CHAPTER IV: RESEARCH METHODOLOGY
RESEARCH METHODOLOGY

4.1 Statement of Problem

Despite the long history of Nepalese business, its pace of development is slow. It was only in 1936 when industrial development got started with the establishment of Biratnager Jute Mill as the first corporate body of the country. Private sector as being characterized as small, shy, scattered and unorganized, the state has to come out of its traditional duties and intervene in the business to speed up the social and economic development of the country. With the professed objectives such as to minimize imports, to produce and supply essential goods and development and construction materials, different economic plans of the country have placed much emphasis on the establishment of the public enterprises. After 1954, since the turning of Nepal Bank Limited as a private sector enterprises, there has been spurious growth of many enterprises in varied sectors. Dissemination of some governmental departmental activities and special characteristics of foreign aided projects further aided the proliferation of public enterprises in the country. During the period of nineteen years, between the dawn of economic plan (1956) to 1975
(end of the Fourth Plan), the number of public enterprises grew to 61 enterprises. At present 44 public enterprises including 12 manufacturing enterprises are operating.

Public enterprises have contributed through various means in the development process of the country. In the manufacturing sector, some of the largest industries with substantial share in total industrial activities are in the public sector. The employment generated by the public sector enterprises is .82 percent of total economically active population of 6.84 million of the age group between the 15 and 59 years (CBS, 1995). They have contributed through import substitution, export promotion and strengthening the revenue generation of HMG/N.

Despite the pronounced role of public enterprises adequate indications, however, are available that the performance of public enterprises has yet to be desired. It has been reported by plenty of research surveys and the government reports that the public sector enterprises are not able to justify massive investment and efforts extended for the growth of these enterprises. The draft of the Ninth Plan (NPC, 1998) states "the government formed after the resumption of democracy in 1990 has concluded that the performance of the public sector enterprises is not satisfactory". With respect to profitability of these enterprises, the gross profit of 5.9 percent in 1970/71 (CCC, 1975) came down to 3.7 percent in 1974/75 (CCC, 1975) which continued to deteriorate
and turned into negative figure of 4.69 percent on net capital employed in 1980/81 (HMG, 1995/96). During the period of 1987/88 to 1996/97, the highest percentage of gross profit on net capital employed is 3.22 percent. The draft of the Ninth Plan further laments that financial performance of manufacturing and trading sectors is worse with negative rate of return of 9.4 percent and 55.7 percent respectively in 1996/97.

Previously, some of the public sector enterprises enjoyed monopoly market, now the situation has changed lot. On one hand, competition is growing as a result of liberalization prevailing in the most of the countries, on the other hand HMG/N has embarked on privatization policy to reduce its burden on economic activities (NPC, 1998). With all these accounts, public sector enterprises have to be commercially viable and to survive with growth and development. But a serious accusation that is always labeled to these enterprises is that they are far behind the professed objectives for which they are established and the expectations of both people and the government.

There might be ample, explicit as well as implicit, reasons for these enterprises to produce unsatisfying performances, but the crucial might be the styles adopted for making decision. Referring to same reason, HMG/N also pinpoints the managerial aspect being not able to become professional and severe lack of efficiency and skill in decision making (NPC, 1998).
The way decisions are made has far reaching impact on the choice and implementation of course of action and other performance. This point out the management weaknesses in decision making, the understanding of which requires the investigation of basic philosophies on which decisions are made. Thus, the study of managerial decision styles and its relationships with organizational effectiveness have become a present day necessity. The study, in relation to public sector enterprises, is even more important because of increasing globalization, growing thrust of the government for privatization and liberalization and the speedy pace of changing environment. The study is, therefore, designed to address the pertinent decision styles and its relationship with the organizational effectiveness.

4.2 Need and Objectives of the Study

The business community of Nepal, despite its long history, is usually characterized as family owned, traditional and unplanned and is often accused to fail to lead the business sector of the country. The private sector has always been described as shy, scattered, risk aversion attitude and lack of capital. With all these background state had to take part in business sector unraveling itself from the traditional role as the agent for security and maintenance of law and order. Thus, the state intervention in business sector is the consequence of the deliberate attempt of the government in pursuance of economic development and social justification. Realizing the fact that unless the government intervenes the economic activity development is far reaching
result, public sector enterprises have been established to serve the need of many sectors. Substantial investment has been committed from public coffer to public enterprises resulting in exponential growth in number, size and investment. Despite the massive emphasis and commitment embarked on the public enterprises which have been supposed to become effective instrument for all round development of the country, their performance are frequently reported, through the different reports and publications of different years, to be hazy and disappointing. The Economic Survey (1992/93) alleges that public enterprises have been a drain on the budget, have provided inadequate goods and services, and constrained the entry of private entrepreneurs in the market. Similarly, Economic Survey (1995/96) stressed that the improvement in the efficiency of the public enterprises needs attention.

Performance problems can create major blocks in economic and social development. The Seventh Plan (1985-1990) while formulating the policy for public enterprises clearly stated that the financial situation of the government corporations, as a matter of fact, is in a very poor shape. The plan further points out the following causes for the unsatisfactory performance of the government corporations:

1. Lack of clear cut and result oriented objectives.
2. Inability to make the management fully responsible to fulfill predetermined objectives.
3. Inability to develop skill management cadre.
4. Inability to make the top management fully responsible and accountable (NPC, 1985).

The unsatisfactory performance of these enterprises might be the result of several factors among which the management problem is very crucial one. The Eighth plan (1992) registered a serious allegation against the performance of these enterprises as having reached a stage of great inefficiencies, indifference and apathy. The financial liabilities of these enterprises exceeded the capacity of the government. The Ninth Plan (1998) pinpoints the absence of fundamental elements necessary for the development of commercial culture in organization and management. The problems indicated by the Ninth Plan are inefficient use of resources, lack of competitive competency, lack of employees' motivation and absence of professionalism. With this perspective, it seems important to investigate the philosophies on which these enterprises have been operating its internal mechanisms which, in turn, is guided by organizational culture of these enterprises.

Kast and Roseinweig (1984) have attributed the organizational cultures, the major constituent, to evolve the basic philosophies on which decisions are made and style is evolved which affects the way resources are allocated, strategy for growth and survival are formulated and the structure of the organization. Thus every activity and commitment of organization are substantially influenced by the prevailing culture, beliefs and values on the
basis of which decisions are made and carried out. With all these accounts, now when public sector enterprises are accused to have mediocre performance making public money unproductive on one hand, on the other hand, thrust for liberalization and privatization is growing, these enterprises are in a high time to reconstruct and to rethink about the way they are doing their jobs. Chances are high for being absolute failure if things are done in traditional fashion. It has, therefore, become urgent to investigate the styles adopted by these enterprises and their relationships with effectiveness. This study has been expected to serve the necessity of today's problems faced by the public enterprises.

With this background, the study has embodied the following objectives:

1. to assess the managerial decision styles adopted by the selected manufacturing public enterprises in Central Development Region of Nepal.

2. to evaluate the organizational effectiveness of these manufacturing public enterprises in Nepal,

3. to examine the relationship between decision styles and organizational effectiveness with reference to these enterprises, and

4. to identify the decision styles associated with the effective manufacturing public enterprises in Nepal.
Along with these objectives, decision styles as viewed by function wise, level wise and experience wise have also been included in the study.

4.3 Limitations of the Study

The study is subject to following limitations:

1. The study has covered manufacturing public enterprises in Central Development Region of Nepal only.

2. The assessment of decision styles and the subjective measure of organizational effectiveness has been based on the perceptions of the managers of lower level (organizational ranks of 6 and 7) and middle level managers (organizational ranks of 8 and 9). This is based on one time response and ignores the time dimension. This is guided by the assumption that the styles remain more or less stable in the organization over the years. The exclusion of top echelon of the organisation is guided by the rational that the style or culture is mostly established by the top leaders and they might be bias in rating the culture which is established by themselves. The exclusion of lower echelon of the organisation (organizational ranks from one to five) which comprises mostly working class people is based on the assumption that they have little or no understanding of the culture on the basis of which decisions are made. Moreover, the employs of lower echelon are often reported as agitating group against the decision making level. Therefore, their perception may not reflect the true picture.
3. Objective measure of organizational effectiveness has been evaluated for last ten years from 1987/88 to 1996/97.

4.4 Hypothesis of the study

The following hypotheses have been developed for purpose of the study:

1. There is no significant difference among the perceptions of the managers of the organizations under study with respect to various elements of each dimension of managerial decision style.

2. There is no significant difference among the perceptions of managers of organisations under study with respect to various differential elements of each dimension of managerial decision style.

3. There is no significant difference among the perceptions of lower and middle level managers of the organisations under study with respect to various elements of each dimension of managerial decision style.

4. There is no significant difference among the perceptions of managers of with different numbers of years experience with respect to different elements of managerial decision style.

5. There is no significant relationship among the combinations of different dimensions of managerial decision style as perceived by different organizations under study.

6. There is no significant relationship among the combinations of different dimensions of managerial decision style as perceived by different functional managers of the organisations under study.
7. There is no significant relationship among the combinations of different dimensions of managerial decision style as perceived by different hierarchies.

8. There is no significant relationship among the combinations of different dimensions of managerial decision style as perceived by the managers having different number of years experience.

9. There is no significant difference among the perceptions of managers of organisations under study with respect to subjective measure of organizational effectiveness.

10. There is no significant difference among the perceptions of managers of different functional areas with respect to subjective measure of organizational effectiveness.

11. There is no significant difference among the perceptions of lower level and middle level managers with respect to subjective measure of organizational effectiveness.

12. There is no significant difference among the perceptions of managers with different number of years experience with respect to subjective measure of organizational effectiveness.

13. There is no significant relationship among the extent of subjective measure of organizational effectiveness in organizations under study.

14. There is no significant relationship among the extent of objective measure of organizational effectiveness achieved by organizations under study.
15. There is no significant relationship between the subjective measure and objective measure of organizational effectiveness.

16. There is no significant relationship between the dimensions of managerial decision style and dimensions of organizational effectiveness.

4.5 Research Method

Five dimensions of managerial decision style have been considered for the study purpose. Each dimension is represented by a style. The styles of five dimensions are (i) participative decision style, (ii) flexible decision style, (iii) coercive decision style, (iv) entrepreneurial decision style and (v) planning decision style. Each style has been assumed to be independent and unique of each other. Each style has its own characteristics and determinants on the basis of which the style has been identified. Organizations, rather than individual manager, have been chosen as the unit of analysis. The different styles representing the five dimensions may prevail in an organization in varying degree and the composition of which is each organization's managerial decision style. The study has been designed to focus on the combination of these style practiced by these enterprises individually as well as collectively. Organizational effectiveness has been evaluated on the basis of multi-dimensional approach that includes both subjective and objective measures.
The dimensions of objective measure considered for the study includes growth effectiveness, profit effectiveness, activity effectiveness and capacity utilization. The focus of these dimensions is on resource utilization and resource mobilization. The focus of the subjective measure is on satisfaction and productivity. Subjective measures includes efficiency shown by the organizational members, interdepartmental relationships, interpersonal relationship, ability of management in generating and utilizing resources and satisfaction. Organizational effectiveness has been viewed from organizational point of view.

The relationship between the managerial decision styles and organizational effectiveness has been assumed reciprocal, interrelating, interdependent and influencing each other. On this premise it has been assumed some relationship should exist between the managerial decision styles and organizational effectiveness, but no assumption as to cause and effect relationship has been made. Moreover, organizational effectiveness has not been treated as only dependent variable.

Primary data have been used to identify the managerial decision styles and to evaluate subjective measure of organizational effectiveness. In order to evaluate objective measure of organizational effectiveness, secondary data have been used. Primary data have been gathered through questionnaire administration to the managers of public sector enterprises. Unscheduled
interviews have also been conducted to support the questionnaire and to overcome the deficiency of the questionnaire. The perceptions of the managers of the public sector enterprises with respect to decision styles and subjective measure of organizational effectiveness have been obtained. This is a single shot approach employed with the assumption that decision styles in the organizations remains stable over the years.

Secondary data have been obtained from the published records of the respective organizations, Auditor's General Report, Ministry of Finance and National Planning Commission.

4.6 The Sample

This study covers public sector manufacturing enterprises in Central Development Region of Nepal. At present, twelve manufacturing enterprises are operating in Nepal among which nine enterprises are in Central Development Region (Annex A). For the research purpose, six enterprises have been selected (representing 50 percent of total manufacturing public enterprises of the country and 67 percent of enterprises of Central Development Region). The selected organizations are as follows:

1. Birgung Sugar Factory Ltd.
2. Dairy Development Corporation
3. Hetauda Cement Industry Ltd.
4. Hetauda Textile Industry Ltd.
5. Janakpur Cigarette Factory Ltd.
6. Royal Drugs Limited.

Brief profiles of these organizations have been presented in chapter III. The bases considered in the selection of these organizations are: the age of the enterprises, product affiliation and competitive situations that faced by these enterprises. The sample enterprises and their respective selection criteria have been presented in Table 4.1. The ages of sample organizations vary between 19 years and 34 years. The product lines of each sample organizations are distinctly different and all these organizations have to face medium and high level of competition from manufacturing enterprises of inside and outside the country.

Since primary information have to be obtained through questionnaire administration, sample respondents have been selected. Respondents from lower level managers (organizational ranks of 6 and 7) and middle level managers (organizational ranks of 8 and 9) have been considered. Personnel in organizational ranks of 1 to 5 (lower level echelon of enterprise) have been assumed to have little or no understanding of the organization's situation with respect to decision-making. Personnel above rank 9 belong to top echelon of management and are involved in many aspects of decision-making. Their assessment with respect to the manner they adopt in decision-making may be bias. Therefore, these two echelons (lower and top) have been excluded in the study. The rationale behind the consideration of managers of 6 to 9 ranks is the position of managers of these ranks serving as the translating agents of ideas.
into action. They act as bridge between the top and lower echelons of the enterprise and maintain relationships with different groups. Thus, their perceptions on the different aspects of organization reflect reasonably veritable picture.

Table 4.1
Sample Organizations

<table>
<thead>
<tr>
<th>Organizations</th>
<th>Age</th>
<th>Product Affiliation</th>
<th>Competitive Situation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Birgunj Sugar Factory</td>
<td>34</td>
<td>Sugar</td>
<td>Medium</td>
</tr>
<tr>
<td>2. Diary Development Corporation</td>
<td>29</td>
<td>Dairy Product</td>
<td>Medium</td>
</tr>
<tr>
<td>3. Hetauda Cement Factory</td>
<td>19</td>
<td>Cement</td>
<td>Medium</td>
</tr>
<tr>
<td>4. Hetauda Textile Factory</td>
<td>23</td>
<td>Textile</td>
<td>High</td>
</tr>
<tr>
<td>5. Janakpur Cigarette Factory</td>
<td>34</td>
<td>Cigarette</td>
<td>Medium</td>
</tr>
<tr>
<td>6. Royal Drugs Ltd.</td>
<td>26</td>
<td>Medicines</td>
<td>High</td>
</tr>
</tbody>
</table>

4.7 Respondents Profile

Table 4.2 presents the respondents number in sample organizations. The total number of managers working at present in these organizations is 318. RDL has the minimum number of managers (28) and JCF has the maximum (72). The total number of managers performing duties in these organizations is 318 of which questionnaires were distributed to 195 (61 percent of total managers).
It had been intended to include at least 50 percent of total managers in each organization in the sample respondents. Random sampling was employed to select the respondents. Sample includes respondents of all major functions at different hierarchies.

Table 4.2

<table>
<thead>
<tr>
<th>Organizations</th>
<th>No.of Managers</th>
<th>Questionnaire Distributed</th>
<th>Questionnaire Returned</th>
</tr>
</thead>
<tbody>
<tr>
<td>Birgunj Sugar Factory</td>
<td>40</td>
<td>30</td>
<td>28</td>
</tr>
<tr>
<td>Diary Development Corporation</td>
<td>60</td>
<td>35</td>
<td>27</td>
</tr>
<tr>
<td>Hetauda Cement Factory</td>
<td>65</td>
<td>35</td>
<td>30</td>
</tr>
<tr>
<td>Hetauda Textile Factory</td>
<td>53</td>
<td>40</td>
<td>33</td>
</tr>
<tr>
<td>Janakpur Cigarette Factory</td>
<td>72</td>
<td>40</td>
<td>30</td>
</tr>
<tr>
<td>Royal Drugs Ltd.</td>
<td>28</td>
<td>20</td>
<td>16</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>318</strong></td>
<td><strong>195</strong></td>
<td><strong>164</strong></td>
</tr>
</tbody>
</table>

Since analysis have been done on function-wise, level-wise and experience-wise along with organization-wise, respondents' profile on these has been presented in Tables 4.3, 4.4 and 4.5 respectively.
Since all organizations are engaged in manufacturing and marketing of products, they seem to have similar functional categories. Four functional groups have been classified:

1. Marketing: Selling, purchase, stores, market research.
2. Finance: Account department, internal audit, and costing department.
3. Production: Design quality control, engineering, and maintenance.

Two categories of hierarchical level in terms of organizational ranks have been developed as below:

1. Lower level managers (having the organizational ranks of 6 and 7).
2. Middle level managers (having the organizational ranks of 8 and 9).

In addition, respondents have been categorized into three groups. Personnel having less than 5 years' experiences have been excluded as their knowledge about their organization have been assumed to be very little. The categories of respondents in terms of experience are as below:

1. 5 to 10 years' experience
2. 10 to 15 years' experience
3. Above 15 years’ experience

Table - 4.3

Function-wise Respondents Number

<table>
<thead>
<tr>
<th>Organization</th>
<th>Marketing</th>
<th>Finance</th>
<th>Production</th>
<th>Administration</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Birgunj Sugar Factory</td>
<td>6</td>
<td>6</td>
<td>8</td>
<td>8</td>
<td>28</td>
</tr>
<tr>
<td>Diary Development Corporation</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>9</td>
<td>27</td>
</tr>
<tr>
<td>Hetauda Cement Factory</td>
<td>9</td>
<td>9</td>
<td>6</td>
<td>6</td>
<td>30</td>
</tr>
<tr>
<td>Hetauda Textile Factory</td>
<td>6</td>
<td>12</td>
<td>6</td>
<td>9</td>
<td>33</td>
</tr>
<tr>
<td>Janakpur Cigarette Factory</td>
<td>6</td>
<td>9</td>
<td>9</td>
<td>6</td>
<td>30</td>
</tr>
<tr>
<td>Royal Drugs Ltd.</td>
<td>4</td>
<td>2</td>
<td>6</td>
<td>4</td>
<td>16</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>37</strong></td>
<td><strong>44</strong></td>
<td><strong>41</strong></td>
<td><strong>42</strong></td>
<td><strong>164</strong></td>
</tr>
<tr>
<td>Organizations</td>
<td>Lower Level</td>
<td>Middle Level</td>
<td>Total</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-----------------------------</td>
<td>-------------</td>
<td>--------------</td>
<td>-------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Birgunj Sugar Factory</td>
<td>14</td>
<td>14</td>
<td>28</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Diary Development</td>
<td>15</td>
<td>12</td>
<td>27</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Hetauda Cement Factory</td>
<td>12</td>
<td>18</td>
<td>30</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Hetauda Textile Factory</td>
<td>9</td>
<td>24</td>
<td>33</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Janakpur Cigarette Factory</td>
<td>12</td>
<td>18</td>
<td>30</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Royal Drugs Ltd.</td>
<td>8</td>
<td>8</td>
<td>16</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>70</td>
<td>94</td>
<td>164</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 4.5
Experience-wise Respondents’ Number

<table>
<thead>
<tr>
<th>Organizations</th>
<th>Experience Group</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>5-10 years</td>
<td>10-15 years</td>
<td>Above 15 years</td>
<td>Total</td>
<td></td>
</tr>
<tr>
<td>1. Birgunj Sugar Factory</td>
<td>6</td>
<td>6</td>
<td>16</td>
<td>28</td>
<td></td>
</tr>
<tr>
<td>2. Diary Development Corporation</td>
<td>5</td>
<td>10</td>
<td>12</td>
<td>27</td>
<td></td>
</tr>
<tr>
<td>3. Hetauda Cement Factory</td>
<td>9</td>
<td>9</td>
<td>12</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>4. Hetauda Textile Factory</td>
<td>5</td>
<td>12</td>
<td>16</td>
<td>33</td>
<td></td>
</tr>
<tr>
<td>5. Janakpur Cigarette Factory</td>
<td>6</td>
<td>8</td>
<td>16</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>6. Royal Drugs Ltd.</td>
<td>4</td>
<td>6</td>
<td>6</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>35</strong></td>
<td><strong>51</strong></td>
<td><strong>78</strong></td>
<td><strong>164</strong></td>
<td></td>
</tr>
</tbody>
</table>

4.8 Data Collection

The total managers working at present in central offices of the sample organization is 318 of which questionnaire were distributed to 195. Only 164 managers (Approximately 84 percent) responded. Some of the respondents did not returned the questionnaire because of their busy schedule and some did not show interest on filling questionnaire.

Coefficient alpha method was used for reliability test which is appropriate for the questionnaire composed of items scores with values other than 0 and 1 (Cronbach, 1964). The coefficient of reliability was found .71, which is high enough to accept the questionnaire as coefficient of .65 is the generally
accepted minimum standard (Ebel, 1969). However, follow up interviews with the respondents were also conducted in order allow qualitative judgements or comments on the issues covered by questionnaire. In order to evaluate the validity of the questionnaire, discussions with the academicians and practitioners were held. Persons with whom discussions were held were the professors of Tribhuvan University Kathmandu, Nepal; Joint Secretary and Section Officers of the Ministry of Finance; and Officers of Dairy Development Corporation.

The secondary data, required to evaluate the objective measure of organizational effectiveness, have been collected from the bulletin, brochure and published records of the respective organizations. Besides, other sources such as reports published from National Planning Commission, Ministry of Finance and Auditor's General Offices has been used to gather the secondary data.

4.9 Analysis Procedure

The study is designed to identify and evaluate five scales of decision styles and two scales of organizational effectiveness. Six (five of decision styles and one of subjective measure of organizational effectiveness) among the seven scales were developed from the questionnaire and the remaining one from the secondary sources.
Questionnaire consists of 48 statements (Annex - D) with the continuum of five points rating scales ranging the weightage from strongly agree (5) to strongly disagree (1); extremely high (5) to extremely low (1); and extremely satisfied (5) to extremely dissatisfied (1). Respondents were asked to indicate the scales that they normally believe to prevail in their respective organizations.

Participative decision style scale includes eighteen statement (statement member 1 to 18 in questionnaire) the primary elements of which are goal setting, communication, process influence and decision making. Statements number 1,2,4 and 5 have to be reversed in order to commensurate with other elements of participative decision style. The aggregate score of an individual respondent may vary between 18 to 90. Higher the score higher the participative style adopted by the organization as perceived by the respondents.

Flexible decision style scale consists of eight statements (statement number 19 to 26 in questionnaire). Flexibility has been defined as loosely defined task, authority, methods, leniency in following formally laid down rules, regulation and procedures and free flow of communication. All the statements are of mechanistic character and therefore have to be reversed to qualify for the organic character. Aggregate score of an industrial respondent may vary between 8 and 40. Higher the score higher is the flexible decision style.
Coercive decision style has been defined as being characterized by threats and pressures, sudden introduction of changes in organization without information, warning to subordinate on resisting changes. This scale of decision style contains four statements (statements 27 to 30 in questionnaire). Statement 28 has to be reversed in order to qualify the character. The aggregate score of an individual can vary between 4 to 20. A higher score means higher extent of coercive style in the organization.

Entrepreneurial decision style is characterized by making bold decisions, risk seeking, innovativeness, dependence on research and development. This scale uses six statements (Statements 31 to 36 in questionnaire). Statements 32, 34 and 36 have to be reversed in order to qualify the entrepreneurial style. Individual respondent may score between 6 and 30.

Planning decision style is characterized by orientation towards strategic planning, investment planning, and reliance on experts on decision making, scientific and systematic analysis of problems, market research and forecast. Seven statements (statements 37 to 43) have been included in this scale. Individual score may vary between 7 to 35.

Subjective measure of organizational effectiveness have been measured on the dimensions such as 'efficiency shown by organizational members in doing job', 'management's ability to generate and utilize the resources', 'interdepartmental
relationship', 'interpersonal relationship' and 'satisfaction'. The perceptions of respondents on these dimensions have been used to evaluate this scale. Five statements have been included in this scale (statement number 44 to 48 in questionnaire).

Aggregate data have been analyzed for the findings. The responses of each respondent on the statements of the independent scale have been added to determine his score on that scale. The sum of aggregate scores of all the respondents of a given organization is obtained which is divided by the number of respondents of that organization to obtain the mean score of that organization. The mean scores are converted into weighted scores in order to explain in relative term. The weighted scores have been obtained by dividing the mean scores by the maximum possible scores. Further the responses have been classified into three categories of high, medium and low. Responses indicating 4 and 5 rating scale of the statements have been classified as high; responses indicating rating scale of 3 have been classified as medium; and responses indicating rating scales of 1 and 2 have been considered low. These three categories have been presented in percentage term on total respondents of a given organization.

The mean value and standard deviation have been calculated for each dimension of each style and subjective measure of organizational
effectiveness. The mid value of 3, on the rating scale of 5, has been used as the basis of analysis and interpretation of the mean value.

In order to find out the discrepancy of the judgements of respondents of two hierarchies with respect to decision styles and subjective measure of organizational effectiveness, 't' test has been employed.

ANOVA has been employed in each dimension of decision styles and subjective measure of organizational effectiveness. The basic purpose of using 'F' ratio (ANOVA) is to find out the inter-rater agreement as well as to identify whether or not the groups of raters are different to each other.

Spearman's Rank Order Correlation Coefficient ($r_s$) has been employed to explore the relationships among the various variables. The efficiency of Spearman's Rank Correlation Coefficient ($r_s$) is about 91 percent as compared to Pearson 'r', the most used parametric correlation (Hotelling and Pabst, 1936).

Besides the organization-wise analysis, function-wise, level-wise and experience-wise analysis have also been induced in the study.
Objective measure of organizational effectiveness has been evaluated on four main dimensions: (1) growth effectiveness, (2) profit effectiveness, (3) activity effectiveness and (4) capacity utilization.

The indicators considered for the evaluation of growth effectiveness are sales volume, capital employed, net fixed assets (net block) and net worth. The use of these indicators is guided by the fact that growth in sales volume indicates the growth of the company requiring larger resources like working capital, fixed assets etc. to sustain it; changes in capital employed indicates the capacity of the organization in resource mobilization; net block indicates whether the organization is growing in investment or stagnant; and net worth shows (i) the capability of organization in mobilizing its resources from the existing or the potential shareholders and (ii) the increase in reserve through satisfactory level of profitability.

Since profit is the resultant of different resources, it should be judged against the resources used. Profit effectiveness has been evaluated on the basis of profitability ratios such as return on sales, return on net worth, return on capital employed and return on total assets. The logic for using these ratios is that these ratios suggest the extent and performance of resource utilization.

Activity effectiveness has been evaluated on the basis of turnover ratios such as sales to total assets, sales to fixed assets and sales to capital employed.
These ratios reflect the organization's capability in mobilizing the capital resources as well as capability in utilizing them in terms of sales growth.

The capacity utilization has been assessed on the basis of installed capacity.

Analysis of objective measure of organizational effectiveness is based on financial performance (Annex -C) of the organizations over a period of ten years between 1987/88 to 1996/97. A ten years time span has been considered in this study with a view to reduce the impact of any exceptional year. It is assumed that managerial decision styles are basically an organizational culture, which is more durable, and do not fluctuate from year to year. In fact, changes of organizational styles take a planned and sustained efforts over several years.

The growth rates of different dimensions included in objective measure of organizational effectiveness have been obtained for inter-organization comparison. The average annual rate of growth has been obtained by using exponential regression equation $Y = A.e^{Bt}$ where $Y$ represents the value of different objective measure of effectiveness, and estimating value of $B$.

Growth rates of each ratio of each dimension of the objective measure of organizational effectiveness and the their average have been obtained in order to find out the effectiveness score of all organizations in all dimensions. The sum of effectiveness scores of all dimensions has been divided by four
(dimensions included in objective measure of effectiveness) to obtain overall objective effectiveness scores for organization all sample organizations. Overall objective effectiveness scores and subjective effectiveness score have been compared to examine the similarities and differences between the two measures of organizational effectiveness. The ranks of effectiveness scores of these two measures have been combined to get overall effectiveness rank of each organization. These organizations have been ranked in descending order. A typology of the organizations has been evolved on the basis of ranks obtained by each organization on both measures of organizational effectiveness. Organizations with first two ranks have been considered high effective organizations; Organizations with middle two ranks have been labeled medium effective organizations; and Organizations with last two ranks have been considered low effective organizations. Weights such as 1, 2 and 3 are assigned to low, medium and high effective organizations respectively so as to facilitate the examination of the relationships between the different scales of decision styles and the organizational effectiveness.

The relationships among the objective measure of organizational effectiveness in terms of sales revenue, production quantity, profit and capital employed, time series multiple regression analysis based on ordinary least square method (OLS) has been employed. The equations are:

Sales revenue = f (Production quantity, net fixed assets capital employed).

Production quantity = f (Capital employed, employment, net fixed
Profit = f \ (Sales revenue, employment, capacity utilization and capital employed). 

Capital employed = f \ (Sales revenue, net fixed assets, production).