CHAPTER 5

Analysis of Problems of Sample SSI Units
CHAPTER 5

ANALYSIS OF PROBLEMS OF SAMPLE SSI UNITS

In the present study, the researcher has selected a total of 200 SSI units, of which 160 units are from Industrial Estates and 40 units are from outside Industrial Estates of Tamil Nadu. Among 160 SSI units, 120 units relate to engineering category and the balance 40 units relate to non-engineering category. The method of selecting the sample units has already been presented in the Introduction Chapter.

In this chapter, the researcher analyses the features and the problems of sample SSI units, both eng. and non-eng. category. The main aim of this chapter is to identify and analyse the problems faced by sample eng. and non. eng. units in IEs of Tamil Nadu and specifically focus the problems of sample eng. units in IEs vis-a-vis their counterparts outside the IEs. The comparison between eng. units in and outside IEs of Tamil Nadu has been effected chiefly to portray the problems of the former in a better way.

FEATURES OF SAMPLE UNITS

STATUS

Table 5.1 reveals that, out of the total 160 units surveyed in the Industrial Estates, 44 percent of them are private limited companies, 40 percent of them are
partnership firms and the rest comprise of sole proprietorship category. The corresponding figures for the units outside Industrial Estates are 70, 20 and 10 percent.

**TABLE 5.1**

**STATUS**

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Status of Units</th>
<th>No. of Units</th>
<th>Industrial Estates</th>
<th>Outside Industrial Estates</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Eng. units</td>
<td>Non-Eng. units</td>
<td>Total</td>
</tr>
<tr>
<td>1</td>
<td>Private Ltd., Company</td>
<td>61</td>
<td>9</td>
<td>70 (44)#</td>
</tr>
<tr>
<td>2</td>
<td>Partnership</td>
<td>39</td>
<td>26</td>
<td>65 (40)</td>
</tr>
<tr>
<td>3</td>
<td>Sole proprietorship</td>
<td>20</td>
<td>5</td>
<td>25 (16)</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>120</td>
<td>40</td>
<td>160 (100)</td>
</tr>
</tbody>
</table>

# : *Figures in brackets indicate percentage to the total.*

**Source** : *Primary*

Table 5.1 further reveals that among the sample engineering units in the IEs 51 percent belong to the private limited category, 33 percent are partnership firms and the rest comprise of the sole proprietorship concerns.

Large Sample Test for Proportion has been employed to ascertain whether there is any significant difference between the engineering units both within and outside the IEs as regards their status as private limited companies.
\[ Z_0 = \frac{|P_1 - P_2|}{\sqrt{P_1 (1-P_1)/N_1 + P_2 (1 - P_2)/N_2}} \]

\[ P_1 = \frac{61}{120} = 0.51 \]
\[ P_2 = \frac{28}{40} = 0.70 \]
\[ N_1 = 120 \quad N_2 = 40 \]

Substituting the Values:

\[ Z_0 = \frac{|0.51 - 0.70|}{\sqrt{0.51 (1-0.51) / 120 + 0.70 (1-0.70)/40}} \]
\[ Z_0 = 0.19 / \sqrt{0.0021 + 0.0053} \]
\[ Z_0 = 0.19 / 0.086 = 2.21 \]
\[ Z_0 = 2.21 > 1.96 \]

Since \( Z_0 \) is greater than 1.96, there is significant difference in the status of small engineering units located both within and outside IEs as Private Ltd. companies. As much as 70 percent of the units outside IEs are organised as private Ltd. Companies when compared to 51 percent in the case of Eng. units in IEs. This is because, many of these units are run by professional managers and that their average project cost is greater.
INITIAL CAPITAL INVESTMENT

The average initial capital employed in plant, equipment and machinery is found to be Rs. 19.85 lakhs and Rs. 17.63 lakhs in the case of engineering and non-engineering units respectively in IEs of Tamil Nadu. For the units outside IEs, the average initial capital worked out to Rs. 19.63 lakhs.

Test for Mean has been used to ascertain whether any significant difference exists between the mean initial capitals of the sample units. The necessary calculations pertaining to the mean test have been given in Appendix 6.1.

It has been found that no significant difference exists as regards initial capital invested as between eng. units and non-eng. units in the IEs as \( Z_{01} = 1.24 < 1.96 \) and as between engineering units inside and outside IEs as \( Z_{02} = 0.122 < 1.96 \). However, the combined average initial capital of these units Rs. 19.36 lakhs compares favourably with the overall Tamil Nadu figure of Rs. 2.63 Lakhs per unit. This shows that the sample units have a strong capital base.

NATURE OF ACTIVITY

Regarding the nature of activity carried on by the sample units it is found that 69 percent of the units in the IEs indulge in procuring and executing job orders, whereas only 58 percent of the eng. units outside IEs are doing such work (Table 5.2). This shows that a large majority of the sample units are in the nature of job order units. It is also evident from Table 5.2 that 75 percent of the eng. units in the IEs engage themselves in procuring and executing job orders, whereas the
corresponding figure for eng. units outside the IEs is only 58 percent. 40 percent of engineering units outside IEs manufacture products based on their own forecast, whereas the corresponding figure for units in the IEs is 12 percent. The nature of activity of the sample units is disclosed in Table 5.2.

**TABLE 5.2**

**NATURE OF ACTIVITY**

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Nature of Activity</th>
<th>No. of Units</th>
<th>Industrial Estates</th>
<th>Outside Industrial Estates</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Eng. units</td>
<td>Non-Eng. units</td>
<td>Total</td>
</tr>
<tr>
<td>1</td>
<td>Procuring &amp; executing job orders</td>
<td>90</td>
<td>20</td>
<td>110 (69)#</td>
</tr>
<tr>
<td>2</td>
<td>Working as an ancillary to large units</td>
<td>19</td>
<td>11</td>
<td>30 (19)</td>
</tr>
<tr>
<td>3</td>
<td>Manufacturing products based on own forecast</td>
<td>11</td>
<td>9</td>
<td>20 (12)</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>120</strong></td>
<td><strong>40</strong></td>
<td><strong>160 (100)</strong></td>
</tr>
</tbody>
</table>

# : *Figures in brackets indicate percentage to the total.*

Source : *Primary*

A significant revelation by Table 5.2 is that many of the units outside IEs manufacture products based on their forecasts, which shows that they happen to be indulging in direct marketing efforts.

To test whether there is significant difference between the engineering industries in IEs and outside IEs with respect to procuring and executing job orders,
Large Sample Test for Proportion has been used.

\[
Z_0 = \frac{|P_1 - P_2|}{\sqrt{P_1 (1-P_1)/N_1 + P_2 (1-P_2)/N_2}}
\]

\[
P_1 = 90/120 = 0.75
\]
\[
P_2 = 23/40 = 0.575
\]
\[
N_1 = 120
\]
\[
N_2 = 40
\]
\[
Z_0 = \frac{|0.75 - 0.575|}{\sqrt{0.75 (1-0.75)/120 + 0.575 (1-0.575)/40}}
\]
\[
Z_0 = 2.00 > 1.96
\]

It is clear from the above test that there is significant difference between engineering units within and outside the IEs regarding their activity viz., procuring and executing job orders. It shows that more engineering units in the IEs are in the nature of procuring and executing job orders when compared to their counterparts outside IEs. This is chiefly because such activity is more profitable and advantageous to them. It further reveals that they work as ancillaries to large units which indicates that their dependence on large units is greater.

**FACTORS RESPONSIBLE FOR THE LOCATION**

As revealed in Table 5.3, as many as 62 percent (99) of the units in the IEs attribute the reason for locating their units to the availability of ready factory sheds.
and infrastructure and other facilities such as ready financial support from commercial banks and Govt. provision of marketing assistance and supply of raw materials by SIDCO and uninterrupted supply of power by TNEB that are made available in IEs. For the units outside the IEs the main attraction is the nearness of their factories to large units and the availability of land at less cost and cheap labour. This factor accounts for 68 percent of such units, whereas only 13 percent of the units in the IEs attribute this reason for their location. Other factors such as concessions and subsidies and proximity to large units (25 percent) were also responsible for the location of units in the IEs. The corresponding figure for units outside IEs is 32 percent.

**TABLE 5.3**

**FACTORs RESPONSIBLE FOR LOCATION**

<table>
<thead>
<tr>
<th>SL No.</th>
<th>Factors</th>
<th>Industrial Estates</th>
<th>Outside Industrial Estates</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Eng. units</td>
<td>Non-Eng units</td>
</tr>
<tr>
<td>1</td>
<td>Availability of ready factory sheds, infrastructure and other facility *</td>
<td>81</td>
<td>18</td>
</tr>
<tr>
<td>2</td>
<td>Nearness to large city availability of land at less cost and cheap labour</td>
<td>15</td>
<td>6</td>
</tr>
<tr>
<td>3</td>
<td>Concession and subsidies</td>
<td>3</td>
<td>16</td>
</tr>
<tr>
<td>4</td>
<td>Proximity to large units</td>
<td>21</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>120</td>
<td>40</td>
</tr>
</tbody>
</table>

# : Figures in brackets indicate percentage to the total.
* : Other facility includes financial support from commercial banks, marketing assistance and assured supply of raw materials by SIDCO and uninterrupted power supply by TNEB.

Source : Primary
It can be clearly made out that the Industrial Estates Programme introduced by the Government of Tamil Nadu has been successful in attracting substantial number of small units, especially the engineering category.

**INITIAL DIFFICULTIES FACED**

As revealed in Table 5.4, 89 percent and 65 percent respectively of sample units located within and outside the IEs complain that finance was their main problem. Other important problems for eng. units in IEs were power and technical (11 percent) and obtaining licence was not at all a problem for them. Table 5.4 also reveals that power and obtaining licence were the other problems faced by eng. units outside IEs (35 percent). However, it is found that they have not faced any technical problem at the time of establishing their units.

**TABLE 5.4**

**INITIAL DIFFICULTIES FACED**

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Initial Difficulties</th>
<th>No. of Units</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Industrial Estates</td>
<td>Outside Industrial Estates</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Eng. units</td>
<td>Non-Eng. units</td>
</tr>
<tr>
<td>1</td>
<td>Financial</td>
<td>107</td>
<td>35</td>
</tr>
<tr>
<td>2</td>
<td>Power</td>
<td>9</td>
<td>3</td>
</tr>
<tr>
<td>3</td>
<td>Technical</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>4</td>
<td>Obtaining Licence</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>120</td>
<td>40</td>
</tr>
</tbody>
</table>

# : Figures in brackets indicate percentage to the total.
Source : Primary
Large Sample Test for Proportion has been used to find whether there is any significant difference between the eng. units located in and outside the IEs, with regard to their financial problems as their initial difficulties.

\[ Z_0 = \frac{|P_1 - P_2|}{\sqrt{\frac{P_1(1-P_1)}{N_1} + \frac{P_2(1-P_2)}{N_2}}} \]

\[ N_1 = 120 \quad N_2 = 40 \]

\[ P_1 = \frac{107}{120} = 0.892 \]

\[ P_2 = \frac{26}{40} = 0.65 \]

\[ Z_0 = \frac{|0.892 - 0.65|}{\sqrt{0.892(1-0.892)/120 + 0.65(1-0.65)/40}} \]

\[ Z_0 = 3.00 > 1.96 \]

Since \( Z_0 \) 3.00 > 1.96 there is a significant difference regarding financial problems faced by the eng. units. Financial problem appears to very much pronounced for eng. units in IEs. This is because of lack of adequate support from commercial banks which in turn shows clearly that the much promised financial support from banks and Government was not forthcoming readily. Moreover, they were left to depend on their own private savings to meet their financial requirements in the setting up of their units.
PHYSICAL ACCOMMODATION AND INFRASTRUCTURE

SIZE OF AREA OCCUPIED

Test for Mean has been used to find significant difference between eng. units and non-eng. units in the IEs and between eng. units within and outside IEs. The necessary calculations pertaining to the same are given in Appendix 6.2.

The mean size of area occupied by the sample units is ascertained under:

a. In the case of eng. units in the IEs, it is 8650 sq.ft.
b. In the case of non-eng. units in IEs, it is 7950 sq.ft, and
c. In the case of eng. units outside IEs, it is 6750 sq.ft.

The mean test for significant difference between the size of area occupied by eng. and non-eng. units in the IEs shows $Z_{01} = 1.3 < 1.96$ thereby indicating that there is no significant difference between them as regards the size of area occupied by them. The mean test for significant difference between the size of area occupied by eng. units in and outside IEs reveals that $Z_{w2} = 3.93 > 1.96$. This shows that there exists a significant difference between them regarding the average size of area occupied. The average area occupied by the sample eng. units in the IEs is greater.

This is because the Government of Tamil Nadu through the SIDCO, has planned the IEs and constructed and allotted industrial sheds and plots of substantial size, keeping in mind the likely future expansion of small units. The test further reveals that the size of area occupied by sample eng. units outside IES is less. This amply
shows that the cost of industrial plot outside IEs is higher and buying the same is found difficult by the small units.

**MODE OF ACQUISITION OF LAND**

The study reveals that 50 percent of the eng. units in the IEs and 48 percent of the units outside IEs acquired their industrial sheds and plots on outright purchase basis. This is followed by sheds acquired on hire purchase basis in the case of 31 percent of the eng. units located in the IEs. 33 percent of the units outside IEs acquired their sheds / plots on same basis. The other mode of acquiring the industrial shed / plot resorted to by the sample units is the rental and lease basis. The mode of acquisition of land by sample units is shown in Chart 5.1.

**COMMON SERVICE FACILITY**

The research study reveals that 76 percent of small units in the IEs (Table 5.5) avail the common service facilities such as raw material depot, heat treatment, quality control laboratory, maintenance and repair workshop, technical advisory and guiding bureau, central workshop, electroplating, tool and die shop, and stove enamelling.

It is significant to note that 24 percent of the units have not availed any of the above facilities. All the above facilities have been made available by the SIDCO.
CHART 5.1
MODE OF ACQUISITION OF LAND

No. of Units in %

<table>
<thead>
<tr>
<th>Mode of Acquisition</th>
<th>Outright Purchase</th>
<th>Hire Purchase</th>
<th>Rental</th>
<th>Lease</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eng. in IEs</td>
<td>50</td>
<td>31</td>
<td>7</td>
<td>12</td>
</tr>
<tr>
<td>Non-Eng. in IEs</td>
<td>50</td>
<td>33</td>
<td>10</td>
<td>7</td>
</tr>
<tr>
<td>Eng. outside IEs</td>
<td>48</td>
<td>2</td>
<td>20</td>
<td>30</td>
</tr>
</tbody>
</table>

Mode of Acquisition
TABLE 5.5
COMMON SERVICE FACILITY

<table>
<thead>
<tr>
<th>S.No</th>
<th>Category</th>
<th>Facility Availed</th>
<th>Weather Adequate</th>
<th>Arrangements Made</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Available</td>
<td>Not Available</td>
<td>Total</td>
</tr>
<tr>
<td>1</td>
<td>Eng. units</td>
<td>109</td>
<td>11</td>
<td>120</td>
</tr>
<tr>
<td>2</td>
<td>Non-eng. units</td>
<td>12</td>
<td>28</td>
<td>40</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>121 (76)#</td>
<td>39(24)</td>
<td>160(100)</td>
</tr>
</tbody>
</table>

# : Figures in brackets indicate percentage to the total

Source : Primary
Regarding the adequacy of common service facility in the IEs, for the majority of eng. units the facilities are not adequate. Large Sample Test for Proportion has been employed to find whether there is significant difference between the eng. and non eng. units in the IEs regarding the inadequacy of common service facility.

\[
Z_0 = \frac{|P_1 - P_2|}{\sqrt{P_1(1-P_1)/N_1 + P_2(1-P_2)/N_2}}
\]

\[
P_1 = \frac{101}{109} = 0.9266
\]

\[
P_2 = \frac{10}{12} = 0.8333
\]

\[
N_1 = 109
\]

\[
N_2 = 12
\]

\[
Z_0 = \frac{|0.9266 - 0.8333|}{\sqrt{0.9266(1-0.9266)/109 + 0.8333(1-0.8333)/12}}
\]

\[
Z_0 = 0.84 < 1.96
\]

It is clear from the above that there is no significant difference between them as regards the inadequacy of common service facilities. This shows that both the category of units admit that the common service facilities available to them are inadequate. Table 5.5 further reveals that 92 percent of units which availed the common service facility, have complained of inadequate availability of common services facility. Table 5.5 also reveals that 93 percent of the units which
complained of inadequate availability of common service facility get the work done from units outside the IEs. This includes 84 percent of eng. units and 19 percent of the non eng. units. This would have the effect of pushing up their cost of production.

**FACILITIES EXTENDED BY GOVERNMENT**

It is found that 68 percent of the units in the IEs and 43 percent of the units outside IEs avail the facilities and concessions extended by the Government. The facilities include subsidy, machines on hire-purchase, technical advice, loan at cheaper rate of interest, training facility, preference in the purchase of finished products by the Government, quota and permit for raw materials and warehousing. None of the units outside the IEs avail subsidies from the Government. This is because they are not eligible for such a facility. The facilities extended by the Govt. are shown in Table 5.6.
### TABLE 5.6

**FACILITIES EXTENDED BY GOVERNMENT**

| S. No. | Facilities Extended                      | No. of Units |          | | | |          | |
|--------|----------------------------------------|--------------|----------|----------|----------|----------|----------|
|        |                                        | Eng.units    | Non-Eng.units | Total    | Outside Industrial Estates |
| 1      | Subsidy                                | 3            | 16        | 19 (12)# | -        |
| 2      | Machines on hire-purchase              | 21           | 7         | 28 (18)  | 6 (15)   |
| 3      | Technical advice                       | 21           | -         | 21 (13)  | -        |
| 4      | Loan at cheaper rate of interest       | 13           | 5         | 18 (11)  | 3 (8)    |
| 5      | Training facility                      | 8            | 3         | 11 (7)   | 4 (10)   |
| 6      | Preference in purchase of finished products | 4           | 3         | 7 (4)    | 2 (5)    |
| 7      | Quota and permit for raw materials     | -            | 4         | 4 (3)    | 2 (5)    |
| 8      | Warehousing                            | -            | 1         | 1 (neg)  | -        |
| 9      | None                                   | 50           | 1         | 51 (32)  | 23 (57)  |
| Total  |                                        | 120          | 40        | 160 (100)| 40 (100) |

# : Figures in brackets indicate percentage to the total.
Source : Primary

**PROBLEMS IN FACTORY ACCOMMODATION AND INFRASTRUCTURE FACILITIES**

As evident from Table 5.7, the chief problems faced by units in the IEs are lack of proper maintenance of storm water drains and non availability of basic facilities like water etc. This problem is faced by 89 percent of the units. The problem of inadequate space is faced by 11 percent of the units only, whereas this problem is found to be very much pronounced in the case of eng. units outside the IEs.
TABLE 5.7

PROBLEMS OF FACTORY ACCOMMODATION AND INFRASTRUCTURE FACILITIES

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Nature of Problem</th>
<th>No. of Units</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Eng. units</td>
<td>Non. Eng. units</td>
<td>Total</td>
<td>Outside Industrial Estates</td>
</tr>
<tr>
<td></td>
<td></td>
<td>84</td>
<td>12</td>
<td>96(60)#</td>
<td>-</td>
</tr>
<tr>
<td>1</td>
<td>Lack of proper maintenance of storm water drains</td>
<td>21</td>
<td>26</td>
<td>47(29)</td>
<td>-</td>
</tr>
<tr>
<td>2</td>
<td>Basic facilities like water etc., not available to the required extent</td>
<td>15</td>
<td>2</td>
<td>17(11)</td>
<td>40 (100)</td>
</tr>
<tr>
<td>3</td>
<td>Existing space not sufficient</td>
<td></td>
<td></td>
<td>160(100)</td>
<td>40 (100)</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>120</td>
<td>40</td>
<td>160(100)</td>
<td>40 (100)</td>
</tr>
</tbody>
</table>

# : Figures in brackets indicate percentage to the total

Source : Primary

Large Sample Test for Proportion has been used to find whether there is any significant difference between the eng. units in and outside the IEs, as regards the problem of inadequate space.

\[
Z_0 = \frac{|P_1 - P_2|}{\sqrt{P_1 (1-P_1)/N_1 + P_2 (1-P_2)/N_2}}
\]
\[ P_1 = \frac{15}{120} = 0.125 \]
\[ P_2 = \frac{40}{40} = 1.0 \]
\[ N_1 = 120 \]
\[ N_2 = 40 \]

\[
Z_0 = \frac{|0.125 - 1.0|}{\sqrt{0.125(1-0.125)/120 + 1.0(1-1.0)/40}}
\]

\[ Z_0 = 28.9 > 1.96 \]

Since \( Z_0 = 28.9 > 1.96 \) there is significant difference. All the sample eng. units outside the IEs face the problem of insufficient space. This is because, sufficient space is not available for their expansion. This is due to escalating cost of land which makes these small units not to go for acquiring further land for expansion. This problem is very negligent for eng. units in the IEs. This is because, the Government and the SIDCO at the time of planning the IEs constructed sheds keeping in mind the future needs of the industrial units.

**PROBLEM OF POWER**

**POWER CONSUMED PER ANNUM**

Test for Mean was employed to ascertain whether there is significant difference between the eng. units in and outside the IEs, as regards average power consumed per annum in thousand units. The necessary calculations are shown in Appendix 6.3.
The average power consumed per annum (in thousand units) is found to be as follows:

For eng. units in the IEs : 292.5 For eng. units outside the IEs : 401.25. The combined average power consumed per annum by eng. units in and outside IEs, (in thousand units) is 319.69.

The calculations reveal that $Z_o = 3.18$ which is greater than 1.96. This shows that there is significant difference between the means of eng. units in and outside IEs as regards power consumed (in thousand units) per annum. This shows that the average power consumed in the case of eng. units outside the IEs is greater. This is because the eng. units outside the IEs get uninterrupted power supply. Moreover, they are able to get more job orders which make them run their units continuously. This also significantly reveals that such units face less problem on the power front.

**POWER CUT - A MAJOR HINDRANCE**

It is evident from Table 5.8 that 93 percent of eng and non eng. units in the IEs have complained about the problem of power cut resorted to by the TNEB and that this problem is considered to be a major hindrance to the normal functioning of their units. As much as 93 percent of the eng. units in the IEs face the problem of power-cut. In contrast to this only 32 percent of the eng. units outside IEs consider the problem of power-cut as a major hindrance to their normal functioning.
Table 5.8 also reveals that 81 percent of the eng. units in the IEs keep their plant idle rather than using a generator and the rest of the units make alternative arrangements by way of owning a generator. On the converse, only 46 percent of the eng. units outside the IEs would like to keep their plant idle and the rest of the units, as much as 54 percent, own and use a generator in order to keep their plant working.

Large Sample Test for Proportion has been used to find whether any significant difference exists between the eng. units in and outside IEs as regards the problem of power-cut.
\[ Z_0 = \frac{P_1 - P_2}{\sqrt{P_1 (1-P_1)/N_1 + P_2 (1-P_2)/N_2}} \]

\[ P_1 = \frac{112}{120} = 0.933 \]

\[ P_2 = \frac{13}{40} = 0.325 \]

\[ N_1 = 120 \]

\[ N_2 = 40 \]

\[ Z_0 = \frac{0.933 - 0.325}{\sqrt{0.933 (1-0.933)/120 + 0.325 (1-0.325)/40}} \]

\[ Z_0 = 7.85 > 1.96 \]

The test shows that there is significant difference between the eng. units. It means that the problem is very much pronounced in the case of eng. units in IEs and that their counterparts located outside the IEs face less problem of power-cut. This is because, TNEB ensures uninterrupted supply of power to eng. units outside IEs and even if there is any power-cut, it is effectively tackled by using a generator.

**PATTERN OF EXPENDITURE ON POWER**

The pattern of expenditure as revealed in Table 5.9 shows that dependence on the TNEB is greater for all types of units both in and outside the IEs. 83 percent of eng. units in and outside IEs depend on the TNEB for the supply of power and only 17 percent of such units spend on owning and using a generator.
This high dependence on power from the TNEB is basic because TNEB is the only source of supply of power to them and that they cannot afford maintaining a generator. They keep their plant idle and suffer production loss, in the wake of power cut.

### TABLE 5.9

**PATTERN OF EXPENDITURE ON POWER**

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Source of Power and % Expenditure</th>
<th>No. of Units</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>TNEB</td>
<td>Generator</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>100</td>
<td>Nil</td>
</tr>
<tr>
<td>2</td>
<td>98</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>95</td>
<td>5</td>
</tr>
<tr>
<td>4</td>
<td>90</td>
<td>10</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Figures in brackets indicate percentage to the total.*

**Source**: Primary

### PROBLEMS OF POWER

As evident from Table 5.10, 93 percent of the units in the IEs face the problem of irregular supply of power and frequent voltage fluctuations. The same percentage of eng. units in the IEs face such problems and the corresponding figure for eng. units outside the IEs is 45 percent. This shows clearly that the eng. units in the IEs suffer more by way of irregular supply and frequent voltage fluctuation.
Only 7 percent of the units, both eng. and non-eng. units in the IEs face other power related problems such as higher and uneconomic power tariff and inadequate power supply. Table 5.10 also shows that though power supply is adequate, it is not regular. For eng. units outside IEs, the main power related problems are higher and economic power tariff, inadequate supply of power and difficulty in getting new power connections.

**TABLE 5.10**

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Nature of Problem</th>
<th>No. of Units</th>
<th>Industrial Estates</th>
<th>Outside Industrial Estates</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Eng. units</td>
<td>Non-Eng. units</td>
<td>Total#</td>
</tr>
<tr>
<td>1</td>
<td>Irregular Power Supply &amp; Frequent voltage fluctuation</td>
<td>112</td>
<td>36</td>
<td>148(93)#</td>
</tr>
<tr>
<td>2</td>
<td>Higher power tariff</td>
<td>5</td>
<td>3</td>
<td>8(5)</td>
</tr>
<tr>
<td>3</td>
<td>Inadequate power supply</td>
<td>3</td>
<td>1</td>
<td>4(2)</td>
</tr>
<tr>
<td>4</td>
<td>Difficult to get power connection</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>120</td>
<td>40</td>
<td>160(100)</td>
</tr>
</tbody>
</table>

# : Figures in brackets indicate percentage to the total.

Source : Primary

Large Sample Test for Proportion was employed to find whether there is significant difference between eng. units in and outside the IEs as regards their main problem of irregular power supply and frequent voltage fluctuation.

\[
Z_0 = \frac{|P_1 - P_2|}{\sqrt{P_1 (1-P_1)/N_1 + P_2 (1-P_2)/N_2}}
\]
\[
P_1 = \frac{112}{120} = 0.93
\]
\[
P_2 = \frac{13}{40} = 0.33
\]
\[
N_1 = 120
\]
\[
N_2 = 40
\]
\[
Z_0 = \frac{|0.93 - 0.33|}{\sqrt{0.93 (1-0.93)/120 + 0.33(1-0.33)/40}}
\]
\[
Z_0 = 7.7 > 1.96
\]

It is found that \(Z_0\) is 7.7 > 1.96. This shows that there is significant difference and that for eng. units in the IEs, the problem of irregular power supply and frequent voltage fluctuation is very much acute when compared to their counterparts located outside the IEs. This is because the eng. units in the IEs do not get regular power supply from TNEB.

**FINANCE**

The sources of finance for the sample units are the commercial banks, friends and relatives, own funds and financial institutions. As far as the eng. units in the IEs are concerned, the chief source of finance is commercial banks. This is because 89 percent of such units depend on commercial banks for their financial requirements. 80 percent of the non-eng units in the IEs also depend on the commercial banks and dependence on other sources like friends and relatives, own funds and financial institutions is very much less. The sources of finance for the sample units is shown in Table 5.11.
Table 5.11 also reveals that sample eng. units outside IEs are least dependent on the commercial banks, as only 10 percent of them depend on this source. A large majority, i.e. as many as 70 percent of the units depend on their own funds for their requirements of finance.

Significant difference exists between eng. units in and outside the IEs as regards their dependence on commercial banks as source of finance. While 89 percent of the eng. units in the IEs depends on commercial banks, only 10 percent of the eng. units outside the IEs depend on commercial banks.
More dependence on the commercial banks by eng. units in the IEs shows that such units are established with the promise of finance provided by commercial banks. Moreover, commercial banks provide the only alternative for these units.

Significant difference also exists between eng. units in and outside the IEs in relying on own funds as their source of finance. Whereas 70 percent of units outside IEs depend on their own funds, only 7 percent of the eng. units in the IEs depend on their own funds. This is because most of the entrepreneurs setting up eng. units in the IEs do not have substantial personal savings of their own. Moreover, these entrepreneurs hail from middle class families and start their units slowly with the help of commercial banks.

**QUANTUM OF WORKING CAPITAL REQUIRED**

Test for Mean was used to ascertain whether there is significant difference between eng. units and non eng. units in IEs and between eng. units in and outside IEs as regards the quantum of working capital required per annum. The necessary calculations are given in Appendix 6.4.

The average working capital required per annum is found to be as under

- For eng. units in the IEs: Rs. 92 lakhs
- For non-eng. units in the IEs: Rs. 75 lakhs
- For eng. units outside the IEs: Rs. 87.5 lakhs

$ t_0 = 3.60 > 1.96 $, $ t_0 $ represents the test for mean between eng. and non-eng. units in the IEs. There is a significant difference between these units regarding
their average working capital required per annum. The average working capital required per annum in the case of eng. units in the IEs is greater than the non-eng. units in IEs. This is because eng. units operate with more initial capital and their scale of operation is larger.

\[ t_{0.92} = 0.92 < 1.96, \]  
was the test for mean between eng. units in and outside the IEs. There is no significant difference between these units regarding their average working capital required per annum.

**SUBSIDIES AND CONCESSIONS**

Table 5.12 reveals that only 3 eng. and 16 non eng. units totalling 19 units, in the IEs are availing the subsidies and concessions extended by the Government. This constitutes only 12 percent of the total 160 sample units in the IEs and rest of the units are not availing any subsidies and concessions. None of the sample eng. units outside the IEs avail any of the subsidies and concessions extended by the Government. This is because the sample eng. units outside the IEs, selected for this research, are located in and around Madras, a metropolitan city in the State of Tamil Nadu. Furthermore, most of the subsidies and concessions are extended to the small units in the suburban, rural and backward areas of the State.

Table 5.12 also reveals that the type of subsidies and concessions extended by the Government are sales tax subsidy, central excise exemption, export concessions, capital subsidy and power subsidy. Of the total 19 eng. units and non-eng. units in the IEs which are availing subsidies and concessions, 84 percent of
### TABLE 5.12

**SUBSIDIES AND CONCESSIONS AVAILED**

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Industry Category</th>
<th>Whether Availed</th>
<th>Type of Facility Availed</th>
<th>Whether Difficulties Faced</th>
<th>Reasons for Difficulties</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Yes</td>
<td>No</td>
<td>Total</td>
<td>STS &amp; CEE</td>
</tr>
<tr>
<td>1</td>
<td>Eng. units in IEs</td>
<td>3</td>
<td>117</td>
<td>120</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>Non-eng. units in IEs</td>
<td>16</td>
<td>24</td>
<td>40</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td>19</td>
<td>141</td>
<td>160</td>
<td>12</td>
</tr>
<tr>
<td>3</td>
<td>Eng. units Outside IEs</td>
<td>-</td>
<td>40</td>
<td>40</td>
<td>-</td>
</tr>
</tbody>
</table>

*STS & CEE* : Sales Tax subsidy and Central excise exemption  
*ECs* : Export Concessions  
*CS & PS* : Capital Subsidy and Power Subsidy  
*#* : *Figures in brackets indicate percentage to the total.*  
*Source* : *Primary*
them face certain difficulties in availing such facility. The reasons quoted by such units for the difficulties faced are procrastination and cumbersome formalities and maladministration in Government agencies.

FINANCIAL PROBLEMS

The main problem indicated by the sample units in the IEs is the lack of adequate and timely finance. 86 percent of such units have complained of lack of adequate and timely finance, especially from banks. 93 percent of the eng. units in the IEs complained of this problem. Other sample units in the IEs face finance related problems such as delays in the settlement of bills by customers, exorbitant rate of interest when borrowed from private sources and difficulty in meeting the security requirements insisted by lending institutions. As far as the eng. units outside the IEs, the main problem of finance is the exorbitant rate of interest while borrowing from private sources. 70 percent of such units outside the IEs face this problem. Table 5.13 shows the nature of financial problems faced by the sample units.
TABLE 5.13
FINANCIAL PROBLEMS

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Nature of Problem</th>
<th>No. of Units</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Industrial Estates</td>
<td>Non-Eng. units</td>
<td>Total</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Eng. units</td>
<td>Non-Eng. units</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Inadequate and untimely finance</td>
<td>112</td>
<td>26</td>
<td>138(86)#</td>
<td>6 (15)</td>
</tr>
<tr>
<td>2</td>
<td>Delay in settlement of bills</td>
<td>4</td>
<td>10</td>
<td>14(9)</td>
<td>1 (3)</td>
</tr>
<tr>
<td>3</td>
<td>Exorbitant rate of interest</td>
<td>1</td>
<td>4</td>
<td>5(3)</td>
<td>28 (70)</td>
</tr>
<tr>
<td>4</td>
<td>High security requirements</td>
<td>3</td>
<td></td>
<td>3(2)</td>
<td>5 (12)</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>120</td>
<td>40</td>
<td>160(100)</td>
<td>40 (100)</td>
</tr>
</tbody>
</table>

# : Figures in brackets indicate percentage to the total.

Source : Primary

Large Sample Test for Proportion has been employed to ascertain significant difference between eng. units in and outside the IE's as regards the problem of adequate and timely finance.

\[
Z_0 = \frac{|P_1 - P_2|}{\sqrt{P_1 (1-P_1)/N_1 + P_2 (1-P_2)/ N_2}}
\]

\[
P_1 = \frac{112}{120} = 0.933
\]

\[
P_2 = \frac{6}{40} = 0.15
\]

\[
N_1 = 120
\]
Since \( Z_o = 12.86 > 1.96 \), there is significant difference between eng. units in and outside the IEs. This shows that the problem of inadequate and untimely finance is much pronounced in the case of eng. units in the IEs than that of eng. units outside the IEs. This is because the eng. units in the IEs depend more on the commercial banks which are reluctant to extend financial assistance to small units in IEs for their requirements of finance both fixed and working capital. This is also because commercial banks follow cumbersome formalities in sanctioning finance, in general. The eng. units outside the IEs, do not depend much on the commercial banks for their financial requirements.

**Large Sample Test for proportion** has been employed to ascertain significant difference between eng. units in and outside the IEs regarding their problem of exorbitant rate of interest.

\[
Z_o = \frac{|P_1 - P_2|}{\sqrt{P_1 (1-P_1)/N_1 + P_2 (1-P_2)/N_2}}
\]

\[
P_1 = \frac{1}{120} = 0.00833
\]

\[
P_2 = \frac{28}{40} = 0.7
\]
\[ N_1 = 120 \]
\[ N_2 = 40 \]
\[ Z_0 = \frac{|0.00833 - 0.7|}{\sqrt{0.00833 (1-0.00833)/120 + 0.7 (1-0.7)/40}} \]
\[ Z_0 = 9.48 > 1.96 \]

Similarly, \( Z_0 = 9.48 > 1.96 \) shows that there is significant difference between eng. units in and outside the IEs with regard to their problem, viz. exorbitant rate of interest when borrowed from private sources. This shows that the problem of exorbitant rate of interest when borrowed from private sources, is very acute in the case of eng. units outside the IEs. This is because, most of the units depend on their own private funds - either private savings or private borrowing.
MARKETING

EXTENT OF MARKET

As revealed in Table 5.14, 60 percent of the eng. and non eng. units in the IEs market their products locally. 59 percent of the eng. units market their products locally and only 20 percent of the eng. units outside the IEs have local demand for their products. A large part of the market of sample eng. units outside the IEs is confined to local and regional markets, which accounts for 45 percent of their total markets. The sample units both in and outside the IEs also depend on the national and the international markets for their products though relatively at a lower rate.

A comparison of the extent of market for the products of eng. units in and outside the IEs is depicted in Chart 5.2.

Large Sample Test for Proportion has been used to find whether there is significant difference between eng. unit in and outside the IEs as regards the extent of local market for their products.

\[ Z_0 = \frac{|P_1 - P_2|}{\sqrt{P_1 (1-P_1) / N_1 + P_2 (1-P_2) / N_2}} \]

\[ P_1 = \frac{71}{120} = 0.59 \]

\[ P_2 = \frac{8}{40} = 0.2 \]

\[ N_1 = 120 \]

\[ N_2 = 40 \]
### TABLE 5.14
MARKETING CHARACTERISTICS

<table>
<thead>
<tr>
<th>No.</th>
<th>S. No.</th>
<th>Industry Category</th>
<th>Extent of Market</th>
<th>Mode of Selling Products</th>
<th>Method of Promoting Products</th>
<th>Whether Products Expected</th>
<th>% Share of Exports</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Engl. Units in IEs</td>
<td>L</td>
<td>L&amp;R</td>
<td>R&amp;N</td>
<td>Int.</td>
<td>Total</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td></td>
<td>71</td>
<td>29</td>
<td>11</td>
<td>9</td>
<td>120</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>Non-Eng. Units in IEs</td>
<td>25</td>
<td>6</td>
<td>3</td>
<td>6</td>
<td>40</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Total</td>
<td>96</td>
<td>35</td>
<td>14</td>
<td>15</td>
<td>160</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>Engl. Units Outside IEs</td>
<td>8</td>
<td>18</td>
<td>9</td>
<td>5</td>
<td>40</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(20)</td>
<td>(45)</td>
<td>(23)</td>
<td>(12)</td>
<td>(100)</td>
</tr>
</tbody>
</table>

**L** : Local,
**R&N** : Regional and National,
**I** : Intermediaries,
**SM** : Self-Marketing,
**D** : Dealers,
**AVM** : Audio-Visual Methods

**L&R** : Local and Regional,
**D** : Direct,
**G** : Government,
**PM** : Press Media,
**OP** : Outdoor Publicity,
**Intl.** : International

# : Figures in brackets indicate percentage to the total.

**Source** : Primary
CHART 5.2
EXTENT OF MARKET FOR PRODUCTS

No. of Units in %

<table>
<thead>
<tr>
<th>Extent of Market for Products</th>
<th>Eng. in IEs</th>
<th>Eng. outside IEs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local</td>
<td>59</td>
<td>20</td>
</tr>
<tr>
<td>Local &amp; Regional</td>
<td>24</td>
<td>24</td>
</tr>
<tr>
<td>Regional &amp; National</td>
<td>9</td>
<td>23</td>
</tr>
<tr>
<td>International</td>
<td>8</td>
<td>12</td>
</tr>
</tbody>
</table>
\[ Z_o = \frac{|0.59 - 0.2|}{\sqrt{0.59 (1-0.59)/120 + 0.2(1-0.2)/40}} \]

\[ Z_o = 5.03 > 1.96 \]

Since \( Z_o = 5.03 > 1.96 \) there is significant difference between eng. units in and outside the IEs. This shows that eng. units in the IEs tap their market mainly locally. This is because small units are set up in the IEs mainly to tap the local market whereas sample eng. units outside the IEs tap their markets both locally and regionally. This is because such units are not meant for tapping local market only, but to exploit the regional markets as well.

**METHOD OF SELLING PRODUCTS**

Majority of the eng. units both in and outside IEs go for direct marketing. As much as 93 percent of the eng. units in the IEs and 78 percent of eng. units outside IEs directly sell their products. Other methods of selling resorted to by the sample units are through intermediaries and Government agencies like SIDCO etc., as reflected in Table 5.14.

Large Sample Test for Proportion has been employed to find whether there is significant difference between eng. units in and outside IEs regarding the direct method of selling their products.

\[ Z_o = \frac{|P_1 - P_2|}{\sqrt{P_1 (1-P_1)/N_1 + P_2 (1-P_2)/N_2}} \]
\[ P_1 = \frac{112}{120} = 0.933 \]
\[ P_2 = \frac{31}{40} = 0.78 \]
\[ N_1 = 120 \]
\[ N_2 = 40 \]

\[
Z_o = \frac{|0.933 - 0.78|}{\sqrt{0.933(1-0.933)/120 + 0.78(1-0.78)/40}}
\]

\[ Z_o = 2.21 > 1.96 \]

Since \( Z_o = 2.21 > 1.96 \), there is significant difference between eng. units in and outside the IEs regarding the direct method of selling their products. More number of eng. units in the IEs, than their counterparts, outside the IEs, resort to direct marketing. This is because they are mostly confined to local markets only.

**METHOD OF POPULARISING PRODUCTS**

As observed in Table 5.14, a large majority of the eng. units both in and outside the IEs indulge in self-marketing. This accounts for 82 percent in the case of eng. units in the IEs and 33 percent in the case of eng. units outside the IEs. For eng. units outside the IEs, the chief method of popularising their products is through press media which accounts for 35 percent of the units.

Large Sample Test for Proportion was used to find whether any significant difference exist between eng. units in and outside the IEs as regards self marketing as a method of popularising products.
\[ Z_0 = \frac{|P_1 - P_2|}{\sqrt{P_1 (1-P_1)/N_1 + P_2(1-P_2)/N_2}} \]

\[ P_1 = \frac{98}{120} = 0.8167 \]
\[ P_2 = \frac{13}{40} = 0.325 \]
\[ N_1 = 120 \]
\[ N_2 = 40 \]
\[ Z_0 = \frac{|0.8167 - 0.325|}{\sqrt{0.8167 (1-0.8167)/120 + 0.325 (1-0.325)/40}} \]
\[ Z_0 = 5.99 > 1.96 \]

\( Z_0 = 5.99 > 1.96 \) shows that there is a significant difference between the eng. units in and outside the IEs regarding the method adopted by them in popularising products viz. through self-marketing.

The test reveals that a large number of eng. units in the IEs go in for direct marketing. This is because they are largely confined to local market and direct marketing technique is highly helpful in marketing the products locally. Table 5.14 also reveals that the sample units also resort to dealers, outdoor publicity and audio-visual methods for popularising their products. A significant disclosure by Table 5.14 is that the eng. units in the IEs do not employ audio-visual methods at all in popularising their products.
**EXPORT OF THE PRODUCTS**

As disclosed in Table 5.14, only 8 percent of eng. units in the IEs export their products. The reason for the low profile of these units on the export front is their concentration on the local and regional markets. The corresponding figure for the eng. units outside the IEs is 12 percent. This is mainly due to their concentration on local, regional and national markets.

Table 5.14 further reveals that 87 percent of the units in the IEs export up to 25 percent of their total turnover per annum. 78 percent of eng. units in IEs and 60 percent of the eng. units outside the IEs fall in this category. The share of eng. units in the IEs in the category 25 - 50 percent is relatively less, whereas 40 percent of eng. units outside IEs enjoy this share.

**MARKETING PROBLEM**

As observed in Table 5.15 86 percent of the units in the IEs face the marketing problem. Eng. units in IEs alone account for 98 percent and 88 percent of the eng. units outside the IEs also face marketing problem.

Large Sample Test for Proportion was employed to find whether there is any significant difference between eng. units in and outside IEs as regards whether any marketing problem is faced by them.

\[ Z_o = \left| P_1 - P_2 \right| \sqrt{P_1(1-P_1)/N_1 + P_2(1-P_2)/N_2} \]

\[ P_1 = \frac{118}{120} = 0.983 \]

\[ P_2 = \frac{35}{40} = 0.875 \]
## MARKETING PROBLEMS

### TABLE 5.15

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Industry Category</th>
<th>No. of Units</th>
<th>Nature of Problems</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>1</td>
<td>Eng. Units in IEs</td>
<td>118</td>
<td>2</td>
</tr>
<tr>
<td>2</td>
<td>Non-Eng. Units in IEs</td>
<td>19</td>
<td>21</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>137</td>
<td>(86)</td>
</tr>
<tr>
<td>3</td>
<td>Eng. Units Outside IEs</td>
<td>35</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(88)</td>
<td>(12)</td>
</tr>
</tbody>
</table>

# : Figures in brackets indicate percentage to the total.

**Source** : *Primary*
\[ N_1 = 120 \]
\[ N_2 = 40 \]

\[ Z_0 = \frac{|0.983 - 0.875|}{\sqrt{0.983 (1-0.983)/120 + 0.875 (1-0.875)/40}} \]

\[ Z_0 = 37.58 > 1.96 \]

The test reveals that there is significant difference between them. Most of the eng. units in the IEs are seen to be facing the problem of marketing. This is because eng. units in the IEs tap their markets locally, their method of selling products is direct, they popularise their products through self-marketing only and that they do not employ modern methods of popularising products such as audio-visual methods etc.,

Table 5.15 reveals that 92 percent of the eng. units in the IEs complained delayed payments from customers as their main marketing problem. As many as 85 percent of the eng. units outside the IEs face similar problems.

**Large Sample Test for Proportion** has been used to find whether significant difference exists between eng. units in and outside the IEs as regards delayed payments from customers as their main marketing problem.

\[ Z_0 = \frac{|P_1 - P_2|}{\sqrt{P_1 (1-P_1)/N_1 + P_2 (1-P_2)/N_2}} \]

\[ P_1 = \frac{108}{118} = 0.915 \]
\[ P_2 = \frac{30}{35} = 0.857 \]
\[ N_1 = 118 \]
\[ N_2 = 35 \]
\[ Z_e = \frac{|0.915 - 0.857|}{\sqrt{0.915 (1-0.915)/118 + 0.857 (1-0.857)/35}} \]
\[ Z_o = 0.90 < 1.96 \]

The above test shows that \( Z_o = 0.90 < 1.96 \) which means that there is no significant difference between eng. units in and outside the IEs. Both of them vouchsafe that delayed payments from customers as the main marketing problem.

Moreover, it is clear from Table 5.15 that the eng. units in the IEs do not face any problem of inadequate orders, whereas their counterparts outside IEs face such a problem. However, this problem is quite insignificant. The problem of excessive Government regulations though faced by the sample units is also insignificant. Next to the problem of delayed payments from customers, competition is yet another problem commonly faced by eng. units both in and outside the IEs.

**RAW MATERIALS**

**SOURCE OF SUPPLY**

Table 5.16 reveals that all the eng. units in the IEs depend on private parties for the supply of required raw materials. It is found that 88 percent of the non eng. units in the IEs obtain their supply of raw materials from private parties. As
compared to eng. units in the IEs, only 73 percent of the eng. units outside the IEs depend on private parties for supplying raw materials to them.

**TABLE 5.16**

**SOURCE OF SUPPLY OF RAW MATERIALS**

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Industry Category</th>
<th>No. of Units</th>
<th>Source of Supply</th>
<th>Dependence on Imported Raw Materials</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Private Parties</td>
<td>Govt. SIDCO</td>
</tr>
<tr>
<td>1</td>
<td>Eng. Units in IEs</td>
<td>119</td>
<td>1</td>
<td>120</td>
</tr>
<tr>
<td>2</td>
<td>Non-Eng. Units in IEs</td>
<td>35</td>
<td>5</td>
<td>40</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>154</td>
<td>6</td>
<td>160</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(96)#</td>
<td>(4)</td>
<td>(100)</td>
</tr>
<tr>
<td>3</td>
<td>Eng. Units Outside IEs</td>
<td>29</td>
<td>11</td>
<td>40</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(73)</td>
<td>(27)</td>
<td>(100)</td>
</tr>
</tbody>
</table>

* : All the units depend on Private Parties

# : Figures in brackets indicate percentage to the total.

Source : Primary

Large Sample Test for Proportion has been used to find whether there is any significant difference between eng. units in and outside the IEs relating to private parties as their source of supply of raw materials.

\[ Z_0 = \frac{|P_1 - P_2|}{\sqrt{P_1(1-P_1)/N_1 + P_2(1-P_2)/N_2}} \]
\[ P_1 = \frac{119}{120} = 0.99 \]
\[ P_2 = \frac{29}{40} = 0.73 \]
\[ N_1 = 120 \]
\[ N_2 = 40 \]
\[ Z_\circ = \frac{0.99 - 0.73}{\sqrt{0.99 (1-0.99)/120 + 0.73 (1-0.73)/40}} \]
\[ Z_\circ = 3.67 > 1.96 \]

The test shows that \( Z_\circ = 3.67 > 1.96 \). This means that there is a significant difference between eng. units in and outside the IEs. More number of eng. units in the IEs depend on the private source for their supply of raw materials. This is because, private parties are more flexible in their dealings. Moreover, the distribution of raw materials undertaken by the Government agencies like SIDCO etc., is inadequate.

Dependence on Govt. agencies for their supply of raw materials by the eng. units outside the IEs is greater than their counterparts in the IEs. This is because, Govt. is the sole distributor for some of the raw materials, especially the imported ones.

Table 5.16 further reveals that the dependence by the eng. units in the IEs on the imported raw materials is negligible, whereas the eng. units outside the IEs are, to some extent, dependent on the imported raw materials. It accounts for 27 percent of the total sample eng. units outside IEs. The reason for the less
dependence of imported raw materials is that small eng. units are basically using only the locally available raw materials.

**WASTAGE OF RAW MATERIALS**

Test for Mean has been used to find whether there is any significant difference between the eng. units in and outside the IEs regarding their average wastage of raw materials per annum. The computation is shown in Appendix 6.5.

The test shows that $Z_0 = 2.26 > 1.96$. It evidently shows that there is significant difference between eng. units in and outside the IEs as regards the mean amount of wastage of raw materials per annum. The mean amount of wastage of raw material in the case of eng. units in the IEs is greater than their counterparts located outside the IEs. This is due to reasons such as basic process loss, inferior quality of raw materials used, frequent power failure and the use out-moded technology.

**CAUSES FOR THE WASTAGE OF RAW MATERIALS**

As evident from Table 5.17, both eng. units in and outside the IEs consider frequent power failure as the single most important reason for the wastage of raw materials. It accounts for 68 percent in the case of eng. units in IEs and 60 percent in the case of eng. units outside the IEs.
TABLE 5.17
CAUSES FOR THE WASTAGE OF RAW MATERIAL

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Causes for the Wastage</th>
<th>No. of Units</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Industrial Estates</td>
<td></td>
<td></td>
<td>Outside</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Eng. Units</td>
<td>Non-Eng. Units</td>
<td>Total</td>
<td>Industrial Estates</td>
</tr>
<tr>
<td>1</td>
<td>Inefficiency of Labour</td>
<td>6</td>
<td>8</td>
<td>14 (9)#</td>
<td>2 (5)</td>
</tr>
<tr>
<td>2</td>
<td>Basic Process Loss</td>
<td>30</td>
<td>11</td>
<td>41 (26)</td>
<td>11 (27)</td>
</tr>
<tr>
<td>3</td>
<td>Frequent power failure</td>
<td>82</td>
<td>15</td>
<td>97 (60)</td>
<td>24 (60)</td>
</tr>
<tr>
<td>4</td>
<td>Inferior quality of raw materials</td>
<td>1</td>
<td>5</td>
<td>6 (4)</td>
<td>-</td>
</tr>
<tr>
<td>5</td>
<td>Out moded technology</td>
<td>1</td>
<td>1</td>
<td>2 (1)</td>
<td>3 (8)</td>
</tr>
<tr>
<td>6</td>
<td>Total</td>
<td>120</td>
<td>40</td>
<td>160 (100)</td>
<td>40 (100)</td>
</tr>
</tbody>
</table>

# : Figures in brackets indicate percentage to the total.

Source : Primary

Large Sample Test for Proportion for significant difference between eng. units in and outside the IEs regarding the main cause for the wastage of raw materials shows that:

\[ Z_0 = \frac{|P_1 - P_2|}{\sqrt{P_1(1-P_1)/N_1 + P_2(1-P_2)/N_2}} \]
P₁ = 82 / 120 = 0.683
P₂ = 24 / 40 = 0.66
N₁ = 120
N₂ = 40
Z₀ = \frac{|0.683 - 0.66|}{\sqrt{0.683(1-0.683)/120 + 0.6(1-0.6)}}
Z₀ = 0.26 < 1.96

The test reveals that both eng. units in and outside the IEs have the common cause of frequent power failure which results in wastage of raw materials. The reason is that TNEB is not able to ensure uninterrupted power supply. The other causes indicated by the sample eng. units both in and outside the IEs for the wastage of raw materials are inefficiency of labour, basic process loss, inferior quality of raw materials and outmoded technology.

Table 5.18 clearly shows that the raw materials problem is acute in the case of sample units both eng. and non-eng. in the IEs, as 80 percent of them face the problem of raw materials. Between eng. units in and outside the IEs, it is revealed in Table 5.18 that 91 percent of the eng. units face the raw material problems whereas only 68 percent of their counterparts outside the IEs face such a problem.

Z₀ = \frac{|P₁ - P₂|}{\sqrt{P₁(1-P₁)/N₁ + P₂(1-P₂)/N₂}}
P₁ = 109/120 = 0.908
\[ P_2 = \frac{27}{40} = 0.675 \]

\[ N_1 = 120 \]

\[ N_2 = 40 \]

\[ Z_0 = \frac{|0.908 - 0.675|}{\sqrt{0.908(1-0.908)/120 + 0.675(1-0.675)/40}} \]

\[ Z_0 = 2.96 > 1.96 \]

Large Sample Test for Proportion reveals that there is significant difference between eng. units in and outside IEs as to whether the problem of raw materials is faced by them. More eng. units in the IEs have reported that they are facing raw materials problem. This is because, many of the eng. units are located in the IEs with an assurance of regular supply of raw materials by SIDCO. But this does not happen in practice because they are quite often made to depend on themselves. This results in more dependence on private parties.

**NATURE OF RAW MATERIALS PROBLEM**

It is evident from Table 5.18 that irregular supply of raw materials is the most important problem faced by the eng. units both in and outside the IEs. Table 5.18 further reveals that the problem of erratic price fluctuation of raw materials is faced only by the eng. units in the IEs. Both the eng. units in and outside the IEs encounter the problem of competition while buying raw materials. Competition is posed mostly by larger units which also buy their requirements from private parties.
TABLE 5.18

RAW MATERIALS PROBLEM

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Industry Category</th>
<th>No. of Units</th>
<th>Whether Problem Faced</th>
<th>Nature of Problem</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>1</td>
<td>Eng. Units in IEs</td>
<td>109</td>
<td>11</td>
<td>120</td>
</tr>
<tr>
<td>2</td>
<td>Non Eng. Units in IEs</td>
<td>19</td>
<td>21</td>
<td>40</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td>128 (80)</td>
<td>32 (20)</td>
</tr>
<tr>
<td>3</td>
<td>Eng. Units Outside IEs</td>
<td>27</td>
<td>13</td>
<td>40</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>27 (68)</td>
<td>13 (32)</td>
</tr>
</tbody>
</table>

# Figures in brackets indicate percentage to the total.
Source: Primary

PERSONNEL

NUMBER AND CATEGORY OF PERSONNEL

The total number of personnel employed by the sample units in the IEs is 5780. This includes all categories of personnel such as skilled and technical, unskilled and administrative. The corresponding figure for sample units outside the IEs is 1120. There are as many as 4803 personnel employed by the sample eng. units in the IEs. The category of personnel employed by the sample eng. units in
CHART 5.3
CATEGORY OF PERSONNEL EMPLOYED

No. of Units in %

Skilled & Technical

Unskilled

Administrative

Category of Personnel Employed

Eng. in IEs

Eng. outside IEs
<table>
<thead>
<tr>
<th>S.No.</th>
<th>Industry Category</th>
<th>Number of Personnel</th>
<th>Mode of Recruitment</th>
<th>Number of Units</th>
<th>Source of Drawing Personnel</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>S&amp;T</td>
<td>Us</td>
<td>A</td>
<td>Total</td>
</tr>
<tr>
<td>1</td>
<td>Eng. Units in IEs</td>
<td>3109</td>
<td>1094</td>
<td>600</td>
<td>4803</td>
</tr>
<tr>
<td>2</td>
<td>Non-eng. units in IEs</td>
<td>91</td>
<td>575</td>
<td>311</td>
<td>977</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td>3200</td>
<td>1669</td>
<td>911</td>
<td>5780</td>
</tr>
<tr>
<td>3</td>
<td>Eng. units outside IEs</td>
<td>628</td>
<td>330</td>
<td>162</td>
<td>1120</td>
</tr>
</tbody>
</table>

S & T: Skilled and Technical; Us: Unskilled; A: Administrative

DR: Direct Recruitment; EEs: Employment Exchanges

# Figures in brackets indicate percentage to the total.

Source: Primary
and outside IEs is depicted in Chart 5.3. Table 5.19 reveals that employment of skilled and technical labourers is greater at 65 percent in the case of eng. units in the IEs. On the contrary, it is only 56 percent of the total number of personnel in eng. units outside IEs.

Test for Proportion has been employed to find whether there is significant difference between eng. units in and outside the IEs regarding the number of skilled and technical personnel employed.

\[
Z_0 = \frac{|P_1 - P_2|}{\sqrt{P_1 (1-P_1)/N_1 + P_2 (1-P_2)/N_2}}
\]

\[
P_1 = \frac{3109}{4803} = 0.647
\]

\[
P_2 = \frac{628}{1120} = 0.561
\]

\[
N_1 = 4803
\]

\[
N_2 = 1120
\]

\[
Z_0 = \frac{|0.647 - 0.561|}{\sqrt{0.647 (1-0.647)/4803 + 0.561 (1-0.561)/1120}}
\]

\[
Z_0 = 5.26 > 1.96
\]

It is clear from the above test that there is significant difference between eng. units in and outside IEs regarding the employment of skilled and technical personnel. This is because, most of the eng. units in the IEs employ more labour and they are dependent less on machines relatively.
MODE OF RECRUITMENT

Table 5.19 reveals that 76 percent of the sample units in the IEs resort to direct recruitment of personnel required by them. Among the eng. units in the IEs, 85 percent of them recruit their personnel directly. In the case of eng. units outside the IEs, the corresponding figure is 78 percent. 14 percent of the eng. units in IEs depend on both direct recruitment and employment exchanges while 17 percent of the eng. units outside the IEs depend both on this mode of recruitment. On the whole, the number of sample units which are dependent solely on employment changes is meagre. This shows that the sample units enjoy full freedom in the matter of recruitment of personnel and that they need hardly follow Government regulations on recruitment matters.

SOURCE OF DRAWING PERSONNEL

It is evident from Table 5.19 that a majority of the sample units in the IEs accounting for 81 percent of the total, draw their personnel locally. Regarding eng. units in the IEs, it accounts for 93 percent. However, it is significant from Table 5.19 that only 30 percent of the sample eng. units outside the IEs draw their personnel locally.

Large Sample Test for Proportion has been used to find whether there is any significant difference between eng. units in and outside IEs regarding the source of drawing personnel locally.
\[ Z_o = \frac{|P_1 - P_2|}{\sqrt{P_1(1-P_1)/N_1 + P_2(1-P_2)/N_2}} \]

\[
P_1 = \frac{112}{120} = 0.93
\]

\[
P_2 = \frac{12}{40} = 0.3
\]

\[
N_1 = 120
\]

\[
N_2 = 40
\]

\[
Z_o = \frac{|0.93 - 0.3|}{\sqrt{0.93(1-0.93)/120 + 0.3(1-0.3)/40}}
\]

\[
Z_o = 8.28 > 1.96
\]

The test shows that there is significant difference between eng. units in and outside IEs regarding source of drawing the personnel locally. More of eng. units draw their personnel locally than their counterparts located outside the IEs. This is chiefly because such units are set up in the IEs are very much attracted by easy availability of labour locally. In fact, this is an important factor for the location of units in the IEs.

As much as 53 percent of the sample eng. units outside IEs draw personnel outside districts. This is because they do not obtain the skilled and technical personnel in and around their factories. Table 5.19 also reveals that none of the eng. units in the IEs draw personnel outside state, though 17 percent of the sample eng. units outside IEs draw their personnel even outside the state.
EMPLOYMENT POTENTIAL

Bi-serial Correlation Technique has been employed to ascertain whether there is any significant difference between eng. units in and outside the IEs and between eng. and non-eng units in the IEs as regards the employment potential based on the initial capital employed. The necessary calculations are shown in Appendix 6.6.

The computation shows that:

\[ Z_1 = 2.82 > 1.96 \text{ and } Z_2 = 1.17 < 1.96 \]

Since \( Z_1 = 2.86 > 1.96 \), there is significant difference between the eng. and non eng. units in the IEs as regards the mean employment potential based on initial capital employed. This reveals that the mean employment potential in the case of eng. units in IEs is higher which shows that these units employ more personnel per unit of capital employed and that they are more labour oriented. \( Z_2 = 1.17 < 1.96 \) shows that there is no significant difference between the eng. units in and outside the IEs regarding the mean employment potential. This shows that the average employment potential for these units is practically the same.

ATTITUDE OF WORKERS

It is evident from Table 5.20 that a large majority of the sample units complain of somewhat satisfactory attitude of workers. This shows that such units are not happy over the performance of workers.
### TABLE 5.20

**LABOUR - ATTITUDE AND PROBLEMS**

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Industry Category</th>
<th>Attitude</th>
<th>No. of Units</th>
<th>Nature of Problems</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Some what Satisfactory</td>
<td>Satisfactory</td>
<td>Total</td>
</tr>
<tr>
<td>1</td>
<td>Eng. Units in IEs</td>
<td>95</td>
<td>25</td>
<td>120</td>
</tr>
<tr>
<td>2</td>
<td>Non-Eng. Units in IEs</td>
<td>34</td>
<td>6</td>
<td>40</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>129</td>
<td>31</td>
<td>160</td>
</tr>
<tr>
<td></td>
<td>(81)#</td>
<td>(19)</td>
<td>(100)</td>
<td>(68)</td>
</tr>
<tr>
<td>3</td>
<td>Eng. Units outside IEs</td>
<td>31</td>
<td>9</td>
<td>40</td>
</tr>
<tr>
<td></td>
<td>(78)</td>
<td>(22)</td>
<td>(100)</td>
<td>(30)</td>
</tr>
</tbody>
</table>

# : Figures in brackets indicate percentage to the total.

**Source** : Primary
NATURE OF LABOUR PROBLEM

As is clear from Table 5.20, one of the main problems regarding labour, faced by all the sample units in the IEs is the high rate of absenteeism and turnover. It accounts for 68 percent of the total number of sample units in the IEs.

As between eng. units in and outside the IEs, 66 percent of eng. units in IEs encountered the above problem, whereas only 30 percent of their counterparts located outside the IEs face this kind of labour problem. Significant difference exists between eng. units in and outside the IEs as regards the above problem of labour with more of eng. units in the IEs, facing this problem. This is because, the rate of payment of wages is relatively lower and and only limited opportunities are available for labourers for further development in the same establishment.

In the case of eng. units outside the IEs, indiscipline among workers is the main problem of labour. 42 percent of these units face this complaint. The reason for more indiscipline among workers is that they are much more organised through trade unions unlike their counterparts inside the IEs. This makes them disobey their masters which in turn breeds indiscipline among workers. The sample units have also complained of other types of labour problems such as not getting adequate skilled labour, high labour cost and inefficiency and growing militancy and disloyalty among workers.
VALUE OF PRODUCTION

Test for Mean is employed to ascertain whether there is any significant difference between eng. and non-eng. units within the IEs and between eng. units in and outside the IEs as regards their value of production per annum. The necessary computation is shown in Appendix 6.7.

\[ Z_{a1} = 0.30 < 1.96 \] reveals that there is no significant difference between the eng. units and non eng. units in the IEs as regards the value of production per annum. However, \[ Z_{a2} = 5.05 > 1.96 \] shows that there is significant difference between eng. units within and outside the IEs as regards the value of production per annum. The value of production for the eng. units outside IEs is greater. The reasons are quite obvious. These units face relatively less problems relating to power, finance, raw materials and personnel than their counterparts within the IEs. This enables them to concentrate more on production resulting in higher value of output per annum.

NO. OF SHIFTS IN PRODUCTION

As between eng. units within and outside the IEs, 68 percent of the eng. units within the IEs work for two shifts a day whereas 72 percent of the sample eng. units outside the IEs work for two shifts. Chart 5.4 depicts the number of shifts in production by the sample eng. units.
CHART 5.4
NO. OF SHIFTS IN PRODUCTION

No. of Units in %

<table>
<thead>
<tr>
<th>No. of Shifts in Production</th>
<th>Eng. in IEs</th>
<th>Eng. outside IEs</th>
</tr>
</thead>
<tbody>
<tr>
<td>One Shift</td>
<td>16</td>
<td>8</td>
</tr>
<tr>
<td>Two Shifts</td>
<td>68</td>
<td>72</td>
</tr>
<tr>
<td>Three Shifts</td>
<td>16</td>
<td>20</td>
</tr>
</tbody>
</table>
Large Sample Test for Proportion

\[ Z_o = \frac{|P_1 - P_2|}{\sqrt{P_1 (1-P_1)/N_1 + P_2 (1-P_2)/N_2}} \]

\[ P_1 = \frac{82}{120} = 0.683 \]

\[ P_2 = \frac{29}{40} = 0.725 \]

\[ N_1 = 120 \]

\[ N_2 = 40 \]

\[ Z_o = \frac{0.683 - 0.725}{\sqrt{0.683 (1-0.683)/120 + 0.725 (1-0.725)/40}} \]

\[ Z_o = 0.51 < 1.96 \]

It is clear that \( Z_o = 0.51 < 1.96 \) reveals that there is no significant difference between eng. units within and outside the IEs as regards the number of shifts in production. This shows that both of them work only for two shifts a day. Very limited number of sample units work for three shifts a day.

**EXTENT OF CAPACITY UTILISED**

The median percentage of extent of capacity utilised by the sample eng. units outside the IEs is greater at 83.9 percent than their counterparts located in the IEs at 63 percent. This has of course reflected in the form of higher value of output per annum for eng.units outside the IEs. The computations pertaining to the average capacity utilised by the sample units is presented in Appendix 6.8.
Bi-variate Correlation Analysis has been used to find whether any significant relationship exists between the variables viz., capital invested and capacity utilised on the one hand and between capital invested and the number of personnel employed on the other, for the sample units in IEs. The necessary calculation have been shown in Appendix 6.9 and 6.10.

\[ t_{a1} = 12.5 > 1.96 \text{ and } t_{a2} = 2.13 > 1.96 \]

The analysis reveals that the significant relationship exists between capital employed and capacity utilised as well as the number of personnel employed.

This analysis points out that with application of more and more dosage of capital, it is possible to increase the extent of capacity utilised and also enhance the employment potential. This further reveals that there is every reason for extending adequate financial facilities to SSI units in IEs.

**PRODUCTION PROBLEMS**

As evident from Table 5.21, 90 percent of the eng. units in the IEs attribute production problems to inadequate working capital, delayed payments from customers and irregular power supply, whereas 93 percent of the eng. units outside the IEs. Complain of this problem. Table 5.21 further reveals that sample units face other problems such as high rate of absenteeism and lack of adequate raw materials.
Table 5.21
PRODUCTION PROBLEMS

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Nature of Problem</th>
<th>No. of Units</th>
<th></th>
<th>Outside</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Industrial</td>
<td>Industrial</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Estates</td>
<td>Estates</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Eng. units</td>
<td>Non-Eng.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>units</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Total</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Inadequate working capital &amp; delayed</td>
<td>68</td>
<td>23</td>
<td>91(57)#</td>
</tr>
<tr>
<td></td>
<td>payments</td>
<td></td>
<td></td>
<td>29(73)</td>
</tr>
<tr>
<td>2</td>
<td>Higher rate of absenteeism</td>
<td>8</td>
<td>4</td>
<td>12(7)</td>
</tr>
<tr>
<td>3</td>
<td>Irregular Power Supply</td>
<td>40</td>
<td>13</td>
<td>53(33)</td>
</tr>
<tr>
<td>4</td>
<td>Inadequate raw materials</td>
<td>4</td>
<td>-</td>
<td>4(3)</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>120</td>
<td>49</td>
<td>160(100)</td>
</tr>
</tbody>
</table>

# : Figures in brackets indicate percentage to the total

Source : Primary

GENERAL PROBLEMS

ATTITUDE OF GOVERNMENT

As shown in Chart 5.5, 70 percent of the sample eng. units in the IEs have admitted that Governments attitude is not co-opreative towards them, whereas 90 percent of the sample eng. units outside the IEs have said that they are not happy over the attitude of the Government. Many SUs in the IEs of Tamil Nadu want a change in the attitude of the Government in dealing with the SSI units in the IEs.
CHART 5.5
ATTITUDE OF GOVERNMENT

No. of Units in %

Non-Co-operative

- Eng. in IEs: 70
- Non-Eng. units IEs: 85
- Eng. units o/s IEs: 90

Co-operative

- Eng. in IEs: 30
- Non-Eng. units IEs: 15
- Eng. units o/s IEs: 10

Attitude of Government

Legend:
- Eng. in IEs
- Non-Eng. units IEs
- Eng. units o/s IEs
ROLE OF SSI ASSOCIATION

Table 5.22 reveals that 82 percent of the sample eng. units in the IEs opined that the SSI association helped them in representing their interest and problems at the Government level, whereas only 55 percent of the sample eng. units outside IEs have admitted that their problems is represented through their association at the Government level.

TABLE 5.22
SAMPLE UNITS AND SSI ASSOCIATION

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Nature of Benefits</th>
<th>No. of Units</th>
<th>Industrial Estates</th>
<th>Outside Industrial Estates</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Eng. units</td>
<td>Non-Eng. units</td>
<td>Total</td>
</tr>
<tr>
<td>1</td>
<td>Representing SSI interest</td>
<td>98</td>
<td>10</td>
<td>108(68)#</td>
</tr>
<tr>
<td>2</td>
<td>Dissemination of Information</td>
<td>6</td>
<td>17</td>
<td>23(14)</td>
</tr>
<tr>
<td>3</td>
<td>Encouraging New Entrepreneurs</td>
<td>13</td>
<td>13</td>
<td>26(16)</td>
</tr>
<tr>
<td>4</td>
<td>Conducting fairs and exhibitions</td>
<td>3</td>
<td>-</td>
<td>3(2)</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>120</td>
<td>40</td>
<td>160(100)</td>
</tr>
</tbody>
</table>

# : Figures in brackets indicate percentage of the total

Source : Primary
Large Sample Test for Proportion

\[ Z_0 = \frac{|P_1 - P_2|}{\sqrt{P_1 (1-P_1)/N_1 + P_2 (1-P_2)/N_2}} \]

\[ P_1 = \frac{98}{120} = 0.82 \]
\[ P_2 = \frac{22}{40} = 0.55 \]
\[ N_1 = 120 \]
\[ N_2 = 40 \]

\[ Z_0 = \frac{|0.82 - 0.55|}{\sqrt{0.82 (1-0.82)/120 + 0.55 (1-0.55)/40}} \]

\[ Z_0 = 3.13 > 1.96 \]

The above test for indicates that \( Z_0 = 3.13 > 1.96 \). This shows that there is significant difference between eng. units within and outside IEs as regards the benefit derived as members of SSI Associations representing their interest at the Government level. This indicates that more eng. units in the IEs derive the benefit of their interest being represented at the Government level than their counterparts outside IEs. This is because the SSI association in IEs, mainly strive to help small units in trying to get more benefits from Government.

Table 5.22 also reveals that sample units derive certain other benefits from their association such as dissemination of information on latest technology, encouraging new entrepreneurs and conducting fairs and exhibitions.
GENERAL PROBLEMS

As revealed in table 5.23, 76 percent of the sample units in the IEs face the problem of improper and inadequate maintenance of IEs by SIDCO. This includes 79 percent of the sample eng. units. The sample eng. units outside IEs face general problems such as political manipulations and unfavourable business conditions.

**TABLE 5.23**

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Nature of Problems</th>
<th>Industrial Estates</th>
<th>Outside Industrial Estates</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Eng. units</td>
<td>Non-Eng. units</td>
</tr>
<tr>
<td>1</td>
<td>Political manipulations</td>
<td>6</td>
<td>2</td>
</tr>
<tr>
<td>2</td>
<td>Unfavourable business condition</td>
<td>19</td>
<td>12</td>
</tr>
<tr>
<td>3</td>
<td>Improper and inadequate maintenance of IEs</td>
<td>95</td>
<td>26</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>120</td>
<td>40</td>
</tr>
</tbody>
</table>

# : Figures in brackets indicate percentage of the total

Source : Primary

★★★★★★★★