (2) is modified as,

$$Y = f(GE, M, PM, TUG, WC, W, YE) \qquad (3)$$

where

Y = total sales turnover,

GE = generation of the entrepreneurs where 1 stands for old generation, entrepreneurs; 0 for otherwise,

M = total number of managerial staff,

PM = proportion of investment on plant and machinery to total investment,

TUG = investment on technology upgradation,

WC = per cent of working capital to total output,

W = total number of workers,

YE = year of establishment where 1 stands for units established before 1995; 0 for otherwise.

In short, the above arguments can be summarised and presented as follows:

$$Y = \alpha_0 + \beta_1 PM + \beta_2 WC + \gamma_1 M + \gamma_2 W + \theta_1 TUG + \delta_1 GE + \delta_2 YE + \varepsilon, \quad (4)$$

where ε is disturbance term.

WTO: An Overview

WTO is a global international organisation dealing with the rules and regulations of trade between member nations. The core of WTO is in its framework agreements and negotiations, which are signed and legally approved by the 145 members (WTO, 2003). The main objective behind these agreements and negotiations is support to producers of goods and services, intellectual property rights, exports and imports (Bhalla, 1996). Historically, the base of WTO lies in the General Agreement on Tariffs and Trade (GATT). The WTO, the successor to GATT, is rapidly establishing itself as the third pillar of the Bretton Woods Institutions alongside the International Monetary Fund (IMF) and the World Bank (International Bank for Reconstruction and Development) which were established in July 1944. Interestingly, India was one of the 23 founder members. Due to resistance from the US Senate, the International Trade Organisation (ITO) could not be established along with the other two institutions, which came into existence on December 27, 1945. However, in its place a protocol of provisional applications (GATT) was signed on January 1, 1948. GATT was only a multilateral adhoc body to provide rules for world trade from 1948 to 1994. The Uruguay Round, the 8th round of talks under GATT during 1986 to 1994, led to the birth of the WTO on January 1, 1995 (Bhandari, 2002). India is a founder-member of this organisation. Today, GATT is the WTOs principal rulebook for trade in goods and services. In addition, the Uruguay Round created new rules for dealing with trade in services, relevant aspects of intellectual property rights, dispute settlement and trade policy reviews. The complete set of WTO agreements and negotiations run to some 30,000 pages consisting of about 60 agreements and separate schedules made by individual members in specific

areas such as lowering of customs duty rates and market-opening for services (WTO, 2002).

WTO has underlined six fundamentals, namely, club of nations, free trade among countries, non-restrictive trade with some exceptions, tariffs based on bound rates after negotiations, dismantling of non-tariff barriers and all countries to be accorded Most Favoured Nation[4] (MFN) status (Gupta, 2000). In general, it is a regulatory body of world trade to ensure free, transparent and predictable trading regimes in the world. In addition, WTO monitors compliance by member countries with a number of agreements, which collectively govern multiple dimensions of trade relationship among member countries. Further, it acts as a dispute settlement body over conflicts arising from actions taken by countries in violation of agreements. Therefore, all the member countries are bound to honour their commitments to different trade agreements under the WTO. However, the crucial question relating to WTO is what sort of trade regime it seeks to promote and to what extent the new discipline can safeguard the export interests of member countries.

General Implications of WTO on SSIs

Implications of WTO and its agreements on SSIs are not different from its implications to industry in general because they comprise the major part of Indian industry. As mentioned above, SSIs contribute about 54 per cent of non-traditional and 10 per cent of traditional product exports (taken together about 35 per cent of total exports of our country). However, SSIs have to face threats and also avail opportunities owing to WTO and its agreements. The main opportunities of the WTO are (a) national treatment (or MFN) for exportable items all over the world with better market access through Internet; (b) enlightened entrepreneurs have greater opportunities to benefit from their comparative advantages due to lowering of tariffs and dismantling of other restrictions; (c) industries that are in constant touch with Government, which in turn negotiates the best of their interests in the on-going dialogue with WTO, are going to benefit (Laghu Udyog, 2003). However, India has a real chance of becoming a superpower is service sector, particularly IT. It has already captured about 25 percent of world exports.

On the other hand, the negative effects are the following : (i) SSIs have to face competition by way of cheap imports from different countries due to the removal of Quantitative Restrictions[5] (QRs) on imports and lowering of tariffs. As a result, every single individual enterprise, small or big, whether exporting or serving the domestic market, has to face competition. (ii) OGL opens up the possibility of direct competition in the domestic market with the imports of high quality goods from developed countries and cheap products from other less developed countries (Bhavani, 2002). Subsequently, entry of multinational companies intensifies

competition in the domestic market. However, Indian SSIs are not in a position to compete with others due to in-built weaknesses like poor quality, costly credit, weak infrastructure, traditional technology, inflexible labour laws, lack of information and international exposure, and ineffective associations. (iii) Export market will become tougher because of competition among developing countries with similar comparative advantages.

In view of the above, WTO agreements suggest ways by which some of the adverse consequences could be neutralized. These are the use of Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS), Agreement on Trade-Related Investment Measures (TRIMS), and stringent hygienic, environmental and labour standards. In addition, these agreements themselves provide for certain in-built safety mechanisms like anti-dumping, countervailing and safeguard measures. Further, strict vigilance at the ports of entry is required to ensure that imported goods are as per quality standards are invoiced and carry the name of the manufacturer and maximum retail price (WTO, 1998b). Interestingly, WTO prohibits subsidies, which directly affect price competition of the product. However, it helps activities of common interest, which act as an indirect way of subsidy to the enterprise.

Findings of the Study

Before presenting the awareness levels of entrepreneurs and performance of units, some general characteristics of sample units is given in Table 1. The table reveals that the majority of the units belong to the manufacturing sector (61.5 per cent) and are perennial (92.3 per cent) in nature. Interestingly, 19 units were established before 1995 and only 11 belong to first generation entrepreneurs. Further, the majority of units are owned by limited companies (12 units) followed by proprietorship (9 units). The study brings out that first generation entrepreneurs employ more managerial staff than workers, thereby implying that there is a demand for skilled and managerial personnel by first generation entrepreneurs. In addition the study also found that all the sample units maintain accounts.

Table 1: General Characteristics of Sample SSI Units

Characteristics	Total Units	Units established since 1995	Units established before 1995	First generation entrepreneurs	Older generation entrepreneurs
1. Nature of units:					
a. Ancillary	5 (19.2)	3 (42.8)	2 (10.5)	3 (20.0)	2 (18.2)
b. Manufacturing	16 (61.5)	3 (42.8)	13 (88.4)	8 (53.3)	8 (72.7)
c. Both	5 (19.2)	1 (14.4)	4 (21.1)	4 (26.7)	1 (09.1)
Total	26 (100)	7 (100)	19 (100)	15 (100)	11 (100)
2. Nature of operation:					
a. Perennial	24 (92.3)	7 (100)	17 (89.2)	15 (100)	9 (81.8)
b. Seasonal	2 (07.7)	0 (0.0)	2 (07.7)	0 (0.0)	2 (18.2)
Total	26 (100)	7 (100)	19 (100)	15 (100)	11 (100)
3. Type of ownership:					
a. Limited company	12 (46.2)	6 (85.7)	6 (31.6)	8 (53.3)	4 (36.4)
b. Partnership	5 (19.2)	1 (14.3)	4 (21.1)	2 (13.3)	3 (27.3)
c. Proprietary	9 (34.6)	0 (0.0)	9 (47.4)	5 (33.3)	4 (36.4)
Total	26 (100)	7 (100)	19 (100)	15 (100)	11 (100)
4. Staff and workers:	1,784 (100)	399 (100)	1,385 (100)	652 (100)	1,132 (100)
a. Managerial staff	226 (12.7)	82 (20.5)	144 (10.4)	148 (22.7)	78 (6.9)
b. Workers	1,558 (87.3)	317 (79.5)	1,241 (89.6)	504 (77.3)	1,054 (93.1)

Note: Figures in parentheses are percentage of total.

The distinct features of the distribution of the membership or/and registration-wise status of the units are shown in Table 2. It can be seen from the table that the units established after 1994 and first generation and units established before 1995 and older generation entrepreneurs have notable similarities in the membership and registration status. Regarding membership of units to industrial associations most are affiliated to the Karnataka Small Scale Industries Association (KASSIA), and the others to the Department of Industries and Commerce. Registration with SSI is permitted after a few years of initial production, which is reflected in the number of registrations of units established after 1994. Likewise, most sample units are registered under the Sales Tax Act followed by the Factories Act and Central Excise. As compared to units established after 1994, the majority of the units is registered under Central Excise and Factories Act. Compared to other categories of units, older generation entrepreneurs give less importance to the Employees State Insurance Corporation (ESI) membership, which is beneficial to employees.

Opinions of entrepreneurs on trade barriers are shown in Table 3. It can be observed from the table that the units established before 1995 and first generation entrepreneurs are facing sanitary and phytosanitary[7] barriers in exporting. In contrast, units established after 1994 and older generation entrepreneurs face the problem of dumping[8] by foreign producers in the domestic market. Interestingly, entrepreneurs face very little Pre-Shipment Inspection[9] (PSI) and tariff barriers in exporting. However, entrepreneurs opine that trade barriers are more or less similar across generations and the year of establishment.

Table 2: Membership / Registration Status of Sample SSI Units

Characteristics	Total Units	Units established since 1994	Units established before 1995	First generation entrepreneurs	Older generation entrepreneurs
1. Registration status:					
a. Central Excise	14 (53.8)	5 (71.4)	9 (47.4)	7 (46.7)	7 (63.6)
b. Factory Act	15 (57.7)	6 (85.7)	9 (47.4)	9 (60.0)	6 (54.6)
c. Karnataka State Pollution Control Board	10 (38.5)	5 (71.4)	5 (26.3)	6 (39.9)	4 (36.4)
d. National Small Industries Corporation	3 (11.5)	0 (0.0)	3 (15.8)	1 (06.6)	2 (18.2)
e. Sales tax	23 (88.5)	5 (71.4)	18 (94.7)	12 (80.0)	11(100)
2. Member of Industrial Association:					
a. Department of Industries and Commerce	21 (80.8)	3 (42.8)	18 (94.7)	13 (86.7)	8 (72.7)
b. Industrial Area Association	18 (69.2)	6 (85.7)	12 (63.1)	9 (60.0)	9 (81.8)
c. Industrial Product Association	15 (57.7)	4 (57.1)	11 (57.9)	8 (53.3)	7 (63.6)
d. Karnataka Small Scale Industries Association	25 (96.2)	7 (100)	18 (94.7)	14 (93.3)	11 (100)
3. Other registrations / memberships:					
a. Municipality	20 (76.9)	5 (71.4)	15 (78.9)	11 (73.3)	9 (81.8)
b. Provident fund	18 (69.2)	5 (71.4)	13 (68.4)	10 (66.7)	8 (72.7)
c. Employees State Insurance Corporation	19 (73.1)	5 (71.4)	14 (73.7)	12 (80.0)	7 (63.6)

Note: Figures in parentheses are percentage of total.

Table 3: Opinions of Sample Entrepreneurs on the Nature of Trade Barriers

Nature of trade barrier	Total units	Units established after 1994	Units established before 1995	First generation entrepreneurs	Older generation entrepreneurs
1. Facing sanitary and phytosanitary barriers in exporting	6 (23.1)	1(14.3)	5 (26.3)	4 (26.7)	2 (18.2)
2. Facing problem of dumping by foreign producers in domestic markets	8 (30.8)	3 (42.8)	5 (26.3)	2 (20.0)	6 (45.5)
3. Facing problem of pre-shipment inspection in exporting	1 (3.8)	0 (0.0)	1 (5.3)	1 (0.0)	0 (9.1)
4. Facing the problem of tariff Barriers in exporting	2 (7.7)	0 (0.0)	2 (10.5)	1 (13.3)	1 (0.0)

Note: Figures in parentheses are percentage of total.

Most the entrepreneurs say that they are aware of the reservation policies for SSIs, and products placed under OGL, and of the WTO and its agreements across categories (Table 4). Surprisingly, around 50 per cent of the entrepreneurs (except units established after 1994) are not aware that their own product comes under the reserved list. Likewise, awareness about de-reservation policy for SSIs is high for units established after 1994 and first generation entrepreneurs compared to other categories of entrepreneurs. In addition, among various classifications of respondents, not many respondents are aware that their own product comes under de-reserved list. Similarly, some entrepreneurs are aware that their own products are placed under the OGL. However, most entrepreneurs of units established after 1994 are aware of their products coming under the OGL. Going by awareness indicators, most industrialists are aware of the fact that (a) SSI products are subject to removal of QRs on imports; and (b) removal of QRs is due to WTO commitments. On the whole, results show affinity between units established before 1995 and older generation entrepreneurs, and between the other two categories of entrepreneurs.

Opinions of the entrepreneurs on the nature of competition are presented in Table 5. It explains that the units established after 1994 and first generation entrepreneurs face more competition from larger- and medium scale industries within and outside the State. Further, they face competition due to removal of QRs on imports particularly since 1995. It implies that they are new entrepreneurs, they have to be competitive with all the existing players to capture the market. For that, they need internationally competitive quality and lower price regime and modern marketing strategies. Among the total units, 58 per cent felt that they were facing competition from outside the State.

Table 4: Awareness of Entrepreneurs about WTO Policies and Agreements

Policies and agreements	Total units	Units established after 1994	Units established before 1995	First generation entrepreneurs	Older generation entrepreneurs
1. Reservation policy for SSIs	21 (80.8)	6 (85.7)	15 (78.9)	12 (80.0)	9 (81.8)
2. De-reservation policy for SSIs	15 (57.7)	5 (71.4)	10 (52.6)	10 (66.7)	5 (45.5)
3. One's own product comes under reserve list	13 (50.0)	4 (71.4)	9 (47.4)	7 (46.7)	6 (54.5)
4. One's own product comes under de-reserved list	8 (30.8)	2 (28.6)	6 (31.6)	6 (40.0)	2 (18.2)
5. SSI products are placed under OGL	22 (84.6)	7 (100)	15 (78.9)	13 (86.7)	9 (81.8)
6. One's own product are placed under OGL	9 (34.6)	6 (85.7)	3 (15.8)	4 (26.7)	5 (45.5)
7. SSI products are subject to removal of QRs on imports	20 (76.9)	7 (100)	13 (68.4)	11 (73.3)	9 (81.8)
8. WTO and its agreements	22 (84.6)	7 (100)	15 (78.9)	13 (86.7)	9 (81.8)
9. Removal of QRs is due to WTO commitments	20 (76.9)	7 (100)	12 (63.2)	12 (80.0)	8 (73.7)

Note: Figures in parentheses are percentage of total.

Table 5: Opinions of Entrepreneurs on the Nature of Competition

Nature of competition	Total units	Units established after 1994	Units established before 1995	First generation entrepreneurs	Older generation entrepreneurs
1. Facing competition from large and medium-scale industries within the State	12 (46.2)	5 (71.4)	7 (36.8)	10 (66.7)	2 (18.2)
2. Facing competition from large and medium-scale industries outside the State	15 (57.7)	5 (71.4)	10 (52.6)	11 (73.3)	4 (36.4)
3. Facing competition due to introduction of OGL policy for SSI products	9 (34.6)	3 (42.8)	6 (31.6)	4 (26.7)	5 (45.5)
4. Facing competition due to removal of QRs on SSI products	7 (26.9)	2 (28.6)	5 (26.3)	6 (40.0)	1 (6.7)
5. Facing new competition since 1995 or establishment of WTO	9 (34.6)	3 (71.4)	7 (36.8)	7 (46.7)	2 (18.2)

Note: Figures in parentheses are percentage of total.

Informal discussions with the selected entrepreneurs helped to estimate the availability of infrastructure facilities in the study area. Infrastructure Index reveals that 11 older generation entrepreneurs are satisfied with the existing infrastructure facilities. In contrast to this, 2.7 per cent of first generation, 9 per cent of the sample units established before 1995 and 4.7 per cent of the units whose year of establishment was after 1994 are not satisfied with the existing infrastructure. It implies that older generation entrepreneurs acquired infrastructure facilities over the years due to localisation and gradual infrastructure development of industrial estates and places compared to others in the study.

As the sample units are heterogeneous in nature, computation for growth and performance is done for individual units by the year of establishment, which is presented in Table 6. The average growth rates are calculated for the years 1999-2000 to 2001-02. Growth rates reveal positive trends for most units other than thermo formers and telephone units. Automobile spares, chemicals and software units are doing well due to the fact that they are 100 per cent export oriented units (EOUs) (except the chemical industry which is partly so). Incense sticks enterprises (a traditional cottage industry) perform well both in the domestic and foreign markets. These industries import chemicals that are used as raw material (perfume). All the other export units show inconsistent growth rates over the period. This implies that they depend on agents or other medium or large-scale industries for product orders, which are irregular in nature. It is observed that telephone units mainly depend on Bharat Sanchar Nigam Limited (BSNL) orders.

Units established after 1994 spend at least about 50 per cent of their fixed investment[10] (FI) on plant and machinery (PM). Interestingly, electronic power supply units and engineering (established before 1995) units invest all their money on PM. It reveals that they have not spent on technological upgradation or pollution control equipment or quality control measures. As can be seen from Table 6, the proportion of working capital[11] to output is higher than 100 per cent for few units. This is due to two reasons (a) financially strong entrepreneurs buy inputs in large quantities in anticipation of price rise; and (b) units get sales collections in the next year. Likewise, units established after 1994 spend more on wages. In contrast, subsidies and concessions[12] availed by these units are less. This may be due to (a) subsidies and concessions gradually being removed by both Central and State governments due to WTO norms in the recent past, and (b) new entrepreneurs not being aware of or not being interested in these subsidies and concessions. A few profit-oriented entrepreneurs express that they can earn more money if they spend time on business rather than ongoing through the government procedures for petty subsidies and concessions.

Table 6 also shows productivity and intensity, and shows that labour productivity for the year 2001-02 is high in gear and gearboxes, generator

Table 6: Growth and Performance of Units by Year of Establishment before and since 1995

Product	Growth Rate of				PM%FI	WC%O	W%O	SC%O	O/L	O/K	K/L	L/K
	Output	Ds	Exports	Imports								
	Units established before 1995											
1. Incense sticks	4.3	1.2	22.9	17.0	13.3	52.6	3.8	2.0	4.0	10.7	0.4	2.7
2. Incense sticks	57.1	78.6	42.9	66.7	16.7	172.7	38.2	0.0	0.1	0.2	0.8	1.3
3. Automobile spares	79-3	0.0	79.3	0.0	14	64.6	12.1	1.3	7.3	23.2	0.3	3.2
4. Power loom machine	-10.8	20.1	0.0	0.0	71.4	98.1	3.1	0.0	0.4	0.5	0.8	1.3
5. Electronics power supply	16.7	36.0	2.9	0.0	100	112.4	20.0	0.0	4.7	1.4	3.3	0.3
6. Engineering items	100.0	100.0	0.0	0.0	100	94.4	5.8	0.0	3.0	17.1	0.2	5.7
7. Engineering works	36.7	36.7	0.0	0.0	66.7	30.4	3.7	0.0	1.5	0.7	2.3	0.4
8. Food processing	41.7	41.7	50.9	50.0	87	85.8	0.6	0.1	21.3	1.9	11.4	0.1
9. Footwear	4.0	4.0	0.0	-47.4	24.3	260.5	19.9	8.1	3.1	0.8	3.7	0.3
10. Garments	21.2	50.0	4.8	0.0	54.5	102.5	14.0	0.0	0.5	0.7	0.7	1.5
11. Gears and gear boxes	50.0	50.0	4.8	0.0	54.5	102.5	14.0	0.0	0.5	0.7	0.7	1.5
12. Generator sets	50.0	60.8	-41.2	0.0	50.2	79.4	1.4	0.0	70.6	10.0	7.0	0.1
13. Hydraulic blocks	-36.1	-36.1	0.0	0.0	32.7	109.3	37.0	0.0	1.0	0.5	2.1	0.5

Contd.

14. Machine tools	18.2	18.2	0.0	11.4	32.8	66.8	7.7	0.0	5.0	4.3	1.2	0.9
15. Machinery spares	56.0	56.0	0.0	0.0	32.9	55.5	2.3	0.0	6.5	1.3	5.1	0.2
16. Printing and packing	87.5	87.5	0.0	82.1	26.9	81.1	3.3	0.0	6.8	5.8	1.2	0.8
17. Silk	4.8	16.7	0.0	1.0	51.9	50.2	3.1	0.0	28.6	6.3	4.5	0.2
18. Suits and jackets	441.2	843.3	0.0	-28.2	76.2	114.6	13.8	12.3	1.3	1.4	0.9	1.1
19. Thermo formers	-12.1	-8.9	-16.5	-100.0	63.3	75.1	5.1	0.0	2.4	0.2	10.5	0.1
Units established after 1994												
20. Chemicals	233.3	0.0	3233.3	66.7	59.2	98.5	12.0	0.0	2.9	0.4	7.2	0.1
21. Garments	15.0	40.0	10.6	0.0	75	46.3	21.7	1.3	11.0	5.8	1.9	0.5
22. Food processing	150.0	150.0	0.0	0.0	88.9	180.4	15.2	0.0	2.1	1.9	1.1	0.9
23. Footwear	0.0	0.0	0.0	0.0	67.6	66.5	42.9	0.0	1.8	1.9	0.9	1.1
24. Software*	Infinite	0.0	0.0	0.0	40	6.5	4.8	0.0	82.1	4.6	17.9	0.1
25. Software	421.7	0.0	421.7	0.0	100	66.7	50.0	0.0	3.5	3.0	1.2	0.9
26. Telephones	-23.1	-16.7	-58.3	0.0	49.2	120.3	40.0	0.0	1.5	1.0	1.5	0.7

Notes: 1.* refers to a unit established in the year 2001 with initial investment of Rs. 145 lakhs and minimum staff but expected to do business in full swing soon.

2. FI refers to cumulative fixed investment till the year 2001-02.
3. Performance indicators are calculated as percentage or/and ratios for the reference year 2001-02.

Table 7: Growth and Performance of Units by Generation

Product	Growth Rate of				PM%FI	WC%O	W%O	SC%O	O/L	O/K	K/L	L/K
	Output	Ds	Exports	Imports								
	First generation entrepreneurs											
1. Automobile spares	79.3	0.0	79.3	0.0	14.0	64.61	12.1	1.35	7.3	23	0.3	3.2
2. Electronic power generators	16.7	36.0	2.9	0.0	100.0	112.43	20	0.00	4.7	1.4	3.3	0.3
3. Engineering items	100.0	100.0	0.0	0.0	100.0	94.42	5.83	0.00	3.0	17	0.2	5.7
4. Engineering works	36.7	36.7	0.0	0.0	66.7	30.40	3.69	0.00	1.5	0.7	2.3	0.4
5. Food processing	150	150	0.0	0.0	88.9	180.40	15.2	0.00	2.1	1.9	1.1	0.9
6. Footwear	0	0.0	0.0	0.0	67.6	66.54	42.9	0.00	1.8	1.9	0.9	1.1
7. Footwear	4.0	4.0	0.0	-47.4	24.3	260.53	19.9	8.06	3.1	0.8	3.7	0.3
8. Gear boxes	50.0	50.0	0.0	0.0	12.5	62.67	0.67	0.00	17.0	19	0.9	1.1
9. Hydraulic blocks	-36.1	-36.1	0.0	0.0	32.7	109.26	37.0	0.00	1.0	0.5	2.1	0.5
10. Machines tools	18.2	18.2	0.0	11.4	32.8	66.77	7.69	0.00	5.0	4.3	1.2	0.9
11. Printing and packing	87.5	87.5	0.0	82.1	26.9	81.08	3.33	0.00	6.8	5.8	1.2	08
12. Software*	Infinite	0.0	0.0	0.0	40.0	6.52	4.78	0.00	82.0	4.6	18	0.1
13. Software	421.7	0.0	421.7	0.0	100.0	66.67	50.0	0.00	3.5	3.0	1.2	0.9

Contd.

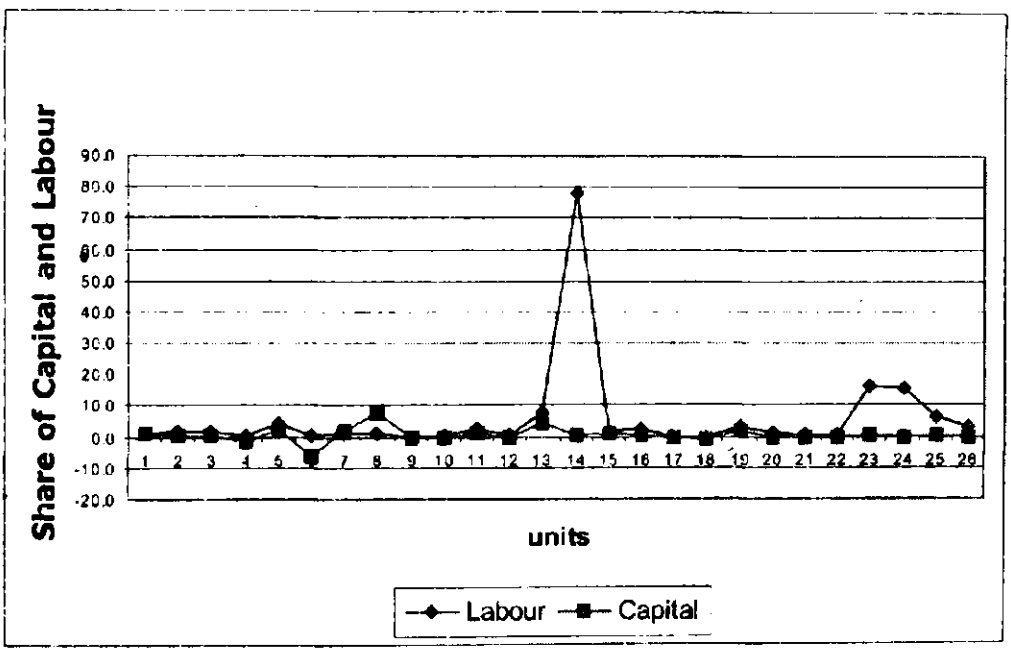
14. Suits and jackets	441.2	843.3	0.0	-28.3	76.2	111.58	13.8	12.35	1.3	1.4	0.9	1.1
15. Thermo formers	-12.1	-8.9	-16.5	-100.0	63.3	75.12	5.11	0.00	2.4	0.2	11.0	0.1
Older generation entrepreneurs												
16. Incense sticks	4.3	1.2	22.9	17.0	13.3	52.58	3.79	2.05	4.0	11.0	0.4	2.7
17. Incense sticks	57.1	78.6	42.9	66.7	16.7	172.73	38.2	0.00	0.1	0.2	0.8	1.3
18. Chemicals	233.3	0.0	323.3	66.7	59.2	98.50	12.0	0.00	2.9	0.4	7.2	0.1
19. Power loom machines	-10.8	20.09	0.0	0.0	71.4	98.09	3.06	0.00	0.4	0.5	0.8	1.3
20. Food processing	41.7	41.7	50.9	50.0	87.0	85.76	0.58	0.12	21.0	1.9	11.0	0.1
21. Garments	15.0	40.0	10.6	0.0	75.0	46.32	21.7	1.35	11.0	5.8	1.9	0.5
22. Garments	21.2	50.0	4.8	0.0	54.5	102.50	14.0	0.00	0.5	0.7	0.7	1.5
23. Generator sets	50.0	60.8	-41.2	0.0	50.2	79.43	1.38	0.00	71.0	10.0	7.0	0.1
24. Machinery spares	56.0	56.0	0.0	0.0	32.9	55.51	2.31	0.00	6.5	1.3	5.1	0.2
25. Silk	4.8	16.7	0.0	1.0	51.9	50.23	3.09	0.00	29.0	6.3	4.5	0.2
26. Telephones	-23.1	-16.7	-58.3	0.0	49.2	120.33	40.0	0.00	1.5	1.0	1.5	0.7

Notes: 1.* refers to a unit established in the year 2001 with initial investment of Rs. 145 lakhs and minimum staff but expected to do business in full swing soon.

2. FI refers to cumulative fixed investment till the year 2001-02.
3. Performance indicators are calculated as percentage or/and ratios for the reference year 2001-02.

sets, silk, garments and software as compared to other units. On the other hand, capital productivity is high in automobile spares and engineering item units. The result also reveals that there is inverse relationship between labour and capital productivity except in units like gearboxes and printing and packing. Interestingly, capital intensity is also high in food processing and thermo former units as compared to other units. Food processing units are supposed to be labour-intensive but in reality they are more capital intensive. It implies that capital has displaced labour in the recent past, where modern food outlets (like the pizza outlets) dominate. Further, units established before 1995 show more inconsistency in labour and capital productivity, and capital intensity than units established after 1994. Likewise, labour intensity is high among units established before 1995 compared to units established since 1995. It reveals that recent units are more capital intensive; this is natural since they have to keep up with national and/or international competitive standards.

Figure 2 Unit-Wise Share of Capital and Labour in GVA



Generation-wise growth and performance of sample SSI units are given in Table 7. It shows that older generation entrepreneurs are more exporting oriented than first-generation entrepreneurs. In addition, they are importing raw material because of lowers price and/or better quality, to compete in both internal and external markets. Investment of first-generation entrepreneurs on plant and machinery varies between units whereas older generation units are consistent except incense stick units. Ratio of working capital to output is also scattered between units but is

less in older generation units. Likewise, older generation entrepreneurs spend more money on wages. However, they avail less subsidies and concessions from the government. Further, labour and capital productive units are higher in the older generation compared to first generation entrepreneurs. In addition, capital intensity variation between generations is not considerable. As against this, labour intensity is more in first generations than old generation entrepreneurs. Among the older (first) generation entrepreneurial units, incense stick (engineering) units have high capital (labour) intensity compared to other units. Figure 2 shows unit-wise share of capital and labour in Gross Value Added[13] (GVA). It reveals that labour adds very high value to suits and jackets units which are exporters to America, followed by the generators sets and machinery spare units but all the other units add equally in terms of capital and labour.

Table 8 presents descriptive statistics, namely arithmetic mean, standard deviation, coefficient of variation, minimum and maximum for the quantitative variables. It clearly indicates the nature and extent of dispersion of data of the variables MSTAFF, PM, TS, TUG, WC and WORKERS. Few remarks on these results deserve special mention. First of all, the arithmetic mean and the degree on absolute dispersion or standard deviation for TS (or MSTAFF) are the highest (or lowest). Second, in terms of relative variation or coefficients of variation, the largest (or smallest) is evident for TUG (or MSTAFF). Third, the range of observations varies widely as shown by the minimum and maximum values for different variables. Fourth, the minimum values for TUG is zero. This indicates that there was at least one sample unit, which did not spend on technology upgradation. Fifth, number of workers (i.e. WORKERS) is the maximum in beedi factories, which is labour intensive in nature.

Table 8: Descriptive Statistics: Select Measures of Central Tendency and Dispersion

Variables	Mean	Standard Deviation	Coefficient of Variation	Minimum	Maximum
MSTAFF	8.69	11.77	1.36	1.00	51.00
PM	94.33	161.48	1.71	0.70	790.00
TS	561.28	869.56	1.55	11.00	2400.00
TUG	13.33	25.25	1.89	0.00	100.00
WC	417.61	710.57	1.70	9.07	2838.37
WORKERS	59.82	86.35	1.44	1.00	375.00

Table 9 reveals the nature and degree of linear relationships between the quantitative variables in the estimations in terms of simple correlation coefficients. In particular, WC has relatively high degree of positively correlated coefficients. However, relatively high (or low) degree of linear

relationship is found between WORKERS and MSTAFF (or WORKERS and TUG). In fact, the relationship is negative between TUG and WORKERS.

Table 9: Matrix of Simple Correlation Co-efficient

Variables	MSTAFF	PM	TS	TUG	WC	WORKERS
MSTAFF	1.00					
PM	0.08	1.00				
TS	0.20	0.42	1.00			
TUG	0.41	0.16	0.39	1.00		
WC	0.45	0.35	0.42	0.25	1.00	
WORKERS	0.23	0.17	0.37	-0.19	0.27	1.00

Since data is cross sectional, the problem of heteroskedasticity is likely to be more common. Therefore, the estimation results of multiple regression models are adjusted using a heteroskedasticity-consistent covariance matrix. It is apparent that the investment on TUG and WC contributes significantly to sales turnover in all the estimations (see Table 10). Likewise, the only other coefficient, which is significant in all the estimations except Model 1, is W. It means that units have to upgrade technology and the skill of the workers to improve both quality and productivity, otherwise they will be gradually eliminated from the market by other competing firms. Further, units need timely working capital on par with other significant contributing factors. The coefficients for GE, M, PM, YE as well as the intercept term are statistically insignificant in all the estimations. Further, the overall explanatory power of the model is that around 48 per cent of the variation in TS is explained by the variables included in the estimation. Interestingly, among insignificant variables GE contributes to sales turn over at 18 per cent level of significance. In fact, in all the estimations, the F-statistics is significant at 5% level. Of these estimations, the results in model 3 are more plausible than the other estimations for many reasons. First, for satisfying the sign conditions for coefficients. Second, for having a large number of statistically significant coefficients. Third, for having the highest explanatory power of the model in terms of R2 (0.4854) and lowest standard error of regression.

Table 10: Estimates of Turnover Function--Regression Results

Dependent Variable: TS

Explanatory Variables	Models				
	Model 1	Model 2	Model 3	Model 4	Model 5
Constant	460.25 (1.03)	450.36 (1.03)	552.21 (1.51)	198.85 (0.40)	90.30 (0.20)
GE	-484.02 (-1.36)	-409.34 (-1.11)	-473.74 (-1.35)	-422.54 (-1.11)	
M	18.75 (1.00)		16.27 (1.05)		11.35 (0.61)
PM				328.13 (0.81)	303.13 (0.68)
TUG	14.94** (2.05)	17.84*** (2.88)	14.64* (1.90)	18.83*** (2.87)	17.86** (2.38)
WC	-2.17** (-2.35)	-1.32*** (-2.68)	-1.99*** (-2.95)	-1.27** (-2.47)	-2.03** (-2.46)
W	2.76 (1.30)	3.75** (2.34)	2.93* (1.76)	3.88** (2.33)	4.30* (1.94)
YE	140.54 (0.33)	51.84 (0.15)		127.08 (0.33)	173.32 (0.39)
R^2	0.4811	0.4648	0.4854	0.4738	0.4322
Standard Error of Regression	719.7589	715.4621	704.48	727.8648	756.0359
F-Statistic	2.9872**	3.4736**	3.71**	2.8509**	2.4108***
No. of Observations	26	26	26	26	26

Notes: 1. Figures in parentheses are the t-ratios.

2. *** (*) indicate(s) that the co-efficient is significant at 1% (or 10%), and ** for 5% levels.

Conclusion and Implications

The main focus of this paper is to assess the awareness, growth and performance of SSI units and identify the factors contributing to sales turnover. The study has used both qualitative and quantitative data as well as descriptive statistics and multiple regression for analysis. The study has found the following: (a) Entrepreneurs are experiencing the implications of WTO and its agreements by classifications; however, awareness about WTO agreements and its implications is poor. (b) Entrepreneurs are not satisfied with the existing infrastructure availability. (c) Growth rates of output, domestic sales, exports and imports are positive for most of the units but inconsistent among categories. Further, units established before 1995 and/or first-generation entrepreneurs offer lower wages compared to other SSIs. However, avail major part of subsidies and concessions from the government. Moreover, the share of working capital requirement fluctuates among the industry. In the same way, units established before 1995 are more inconsistent in terms of labour and capital productivity and capital intensity. As against this, labour intensity is high among units established before 1995. Likewise, labour and high productivity units are more in older generation entrepreneurs but labour intensity units are high in young generations. (d) Sales turnover of the sample SSI units together is contributed significantly by investment on technology, working capital and workers. Generations of the entrepreneurs are also relatively better contributors of the sales turnover of SSIs.

To compete successfully with internal or/and external industries, SSIs should use quality raw materials improve productivity, and reduce costs. To do this, the study suggests that Government: (a) review its policies related to SSIs, make small-scale industrialists aware of the WTO and its agreements and also motivate them to face the new challenges; (b) provide good infrastructure and technology upgradation; as required (c) take necessary action for prompt payments by medium- and large-scale industries and provide timely and adequate credit; (d) invite foreign investment for better technology transfer and improve the skills of labourers; (e) arrange marketing support for, encourage diversified export base, and promote role of associations and non-government organisations in setting up of common facilities in technology, marketing, infrastructure and other support services through private and public partnership, rather than provide subsidies.

Notes

1. A small-scale unit is defined as an industry in which the investment on fixed assets in plant and machinery whether held on ownership terms, lease or hire purchase, does not exceed Rs.100 lakhs (Sathe 2002).

2. Small Scale Industries are a segment of the Small Scale Enterprises (SSEs) that work under the private sector. SSEs include ancillary undertakings, tiny units, export oriented units, women's enterprises and small-scale service business-oriented enterprises.

3. Government of Karnataka has set up several organisations over the years to promote the development of industries, such as Visveswaraya Industrial Trade Centre, Karnataka Udyog Mitra, Karnataka State Finance Corporation, Technical Consultancy Service Organisation of Karnataka, Karnataka Council for Technology Upgradation, Karnataka State Small Industries Development Corporation, Karnataka State Industrial Area Development Board.

4. MFN provides non-discriminatory treatment to services and service suppliers of any other member country. It ensures fair competition among trading partners (Arup 2000).

5. QR is defined as restrictions prohibited as a rule for both imports and exports whether made effective through quotas, import or export licenses or other measures. It includes prohibition, global quota allocated by country, bilateral quota i.e. anything less than a global quota, automatic licensing, and non-automatic licensing. QR made effective through state-trading operations, mixing regulation, minimum price triggering a QR, and voluntary export restraint (Hoekman and Martin 2001).

6. II summary measure is calculated by adding the scores 0 for not satisfactory; 1 for satisfactory; and 2 for highly satisfactory for different kinds of infrastructure, namely institutional credit, link road, postal, power, railway wagon, road transport, sewage and sanitation, telecommunication and water supply. Further, II score range 0–19 is interpreted as not satisfactory; 20–38 as satisfactory, and 39–52 as highly satisfactory.

7. SPM deals with government regulations and import prohibitions with regard to unsafe and disease-spreading products. It protects animal or plant life or health within the territory of the Members from risks arising from the entry and establishment or spread of pests, diseases, disease-carrying or disease-causing organism. On the other band, Technical Barriers to Trade (TBT) deals with government regulations on products and process methods, symbols, packaging, marking and labeling (WTO 1998 a).

8. "Dumping" is when a company exports a product at a price lower than the price it normally charges on its home market. It is also possible to establish dumping when the product is being exported for less than its cost of production if the sales on the domestic market are also below cost or not of sufficient magnitude. It is disciplined with anti-dumping actions, which is called the Anti-dumping Agreement (Gupta 2002).

9. PSI is the practice of developing countries, which employs specialized private companies or independent entities to check shipment details, essentially price, quantity and quality of goods ordered overseas. The purpose is to safeguard national financial interests and to compensate for inadequacies in administrative infrastructures to prevent capital flight and commercial fraud as well as customs duty evasion (WTO 1999).

10. FI includes investment in rupee lakhs at current prices on plant and machinery; land and building, pollution control equipment certifications, and quality control instruments.

11. WC is an original investment in lakhs of rupees at current prices on raw material, wages, power, water, debt, taxes, rent, transport, stationary, fuel and others.

12. SC consists of capital subsidy in lakhs of rupees at current prices availed from the State and Union governments, power concessions, sales tax exceptions, marketing assistance and others.

13. GVA defined as the sum of gross output minus total inputs.

Appendix 1: Important WTO Agreements

Sl. No.	Agreement
A	Marrakesh Agreement establishing the World Trade Organisation
B	Multilateral agreements
1	Trade in goods
	1.1. General Agreement on Tariffs and Trade (GATT)
	1.2. Agreement on Implementation of Article VII of GATT
	1.3. Agreement on Pre-shipment Inspection (PSI)
	1.4. Agreement on Technical Barriers to Trade (TBT)
	1.5. Agreement on Application of Sanitary and Phytosanitary Measures (SPM)
	1.6. Agreement on Licensing Procedures
	1.7. Agreement on Safeguards
	1.8. Agreement on Subsidies and Countervailing Measures (SCM)
	1.9. Agreement on Implementation of Article VI of GATT (Anti-dumping)
	1.10. Agreement on Trade-Related Investment Measures (TRIMs)
	1.11. Agreement on Textiles and Clothing (ATC)
	1.12. Agreement on Agriculture
	1.13. Agreement on Rules on Origin
2	Trade in services
	2.1. General Agreement on Trade in Services (GATS)
3	Intellectual Property Rights (IPRs)
	3.1. Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS)
C	Plurilateral trade agreements
	C.1. Agreement on Trade in Civil Aircraft's
	C.2. Agreement on Government Procurement
	C.3. International Dairy Agreement
	C.4. International Bovine Meat Agreement

Source: www.wto.org.

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