CHAPTER V

RESEARCH METHODOLOGY AND METHODS USED IN CONDUCTING THE PRESENT STUDY
CHAPTER V: RESEARCH METHODOLOGY AND 
METHODS USED IN CONDUCTING 
THE PRESENT STUDY

5.0 Introduction

The research methodology used in the research work is based on a well thought and scientifically designed 'Research Model'. Based on this research model and subsequent designing of suitable instruments for data collection and having administered and executed them furthering research work, a planned and organized 'research study' was carried out during the last four years. The research work involved in depth study of 'corporate cultures' and 'total organizational performance' of six selected leading Indian IT (software and services) companies separately.

The 'research model' has facilitated in depth ground study of each IT business organisation about their specific cultures, their internal systems, business environment, core-values, corporate philosophy and vision, their leadership, corporate image, personality and brand values; quality of management, structures, systems and processes, professionalism, ethical and moral values, and physical manifestations. It also included study of employees' morale, motivation, commitment and loyalty, quality of work life; their products, services, quality, knowledge capital creation, innovation, level of technology; their economic and financial performance, growth, profitability, and inbuilt systems for tacking on the unforeseen challenges affecting corporate performance. Besides, it included study about their concern for community, society, environment and ecology; customer care and satisfaction.

Furthermore, the study also covered taking care of the interests of other stakeholders on part of the corporates, such as, looking after the interests of their
business associates, strategic and alliance partners, suppliers, vendors, service providers and the likes on an equal footing and treating them as their partners in progress. And finally, their overall corporate performance, which included the performances in various facets of their respective organizations.

In this way, the study has finally resulted into a comprehensive and detailed study of their respective ‘corporate culture’ or ‘corporate umbrella culture – (C.U.C.)’ and ‘corporate overall performance - (C.O.P.)’ or, the ‘total organizational performance - (T.O.P.)’, and establishing various types of relationships between these two major dimensions of Indian IT companies (industry) in particular and corporates in general. The methodology and methods used in the present study are being discussed step by step in the succeeding paragraphs:

5.1 Identification of the Problem

Thirty years into the computer and information technology revolution, late starter though India was, it has carved out its own special space in the information technology (IT) arena. Indian expertise and talent drives key sectors of the computers and communication business worldwide. India has become the choicest destination for all IT software and services requirements of the world. India is on the threshold of becoming world’s number one IT player.

A large number of Indian IT companies have emerged on the scene during the last two to three decades. And, the leading Indian IT companies, such as, Infosys Technologies, Wipro Technologies, Tata Consultancy Services, Satyam Computer Services, HCL Technologies and NIIT among others, have become world class companies and major global players on the world IT horizon. They now have profound influence on corporate sector, stock trading, export earnings, job markets, India as a global IT brand and Indian economy as a whole.

These high performing mega Indian IT companies have developed distinct cultures of their own. Their founders and visionary leaders like legendary J. R. D.
Tata, F.C. Kohli, N. R. Narayana Murthy, Azim Premji, S. Ramadorai, Nandan Nilekani, Vivek Paul, B. Ramalinga Raju, Shiv Nadar, Rajendra S. Pawar, and many other business leaders in IT sector have exerted profound influence on IT culture in India and taken lead in shaping the culture of their respective companies. Each of these companies possesses their own distinct culture. They also have different levels of organizational performance and excellence achieved in different areas which are again influenced by the respective company’s culture.

In India, there is no trace of any effort so far by any researcher about study of their corporate cultures as also about their total organizational performance, and establishing correlation or relevance between their corporate cultures and organizational performance. A study like this will not only provide important information and inputs to these companies to fine tune and make required changes in their cultures for better organizational performance, but it will also guide the India’s sunrise industry – the IT industry as a whole. It has been a long felt requirement which should have been carried out by now. This is the sole problem which leads to the present study. It is a step toward fulfilling this long felt need and an endeavour to fill up the research void.

5.2 Objectives of the Study

The objectives of the present study are multi pronged : firstly, to carry out an authentic study of corporate culture and total organizational performance of India’s sunrise industry – the IT industry in general and that of six selected leading Indian IT companies in particular; secondly, to establish correlation between corporate culture and total organizational performance of the six selected IT companies; thirdly, to identify the important parameters of corporate cultures of the selected IT companies as also the strong cultures and the weak ones, and to incorporate timely changes in their corporate cultures in order to get consistently good total organizational performance; fourthly, to arrive at important cultural parameters of IT companies in general and to provide inputs to hundreds
of other IT companies in India to shape their cultures in order to get consistently good organizational performance; and last but not the least, to develop and establish the new concept of ‘total organizational performance’ in the realms of management and corporates.

Also, the present study about corporate cultures and total organizational performance of Indian IT companies and an endeavour to establish correlation between them; and having identified the important cultural elements and parameters required for consistently good total organizational performance, all these can be equally applicable to other corporates and industries in India. Hence, the findings of this research study can be proved useful for all types of industries – to shape their corporate cultures for better organizational performance as also the new concept of ‘total organisational performance’ could be adopted by various companies and industries in India or elsewhere.

5.3 Scope and Coverage of the Study

The study covers ‘corporate cultures’ and ‘total organizational performance’ of six leading Indian IT companies, such as, Infosys, Wipro, Tata Consultancy Services (TCS), Satyam Computer, HCL Technologies and NIIT, having their corporate offices, branches and development centers scattered throughout the geographical region of India as also their branch offices and development centers located in many countries and parts of the world to take care of their global operations:

5.3.1 Why IT (Software) Companies Were Chosen for Study

5.3.1.1 Background

The present research topic was finalized in early 2000. The period around year 2000 witnessed a steep growth in IT software and services industry led by the ‘Y2K’ problem, a worldwide phenomenon to be tackled on top priority. It provided a great opportunity and threw challenges too. Indian software industry
had an edge, armed with its inherent capabilities and leverage over others, took the challenge and made full use of the opportunity.

5.3.1.2 Performance of Indian Industries

Taking up IT hardware industry sector first. The manufacturing of hardware in India started way back in 1975 and kept on limping due to unfavourable government policies, heavy tax regime, red-tapism, import restrictions and high price. And, with the liberalization of Indian economy in 1991-92, though with slow pace, hardware sector could not take off, rather multinational hardware companies entered the Indian markets and snatched major market share of the domestic hardware industries. The early entrants in this field like HCL, Wipro and many other Indian IT hardware companies either left, switched over to or simultaneously entered the more profitable and faster growing IT software sector.

Now moving on to IT software and services industry sector. The year 1999-20000 witnessed the highest revenues and growth in the IT software and services sector. The top 20 companies’ revenues grew by 45.4% in 1999-2000 (Dataquest, 2000) over previous year, exceeding the growth rate of the overall IT industry at 38%. And, the percentage share of the top 20 companies’ revenues in the industry increased from 50.2% in 1998-99 to 52.9% in 1999-00. Another branch of IT, internet based dotcom, e-commerce, also emerged around this period. However, the sudden dotcom boom (2000) had a quick bust (mid-to-end 2001) and decline. It could not sustain.

Lastly, the old timers on the Indian industrial scenario – the traditional industry sectors, such as, engineering, manufacturing, automobiles, electronics etc. sectors were facing stiff competitions from overseas companies entry in the market (due to liberalization itself), under going major restructuring and struggling to survive. There was hardly any growth or further investments in these old economy sectors. Thus, information technology (IT) software and services sector remained the only sunrise industry during this period.
5.3.1.3 Analysis and Final Selection of Industry

Now, going by the above analysis, it is established that during early 2000s, IT software and services was the only growing sector and had tremendous potential for future growth. It was in fact the only rising sector among all industrial sectors. Further, the performance and results of this sector in succeeding years (2000 to 2004) have confirmed that this positive trend continued till the writing of this report. These results have been cited in this report at appropriate places. Hence, the software and services sector of IT industry became the natural choice for the present research work. It was also considered that certain results and findings of the study might give further impetus to this sunrise industry for higher growth and better corporate governance and performance.

5.3.2 Final Selection of IT (Software and Services) Companies for the Present Study

5.3.2.1 Background

At the conceptual stage of this research study, it was intended to carry out study of corporate culture and resultant organizational performance of 4 to 6 numbers of leading Indian information technology companies in order to find out cultural strengths as also the weaknesses of Indian IT software and services companies, establish correlation between culture and performance, and to come out with research findings and facts which could be useful to the corporate world in general and Indian software industries in particular.

5.3.2.2 Selection Criteria and Performance of Indian IT Industry

The selection criteria as decided was strictly based on corporate and financial performance of leading Indian IT software companies around the year 2000 when the topic of the thesis was finalised. Considering performance data of top 6 software companies from a list of 20 IT companies (software and hardware)
based on a study conducted by *Dataquest* (2000)\(^2\) as : **Wipro** – rank 1999-00 (1), revenue 1999-00 (Rs. 2,035.7 crore); rank 1998-99 (2), revenue 1998-99 (Rs. 1,443.2 crore); and growth (41.1%); **Tata Consultancy Services** – rank 1999-00 (2), revenue 1999-00 (Rs. 2,033.9 crore); rank 1998-99 (1), revenue 1998-99 (Rs. 1,652.3 crore); and growth (23.1%); **NIIT** – rank 1999-00 (6), revenue 1999-00 (Rs. 1,095.8 crore); rank 1998-99 (4), revenue 1998-99 (Rs. 861.7 crore); and growth (27.2%); **Infosys Technologies** – rank 1999-00 (9), revenue 1999-00 (Rs. 882.3 crore); rank 1998-99 (9), revenue 1998-99 (Rs. 508.9 crore); and growth (73.4%); **HCL Technologies** – rank 1999-00 (10), revenue 1999-00 (Rs. 830.3 crore); rank 1998-99 (25), revenue 1998-99 (Rs. 649.3 crore); and growth (27.9%); and **Satyam Computer Services** – rank 1999-00 (12), revenue 1999-00 (Rs. 677.1 crore); rank 1998-99 (13), revenue 1998-99 (Rs. 378.1 crore); and growth (79.1%). Here, in the ranking list of top 20 IT software and hardware companies for the year 1999-2000, six Indian software companies with their respective performance and rankings (1\(^{st}\), 2\(^{nd}\), 6\(^{th}\), 9\(^{th}\), 10\(^{th}\), and 12\(^{th}\)) have been cited above. The remaining companies within ranks 1\(^{st}\) to 12\(^{th}\) were mainly hardware companies of foreign origin (ranks 3\(^{rd}\), 4\(^{th}\), 5\(^{th}\), 7\(^{th}\) and 11\(^{th}\)), and one more company (rank 8\(^{th}\)) was a hardware company of Indian origin, and all these six did not qualify the pre-set criteria of 'software company of Indian origin' and hence rejected.

Further, based on another study by Dataquest (2000)\(^3\) about ranking of top 47 listed IT (software and hardware) companies, a detailed evaluation of comprehensive financial performance of the above cited 5 Indian software companies were also carried out to reconfirm their performance and standing as : **Wipro** – rank 1999-00 (1), market capitalization - year ending March 31, 2000 (Rs. 116,882 crore), sales 1999-00 (Rs. 2,372 crore), profits 999-02 (Rs. 301 crore), sales growth 1999-02 (30%); profit growth 1999-00 (77%), and return on capital employed i.e. roce 1999-00 (51%); **Infosys Technologies** – rank 1999-00 (2), market capitalization - year ending March 31, 2000 (Rs. 54,178 crore), sales 1999-00 (Rs. 882 crore), profits 999-02 (Rs. 286 crore), sales growth 1999-02 (73%); profit growth 1999-00 (111%), and roce 1999-00 (41%); **Satyam**
Computer Services - rank 1999-00 (3), market capitalization - year ending March 31, 2000 (Rs. 22,912 crore), sales 1999-00 (Rs. 677 crore), profits 1999-02 (Rs. 135 crore), sales growth 1999-02 (79%); profit growth 1999-00 (85%), and roce 1999-00 (39%); HCL Technologies - rank 1999-00 (4), market capitalization - year ending March 31, 2000 (Rs. 22,174 crore), sales 1999-00 (Rs. 276 crore), profits 1999-02 (Rs. 101 crore), sales growth 1999-02 (122%); profit growth 1999-00 (78%), and roce 1999-00 (49%); and NIIT - rank 1999-00 (5), market capitalization - year ending March 31, 2000 (Rs. 7,327 crore), sales 1999-00 (Rs. 581 crore), profits 1999-02 (Rs. 143 crore), sales growth 1999-02 (27%); profit growth 1999-00 (32%), and roce 1999-00 (50%). Here, in the ranking list of top 47 IT software and hardware listed companies for the year 1999-00, the above 5 Indian software companies with their respective overall performance rankings (1st, 2nd, 3rd, 4th and 5th) reconfirms their top positions in Indian software industry. The other top Indian software company, Tata Consultancy Services, being an unlisted and closely held company of Tata group, was not included in the second set of performance evaluation (but was included in the first evaluation). However, Tata Consultancy Services, whether listed or unlisted, remains Asia's biggest IT software company.

5.3.2.3 Final Selection of IT (Software) Companies for Study

Hence, having gone through two sets of evaluation based strictly on comprehensive financial performance of above Indian software companies, all above six IT companies were finally selected for the present research study. Henceforth, they will be called as – Infosys, Wipro, TCS, Satyam Computer, HCL Technologies and NIIT throughout this research study.

5.4 The Hypothesis

It consists of a series of enunciations numbering ten – to be tested and verified during an on ground study and, if proved, they may be finally established as facts and principles in the realm of business organization and management. They are presented in the following sub-paragraphs:
5.4.0 The Research Enunciations

5.4.1 A 'corporate' or a 'business organisation' possesses a definite culture, a strong or a weak culture, based on its various cultural elements and factors, and is manifested in the form of a comprehensive and all inclusive 'corporate umbrella culture'. (C.U.C : independent variable.).

5.4.2 A corporate culture results into an 'intangible performance' comprising of corporate vision, leadership, image, personality and brand value. (Corporate intangibles : dependent variables.).

5.4.3 A corporate culture has definite bearings on the quality of management, its structures, systems, processes, professionalism, ethical and moral values, and quality of work life. (Management, structures, systems and processes related performance : dependent variables.).

5.4.4 A corporate culture exerts influence on its products, services, quality, technology, innovation and knowledge capital creation. (Products, services, knowledge capital and quality related performance : dependent variables.).

5.4.5 A corporate culture has great bearings on company’s financial and growth performance, profitability, value creation and its ability to take on crisis situations affecting the corporate performance. (Financial, growth, profitability, value creation and ability of tackling unforeseen situations related performance : dependent variables.).

5.4.6 A corporate culture exhibits definite attitudes and contributions towards community, society, environment and ecology. (Social and environmental performance : dependent variables.).

5.4.7 A corporate culture makes impact on its concerns towards employees, customers, business associates, service providers and other stakeholders. (Stakeholders related performance : dependent variables.).
5.4.8 A corporate culture, or a comprehensive and all inclusive ‘corporate umbrella culture’ – (C.U.C.), manifests itself into corporate’s various ‘segmental performances’ – (C.S.P.), and the sum total of these performances becomes the ‘total organizational performance’ – (T.O.P.) of that business entity.

5.4.9 A ‘corporate culture’ (C.U.C. : independent variable) has a high correlation with its ‘total organizational performance’. (T.O.P. : dependent variable.).

5.4.10 And, the correlation between ‘corporate culture’ and ‘total organization performance’ can be instantaneously represented as an index value with the help of C.U.C. and T.O.P. values on a ‘RATIO TWINS’. [ C.C.T.O.P. Index = Z\textsuperscript{CUC} : Z\textsuperscript{TOP} ]

5.5 Research Design

The research design includes – a specially designed research model, its contents, corporate culture and total organizational performance related parameters, boundaries and performance blocks, their explanations, sources of secondary and primary data, instruments design, data collection, administration, etc. They have been described in steps under appropriate headings in the foregoing paragraphs.

5.5.1 Research Model

The ‘Research Model’ specifically designed for the purpose of this study is presented on a separate sheet on the next page (page no. 198, also separately exhibited at the end as per ‘Annexure-B’).

5.5.1.1 Research Model’s Contents

The research study is based on a scientifically designed ‘research model’ which contains ‘eight different study blocks’ - one block containing ‘corporate
umbrella culture’ - (C.U.C.), six blocks dedicated to ‘corporate segmental performance’ - (C.S.P.-I to VI) and the last block meant for ‘total organizational performance’ - (T.O.P.) as under:

### 5.5.1.1.1 The Contents of the Study Blocks of the Research Model:

<table>
<thead>
<tr>
<th>Heading / Description</th>
<th>Code / Legend</th>
<th>Max. Points/ Performance Indicators</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Corporate Culture:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C.U.C Block</td>
<td>‘Corporate Umbrella Culture’ C.U.C.</td>
<td>100</td>
</tr>
<tr>
<td><strong>Corporate Performance:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>‘Corporate Segmental Performances’</td>
<td>C.S.P.(s)</td>
<td>100</td>
</tr>
<tr>
<td><strong>Block-Wise Segmental Performance - (Break Up of Above):</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C.S.P. -I Corporate Intangibles’ Performance</td>
<td>C.I.P.</td>
<td>15</td>
</tr>
<tr>
<td>C.S.P. -II Management and Systems Performance</td>
<td>M.S.P.</td>
<td>20</td>
</tr>
<tr>
<td>C.S.P. -III Products, Services, Knowledge and Quality Performance (P.S.K.Q.K.)</td>
<td>P.S.Q.</td>
<td>20</td>
</tr>
<tr>
<td>C.S.P. -IV Financial, Growth and Value Creation Performance</td>
<td>F.G.V.P.</td>
<td>25</td>
</tr>
<tr>
<td>C.S.P. -V Social and Environmental Performance</td>
<td>S.E.P.</td>
<td>5</td>
</tr>
<tr>
<td>C.S.P. -VI Employees, Customers and Other Stakeholders Performance</td>
<td>E.C.O.S.P.</td>
<td>15</td>
</tr>
<tr>
<td><strong>Corporate Overall Performance:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>T.O.P. Block Total Organizational Performance (T.O.P.) or, Corporate Overall Performance (C.O.P.)</td>
<td>T.O.P.</td>
<td>100</td>
</tr>
</tbody>
</table>
5.5.1.2 Research Model’s Explanations

It is evident from the above descriptions and contents of the research model and weightage points of different blocks that the C.U.C. block is the ‘cause block’ (corporate culture) representing independent variables; C.S.P. blocks I through VI are the ‘effect blocks’ (corporate segmental performance) representing dependent variables; and T.O.P. block is the ‘resultant (result) block’ (Total Organizational Performance), again representing dependent variables which is the sum total of the six corporate segmental performance blocks which are themselves dependent variables.

In other words, various cultural elements and factors in C.U.C. block shape the vision, ambition and provide internal strengths to the corporates to act in a particular way to achieve certain results or corporate goals; and these ambition, vision and strengths of the corporates direct their entire energy and forces towards organizational performance in various spheres which result into corporate’s various segmental performance, led by different cultural elements and factors, in the form of performance blocks namely C.S.P. block-I through block-VI; and the sum total of various segmental performance blocks, such as, C.S.P. I through VI, when added together, give the corporate’s ‘Total Organizational Performance’ – (T.O.P.).

Also, the corporate’s cultural characteristics and strengths (or weaknesses) which result into ‘corporate umbrella culture’- (C.U.C.) represented as C.U.C. block signifying the independent variables and the final ‘result’ or the outcome in the form of ‘total organizational performance’ – (T.O.P.) or ‘corporate overall performance’ - (C.O.P.) so obtained as per T.O.P. block, are compared together in order to find out correlation between the ‘Corporate Umbrella Culture’ – (C.U.C.) and the ‘Total Organizational Performance’ – (T.O.P.) or (C.O.P.).

And, finally, a State-of-the-Art method or technique in the form of a set of ‘TWINS’ (a set of two figures representing C.U.C. and T.O.P. values) have also been ‘hypothesized’ and ‘designed’ for this ‘research study’, which
instantaneously represents the correlation between 'corporate umbrella culture' and 'total organization performance' in the form of an index, such as, C.C.T.O.P. Index = \( Z^{\text{CUC}} : Z^{\text{TOP}} \) (A Ratio), which is to be tested and verified during this research study, and if found to be worthy of the assumption, it may eventually be one of the major contributions of this study towards the 'business and the corporate world'.

5.5.2 Sources of Secondary Data

5.5.2.1 Secondary Data

The available secondary data or information regarding the six selected Indian IT companies Viz. Infosys, Wipro, TCS, Satyam Computer, HCL Technologies and NIIT through various sources, such as, various publications of articles and reports about these companies' cultures, management, financial and other performances etc. from time to time appearing in various IT and business magazine such as Business Today, Computer Today, Dataquest, Business India, Business World, Business Week etc.; and various news and reports published in leading Indian daily-newspapers etc. which were collected by the researcher over a period of 4½ years.

The secondary data collected through above sources have been presented in chapter III : Review of Literature and Reports on IT companies. A brief summary of their respective corporate cultures, organisational performances and their comparative rankings etc. have also been provided. These outcomes, results and information regarding these selected IT companies are being presented as reference. They may serve the purpose of finally comparing these secondary data with the primary data collected during the present study and with the outcomes of their analysis and interpretation etc.

But the secondary data / information presented in chapter-III have not been used as base data for this research study, as they do not emanate from any serious academic or management research work. Thus, for the purpose of this
research study, fresh primary data and detailed information were collected during the course of this study, later on processed and presented in tabular forms in order to carry out their interpretation and arriving at the conclusions and findings. These have been discussed in the succeeding paragraphs step by step and under different headings.

5.5.3 Primary Data: Through Questionnaires

For the purpose of this research study, six Indian IT companies were finally selected on the basis of their past performance and after meeting the preset selection criteria. A number of instruments and questionnaires were constructed and used in course of this study. Main Questionnaire’s part-I on ‘corporate culture’ comprises of 20 questions signifying 20 different dimensions of corporate culture which were in tern based on total 116 items or aspects related to corporate culture which were drawn from the detailed discussions on corporate culture part of the literature review presented in chapter-II of this study report. And, out of these 116 items or aspects, similar or related items or aspects were grouped or clubbed together to form 20 different groups or dimensions which were eventually presented as 20 different questions on different topics in this first part of the questionnaire.

Similarly, the second part of the Main Questionnaire: part-II : on ‘total organization performance’ comprises of 20 questions signifying 20 different dimensions of total organizational performance, which were in tern based on 119 items or aspects related to total organizational performance which were drawn from organizational performance part of detailed discussions and literature review presented in chapter-II of this study report and also from the separate chapter on this topic : Chapter IV : Total Organisational Performance. Further, these 119 items or aspects, based on their similarity, relationships and relevance, were again grouped or clubbed together to form 20 different groups or dimensions which were eventually presented as 20 questions on different topics in this second part of the questionnaire.
Hence, each dimension in both parts of the questionnaires representing a group of clubbed similar and related items or aspects, form an independent question on a specific topic and can be treated as an independent cell in the questionnaire (Tull and Hawkins, 1996, p.567-568). And, the total 20 plus 20 = 40 questions represent 40 independent cells for each IT company under study and for six different selected IT companies, it gives a total of 240 cells in six sets of the ‘Main Questionnaire’.

5.5.3.1 Introduction: ‘Main Questionnaire’ and its Administration

Altogether 210 IT professionals, IT experts, company executives of the six selected IT companies, corporate executives, management consultants, industry watchers, business journalists, shareholders, IT customers, service providers and some of the knowledgeable general public as ‘purposive samples’ (Tull and Hawkins, 1996, p. 547) were personally contacted by the researcher, final printed sets of the ‘Main Questionnaire’ served to them for their responses and were also interviewed by the researcher for the purpose of the study. Due care was taken to ensure that at least 35 people respond for each of the six selected IT companies through the final sets of the main questionnaire, part-I for corporate culture and part – II for total organization and performance.

The survey was conducted mainly in the National Capital Region (NCR) of Delhi viz. Metropolitan City of Delhi, Noida and Gurgaon which have become a major hub of IT software and services in India and all the major IT companies including the six selected IT companies have their branch offices and development centers located in these cities / towns. Also, some of the known people in IT and management fields from Mumbai, Bangalore, Ahmedabad, Pune and Hyderabad were also contacted by the researcher along with the questionnaire sets which were served to them through e-mails and postal services and their responses were collected and also included in the present study.
Even though the study area was restricted to the National Capital Region (NCR) of Delhi comprising of Delhi, Noida and Gurgaon and some responses from other major cities collected through e-mails and postal services, the present samples may be considered fairly representative and can be treated as national level samples for the purpose of the study, because a large number of IT professionals, company executives, management professionals, consultants, business journalists / reporters and others in the selected categories of people as purposive samples contacted and interviewed during this study were hailing from different parts of the country and were posted in the various business organizations and six selected IT companies branches and their development centers based in the National Capital Region of Delhi i.e. the Metropolitan City of Delhi, Noida and Gurgaon.

5.5.3.2 Scales and Instruments Development Process

The required information was collected with the help of a printed 'Questionnaire'. The instrument was constructed during an exploratory survey. A plethora of literature highlighting the factors critical for the assessment of 'Corporate Culture', and 'Organizational Performance' as presented in chapter - II of this study while reviewing the literature on these topics as also literature review and concept development on 'Total Organizational Performance' presented separately in chapter-IV of this study, all these were taken into account while constructing the instrument. In this process the intricacies involved and steps taken are described below.

In the present study, the meaning and scope of the term 'corporate culture' has been broadened to include various elements like corporate leadership, vision, mission, image, personality and brand value etc. in a comprehensive way, and making it an all inclusive and comprehensive – 'corporate umbrella culture' (C.U.C.). And, the new term - 'total organisational performance' (T.O.P.) goes much beyond the traditional meaning of 'corporate performance' (mainly financial performance). The new concept of T.O.P., apart
from financials, systems and management related performances, also includes shareholders value creation, brand value creation, ethics in business, concerns for environment, ecology and society, concerns for other stakeholders (other than employees, customers and investors) etc. as explained in the previous chapter (Chapter-IV).

The study was of complex nature. The comprehensive and multifaceted nature and dimensions of ‘corporate culture’ and ‘total organizational performance’ (Chapter-II and Chapter-IV) by themselves and the complexities involved were well recognized. Also, the separate on ground study and evaluation of ‘corporate cultures’ and ‘total organizational performance’ of six different IT companies (Chapter-III and Chapter-IV) selected for this research study was to be carried out. These companies were having their own distinct corporate cultures and different levels of their total organizational performances, which were to be studied and evaluated comprehensively and independently, without using each other as benchmark or standard. Thus, the study required suitable instruments and methods to address these intricacies.

Hence, it was decided with the help of 3 experts in management field to use a ‘non-comparative rating scale’ also referred to as ‘monadic scales’ (Tull and Hawkins, 1996, p. 374-378)\(^5\) in which respondents are not provided with any standard to be used in assigning ratings, and which is basically a multidimensional ‘numerical scale’ (Guilford, 1971, p. 263-265)\(^6\), an eleven point numerical scale having 0 to 10 on it, and which is also known as the ‘11-point Juster Scale’ (Gendall, Easslemont and Day, 1991\(^7\), p. 257-263 and Tull and Hawkins 1996\(^8\)) which is found to have good predictive validity as well as easily understandable by the respondents, was the best available option in this situation and which has been used in this research study.

Consequently, the basics of an ‘11-point Juster scale’, a multidimensional ‘non-comparative attitudinal scaling’ having 0 to 10 on it, and instantaneously convertible to a ‘percentage scale’ (Westbrook, 1980, p. 69)\(^9\)
were followed and a suitable measuring scale with 0 to 10 on it, 0 being the least or non-existent of an attribute and 10 being the maximum / most or 100% existence of an attribute, was designed and incorporated into the instrument.

Further, while taking into account the various elements, factors or dimensions related to ‘corporate culture’ and ‘total organizational performance’ in a comprehensive way, initially, 131 items or aspects related to ‘corporate culture’ were identified and grouped under twenty five dimensions or factors; and were prepared on an ‘11-point non-comparative Juster Scale’ – ranging from non-existent (0), 1 (least) to 10 (most, 100%) as in some other studies (Tull and Hawkins, 1996 and Westbrook, 1980). These dimensions or factors concerning ‘corporate culture’ included - business environment, corporate leaders, core values, technological way of life, democratic norms, human capital, learning and changing organization, global vision, excellence in products and services, corporate image and brand, quality of work life, physical environment, ethical and moral values, nurturing the life blood of business, profitability and financial performance, corporate dynamism and changes, growth and competitiveness, concerns for society, environment and ecology, partners in progress and concerns for other stakeholders etc.

Similarly, for ‘total organizational performance’, a pool of 135 items or aspects related to the topic were taken at the initial stage and grouped under twenty six dimensions or factors and were prepared on an ‘11-point non-comparative Juster Scale’ – ranging from non-existent (0), 1 (least) to 10 (most, 100%) as in some other studies (Tull and Hawkins, 1996 and Westbrook, 1980). And, these dimensions or factors concerning total organizational performance included – a visionary company, top management leadership; quality of management, systems and process; physical manifestations and extravaganzas; quality of products and services, level of technology and Innovations, global operations and competitiveness, dynamism and response to change, human development and quality of work life, knowledge capital and talent pool, customer care and satisfaction, company’s growth performance,
financial performance, market capitalization and value creation, concerns for investors and share holders, concerns for other stakeholders, social responsiveness, environmental consciousness, corporate's ability to take on unforeseen challenges etc.

5.5.3.3 Pre-Testing of the Main Instruments / Questionnaires

The preliminary two sets of instruments so developed on an '11-point non-comparative Juster Scale' (Tull and Hawkins, 1996\(^5\), and Westbrook, 1980\(^6\)), one for 'corporate culture' and the other for 'total organizational performance', were randomly rearranged to design the required 'questionnaire'. In all, 70 IT professionals, IT users, managers, corporate executives, consultants, academicians in management, IT and social science fields, business journalists and some knowledgeable general public residing and working in the National Capital Region of Delhi i.e. Metropolitan City of Delhi, Gurgaon and Noida were personally contacted by the researcher as 'purposive samples' (Tull and Hawkins, 1996, p. 547)\(^4\) and requested to mark their responses on the instruments and were personally interviewed and discussions were held to elicit their views and opinions about both the instruments. These 'purposive samples' were quite representative in nature as a national sample as most of the respondents, professionals and experts hailed from different states and region of India and were residing and working in or around Delhi in different organizations.

Further, after a careful examination of the responses, respondents personal views and opinions about the instruments, and after a due screening with the help of three referees, the lengthy and ambiguous items were reformulated to provide clarity, contextually less relevant items were dropped, dimensions or factors that seemed to be highly related to each other were clubbed together to form a new broader dimension. As a sequel to this the number of dimensions in the first instrument related to 'corporate culture' got reduced to twenty from the initial twenty five and after a through screening and after dropping of some less relevant items, the number of aspects or items came
down to 116 from the initial 131 items. Similarly, the number of aspects or dimensions in the second instrument which was related to ‘total organizational performance’ got reduced to twenty from the initial twenty six and having dropped some less relevant items, the number of aspects or items came down to 119 from the initial 135 items.

And, as already indicated earlier (Gendall, Esslemont and Day, 1991\(^7\), p. 257-263, Tull and Hawkins, 1996\(^8\), p. 374-378 and Westbrook, 1980\(^9\), p. 69.), the gradation on the ‘11-point Juster Scale’, which can easily be converted into percentage scale also, were finalized as : 10 (Certain, practically certain / maximum extent, 100% or, 99 in 100), 9 (Almost sure, 90% or, 9 in 10), 8 (Very probably, 80% or, 8 in 10), 7 (Probable, 70% or, 7 in 10), 6 (Good possibility, 60% or, 6 in 10), 5 (Fairly good possibility, 50% or, 5 in 10), 4 (Fair possibility, 40% or, 4 in 10), 3 (Some possibility, 30% or, 3 in 10), 2 (Slight possibility, 20% or, 2 in 10), 1 (Very slight possibility, 10% or, 1 in 10), and 0 (No chance, almost no chance / absent, 0% or, maximum 1 in 100).

5.5.3.4 Final Testing of the Main Instruments / Questionnaires

A detailed investigation of the revised versions of the two instruments, one pertaining to ‘corporate culture’ and the other on ‘total organizational performance’ were carried out for this purpose. And in this process, each of these two instruments having 20 factors or dimensions on them containing 116 and 119 items respectively clubbed under them included reshuffling of the 20 factors or dimensions on each instrument as a pack of cards to minimize the chances of respondent’s bias as also to facilitate split-half test of reliability.

Again, these two instruments were administered personally by the researcher on a ‘purposive samples’ (Tull and Hawkins, 1996, p. 547)\(^4\) comprising of 75 corporate executives, IT professionals from the selected six IT companies as also from some other IT companies, management and IT academicians, consultants, business journalists and some knowledgeable general public residing and working in the National Capital Territory of Delhi.
which included Metropolitan City of Delhi, Noida and Gurgaon in order to get first hand information / feedback. These 'purposive samples' were quite representative in nature and were almost like an all India sample as majority of the respondents, professionals and experts hailed from different parts of the country and were residing and working in the National Capital Region (NCR) of Delhi. Further, these 75 sets of responses were collected and scrutinized and subjected to further testing.

5.5.3.5 Reliability and Validity of the Main Instruments

Based on the above fresh responses and results, 'Item Analysis Tests' (Guilford, 1971, p. 417-443)\(^{10}\) were carried out at 0.05 level for both the instruments and having passed these tests, 116 items were finally selected for 'corporate culture' under 20 different factors or dimensions; and for 'total organizational performance' 119 items were finally selected under 20 different factors or dimensions for preparation of the final set of the 'Main Questionnaire': Part-I for 'Corporate Culture' and Part-II for 'Total Organizational Performance.'

Further, the response results obtained from 75 respondents for these two sets of instruments were also tested for their reliability by using 'SPSS Statistical Package' installed on a computer. These were checked by conducting further reliability analysis, firstly, at the levels of entire 'corporate culture scale' and 'total organizational performance scale'; and secondly, at the levels of each dimension of both the scales with the help of this 'SPSS Statistical Package' installed on a computer. Besides, 'Excel's Statistical Testing Facilities' installed on a computer was also used for statistical analysis wherever necessary. The reliability of both the scales, taking into account the entire two different scales, separately and independently, were checked and found to be acceptable. Also, the reliability at the level of each dimension of both the scalos were separately checked and found to be acceptable.
In this process while checking the reliability, the results so obtained were found as: the internal consistency of both the scales / instruments were checked separately by applying Cronbach Alpha Coefficient (Guilford, 1971\(^{11}\), p. 385; Tull and Hawkins, 1996\(^{12}\), p. 316; and Saklani, 2003\(^{13}\), p. 486-488) which gave sufficiently high and acceptable results ranging from 0.72 to 0.84. And, checking the reliability of the two instruments separately while using 'Split-half Method' (Guilford, 1971\(^{14}\), p. 364, 385, 460-461; Tull and Hawkins, 1996\(^{12}\), p. 316; and Saklani, 2003\(^{13}\), p. 486-488) involving computer with the help of SPSS statistical package, the 'Guttman Split-half' tests gave results in the range of 0.78 to 0.88; and the use of 'Spearman-Brown Prophecy Formula' (Guilford, 1971\(^{15}\), p. 373-374; and Saklani, 2003\(^{13}\), p. 486-488) yielded results between 0.79 to 0.87, which were found to be positive and of sufficiently high values and acceptable in case of both the instruments.

And both the instruments possessed face validity, content validity as well as sampling and test validity (Tull and Hawkins, 1996\(^{16}\), p. 316-317; and Saklani, 2003\(^{17}\), p. 488-489).

Above different reliability analysis and their results obtained in the case of both the instruments were found to be acceptable, reliable and dependable enough to accept these two instruments to provide basis for constructing the final set of the “Main Questionnaire”. The questionnaire set for this study was finalized as: Questionnaire’s Part-I : “Corporate Culture”, and Questionnaire’s Part-II : “Total Organizational Performance” (exhibited as per ‘Annexure – C’).

5.5.3.6 The Universe for the Study

While deciding about the universe or population for this study which is about ‘corporate culture’ and ‘total organization performance concerning six leading Indian IT companies, the nature of the problems and the width and depth of the requirements for this specific and specialized study were kept in mind. Hence, it was decided with the help of three referees to go for ‘purposive
samples' (Tull and Hawkins, 1996, p. 547) and select the required number of IT professionals from the six selected IT companies as also from other IT companies, corporate executives, IT and management experts, consultants, business reporters / journalists, academicians in IT and management fields, IT users, service providers and some knowledgeable general public from National Capital Region (NCR) of Delhi which comprises of Metropolitan City of Delhi, Gurgaon and Noida as also some known professionals in these categories residing in cities like Bangalore, Mumbai, Chennai, Pune, Ahmedabad and Hyderabad which happen to be IT hubs of India in order to make it more representative. It was also decided to contact such people residing outside National Capital Region of Delhi through e-mails and postal services.

5.5.3.7 Sample Size Determined and Sampling Method Adopted

The present study included in-depth of “Corporate Culture” and “Total Organizational Performance” of six leading Indian IT companies. The ‘Main Questionnaire’ set, divided in two parts and having 20 factors or dimensions on each, contained total 40 factors, dimensions or questions. And the total response cells for 6 IT companies on the ‘questionnaire set’, thus, generated 240 response cells (Tull and Hawkins, 1996, p.567-568)\(^1\).

Considering the limitations of time and resources, and six IT companies to be studied and evaluated on two major parameters independently, it was decided with the help of three referees to arrive at the optimum number of samples (respondents) for each company, which should have satisfied all the statistical requirements for further testing of the responses / results and at the same time, it should have taken care of the limitations of time and resources. Hence, having gone through a series of studies on the topic, it was thought to have a sample size of minimum 30 for each cell which was large enough for ‘t-distribution’ analysis and also taking care of minimum requirements for a ‘normal – distribution’ analysis (Levin, 1989\(^1\), p. 342-348; Tull and Hawkins, 1996\(^2\), 567-568; and Venkatachalam, 1970\(^2\), p. 107-108).
And to take care of a few possible mistakes and ambiguous responses while carrying out the final field survey with the help of the 'questionnaire-set', it was also decided to include 5 extra samples for each company and thereby, making it minimum 35 samples for each of the six selected IT companies. Thus, the final figure of total samples became 210 minimum and sampling method used in the study was 'purposive sampling' (Tull and Hawkins, 1996, p. 547-548), as the present study happens to be a specialized study related to the 'Corporate Culture' and 'Total Organizational Performance' of six selected leading Indian IT companies.

The main reason behind going in for a 'purposive sample' (Tull and Hawkins, 1996, p. 547-548) for this study lies in the fact that the general public was not expected to answer IT companies' 'Corporate Culture' related questions nor their 'Total Organizational Performance' related questions. Also, the IT industry is itself a specialized industry and differs from consumer goods industry or companies about which even general public are found to be aware to some extent about such companies' cultures, management practices and performances through advertisements, media and various other sources, unlike these IT companies operating mainly in the global markets. Hence, the decision for a 'purposive sample' for this study as discussed earlier in this chapter.

5.5.3.8 Weightage Questionnaire

The next logical steps related to the main instruments or questionnaire for the present study which was already finalized and constructed in two parts and passed through various reliability tests and considered valid and acceptable was completed in all respects but for the allotment of individual weightage points to each of the 20 factors or dimensions finalized for each instruments.

Going through the 'Research Model' (exhibited as per 'Annexure-B'), it is evident that part-I of the main questionnaire on 'corporate culture' containing 20 factors or dimensions or questions on it was to be given a total of 100 points, and these 100 points were to be distributed among those 20 factors or questions.
judiciously and optimally based on the relative importance of the individual factors or questions when considered in totality and some valid and acceptable method was to be adopted to achieve this objective.

Similarly, the 20 factors or dimensions or questions appearing on the part – II of the main questionnaire on 'total organizational performance', were also to be allotted a total of 100 points based on the relative importance of each question or factor while considering in totality for this part of the questionnaire.

This was again decided with the help of the three referees to use those two proven instruments with little bit changes for this purpose, such as, replacing the 11-points of the Juster Scale by a simple tabular graphic containing the numbers of grouped items on it in a specific box and making a separate rectangular box for allotment of weightage points for each factor, dimension or question by the respondents and again going in for a 'purposive sample' (Tull and Hawkins, 1996, p. 547-548) to generate a minimum of 30 valid responses which would have satisfied all the statistical testing requirements as discussed earlier in this chapter (Levin, 1989, p. 342-348; Tull and Hawkins, 1996, 567-568; and Venkatachalam, 1970, p. 107-108).

Thereby asking the purposely selected 35 numbers of respondents (keeping 5 extra numbers of respondents to take care of any ambiguous or incomplete response) to go through both the sets of questionnaires, go through all the 20 factors or dimensions appearing on each and after a careful thought, and having gone through the items or aspects which were grouped to form such factors or questions, and based on the relative importance of each individual factor or question in the context of all the 20 factors appearing on each part of instrument or questionnaire, and finally to give group weightage to each factor judiciously and optimally and to distribute 100 points for 20 different factors appearing on each part of the 'weightage questionnaire'.

And, the 'purposive samples' (Tull and Hawkins, 1996, p. 547-548) or respondents required for this purpose were earmarked as 35 knowledgeable
people from different backgrounds such as corporate executives, IT professionals, academicians from social science and management fields, HR consultants, corporate watchers and some senior executives from the six selected IT companies whose offices and development centers were located in the National Capital Region of Delhi (NCR), Gurgaon and Noida.

Having decided the modalities for this part of study, the new printed sets of instruments named as 'Weightage Questionnaire' of which Part – I contained 20 numbers of 'Corporate Culture' factors and Part – II contained again 20 numbers of 'Total Organizational Performance' factors (the 'questionnaire set' exhibited as per 'Annexure-D') were personally administered by the researcher on 35 selected purposive respondents falling in the stated category, and residing and working in the National Capital Region of Delhi, Gurgaon and Noida. These respondents were given adequate time for this exercise, to ponder over the objectives and methodology of this exercise and then come out with their responses i.e. allotting weightage points to each factor or question appearing on each part of the questionnaire by writing them in the appropriate boxes provided on the 'weightage questionnaire' designed for this purpose. The duly completed questionnaires were collected and the respondents' views were also sought.

Finally, these 35 responses in two sets, one for the 'corporate culture' and the other for company's 'total organizational performance', were preliminarily scrutinized, processed and 30 responses completed in all respects were finally selected for further processing and subjected to various statistical tests with the help of ‘SPSS Statistical Package’ installed on a computer and at the same time ‘Excels’ Statistical Testing Facilities’ available on computer were also used wherever necessary to test them.

These statistical tests mainly included, firstly, 'Student t-test' (Levin, 1989[^23], p. 342-346; Tull and Hawkins, 1996[^24], p.634; Venkatachalam, 1970[^25], p. 107-110; and Elhance, 1983[^26], p. 798-803) to check the actual and observed
means and the values of ‘t’ at 0.05 significance levels which were found to be within acceptable limits; secondly, the response data were also subjected to ‘Analysis of Variance’ (ANOVA) : (Levin, 1989\textsuperscript{27}, p. 463-467; Tull and Hawkins, 1996\textsuperscript{28}, p.640-642; Venkatachalam, 1970\textsuperscript{29}, p. 123-125; Elhance, 1983\textsuperscript{30}, p. 824-825; and Kothari, 1994\textsuperscript{31}, p. 302-304) test to check the variances ‘between’ and ‘within’ the set of data / samples, and the values of ‘F-Ratios’(Levin, 1989\textsuperscript{32}, p. 468-473; Tull and Hawkins, 1996\textsuperscript{33}, p.643-644; Venkatachalam, 1970\textsuperscript{34}, p. 127-128; Elhance, 1983\textsuperscript{35}, p. 826-830; and Kothari, 1994\textsuperscript{36}, p. 302, 305) generated while testing the data on computer, were also found to be within acceptable limit at 0.05 level of significance. Some more statistical tests were also carried out on the computer using the above said ‘statistical packages and facilities’ where ever possible and only acceptable results at the 0.05 significance level were finally selected for further use in this study.

Thus, the results of 30 responses completed in all respects and also found acceptable during the various statistical analysis and tests carried out on computer with the help of stated statistical packages and aids, were finally selected and incorporated in the ‘Main Questionnaire / Instrument’ (exhibited as per ‘Annexure – C’) constructed for this study. The final results of the ‘Weightage Questionnaire’ are presented in a tabular form and exhibited as per ‘Annexure – H’ containing ‘Table-III’ where as the detailed results obtained while conducting the survey are presented in tabular forms and exhibited as per ‘Annexure-K.1’ containing ‘Table-VII’ (Corporate Culture) and ‘Annexure-K.2’ containing ‘Table-VIII’ (Total Organisational Performance).

5.5.3.9 Finalization of the Main Questionnaire

A set of two well designed instruments making the ‘Main Questionnaire’ set, Part-I for ‘Corporate Culture’ and Part-II for ‘Total Organizational Performance’ (exhibited as per ‘Annexure-C’), and having undergone two successive testing and reliability analysis viz. ‘Pre-Testing’ and ‘Final Testing’ on the basis of data obtained during field surveys and with the help of various
statistical techniques such as 'Item Analysis' (Guilford, 1971, p. 417-443)\textsuperscript{10} and further testings with the help of 'SPSS Statistical Package' as well as 'Excel's Statistical Testing Facilities' installed on a computer, were duly finalized and accepted as discussed in preceding paragraphs.

And, the individual weightage of each of the 20 factors, dimensions or questions appearing on 'Questionnaire's Part--I and Part--II' were determined in the second round of the study aimed at determination of factor's or question's individual weightage. This part of the study was also completed and the results were checked with the help of 'SPSS Statistical Package' and 'Excel's Statistical Testing Facilities' installed on a computer. Various statistical tools and techniques were used as explained earlier, and the final weightage so obtained were put in a tabular form for further use in course of this study (exhibited as per 'Annexure -- H' containing 'Table-III').

Further, the weightage of individual factors or dimensions or questions obtained as above were incorporated in the initial set of 'Main Questionnaire / Instruments', Part-I for 'Corporate Culture' and Part--II for 'Total Organizational Performance'. And, each of the 20 questions or factors appearing on Part -- I of the 'Main Questionnaire, were having their individual weightage which totalled to be 100. Similarly, on Part -- II of the 'Main Questionnaire', individual weightage to each question / factor were allotted which again totalled to be 100.

And, as already discussed earlier, the gradation on the '11-point non-comparative Juster Scale', ranging from non-existent (0), 1 (least) to 10 (most, 100%) as in some other studies (Tull and Hawkins, 1996\textsuperscript{5}, and Westbrook, 1980\textsuperscript{6}), which was accepted as the 'Mode of Measuring Technique for Part--I and Part--II of the 'Main Questionnaire' were finalized on the basis of various past studies by various researchers (Gendall, Esslemont and Day, 1991\textsuperscript{7}, p. 257-263, Tull and Hawkins, 1996\textsuperscript{5}, p. 374-378 and Westbrook, 1980\textsuperscript{6}, p. 69.). Also, the gradation on the '11-point Juster Scale' was easily be convertible into a percentage scale.
Thus, as discussed earlier in this chapter, the final scale and its gradation were finalized as: 10 (Certain, practically certain / maximum extent, 100% or, 99 in 100), 9 (Almost sure, 90% or, 9 in 10), 8 (Very probably, 80% or, 8 in 10), 7 (Probable, 70% or, 7 in 10), 6 (Good possibility, 60% or, 6 in 10), 5 (Fairly good possibility, 50% or, 5 in 10), 4 (Fair possibility, 40% or, 4 in 10), 3 (Some possibility, 30% or, 3 in 10), 2 (Slight possibility, 20% or, 2 in 10), 1 (Very slight possibility, 10% or, 1 in 10), and 0 (No chance, almost no chance / absent, 0% or, maximum 1 in 100).

Now, the complete set of the ‘Main Questionnaire’ divided into two parts viz. ‘Part-I’ and ‘Part-II’ was ready in all respects. And, printed ‘final sets of main questionnaire’ (exhibited as per ‘Annexure – C’) were administered by the researchers to a total of 210 people (‘purposive sample’) in the National Capital Territory of Delhi and responses were collected as stated earlier and were subjected to further scrutiny, processing and final analysis in order to fulfill the objectives of this study.

5.5.3.10 Company’s Performance Level Classification

The last part of the ‘Research Design’ included preparation of an instrument to arrive at ‘companies’ performance levels classification’ i.e. to classify the performance levels of the six selected leading Indian IT companies in different classes as also to ascertain and categorize their respective performance strengths and establish an hierarchy of these six companies on these counts. The instrument or questionnaire designed for this purpose was simple one. It was aimed at establishing various performance level ranges for classification of the six IT companies under different categories – from excellent, very strong, strong, positive, average and weak as also to decide the acceptable / unacceptable levels of the performance of these companies.

This performance-level classification was to be used at the stage of data processing of the results of the ‘main questionnaire’, to finally put those companies under different categories based on the final outcome of the ‘Main
Questionnaire's, Part-I for company's 'Corporate Culture' and Part-II for their 'Total Organizational Performance' levels. And thus, the final classification of the companies from excellent, very strong, strong, positive, average to weak as also which performance levels were acceptable and which one unacceptable were to be decided. The 'Questionnaire' or 'Instrument' so designed is presented as per 'Annexure-E'.

The printed questionnaires for 'company's performance level classification' were simultaneously administered by the researcher while administrating 'weightage questionnaire' at the second stage of field survey. Again these questionnaire were administered on 35 people falling in the category of corporate executives, IT professionals, management consultants, academicians in the fields of social science and management and also to some knowledgeable general public residing and working in the National Capital Territory of Delhi (NCT) comprising of Metropolitan City of Delhi, Gurgaon and Noida. The responses were collected and the views and opinions of the respondents were also sought.

Out of 35 responses, 30 responses completed in all respects were considered for final processing. The final out come for 'companies performance level classification' was based on the majority of respondents choosing for a particular performance range for a particular classification as also for acceptable levels or the unacceptable ones. It was just based on majority voting for particular performance range for a particular class and the acceptable and unacceptable ones.

No need was felt for any statistical testing for these results. They were just selected on the basis of majority of the people voting for a particular range or class which is itself an accepted method in such cases like that of general election or other local elections in which majority voting decides a winning candidate and is a well accepted norm in the society. The outcome of this survey is cited in the report as 'final scores of company's performance classification'.
questionnaire’ and exhibited as per ‘Annexure–I’. It was used at the final stage of data processing and companies’ performance classification in different categories.

5.5.4 Collection of Primary Data

The primary data were collected by the researcher with the help of printed copies of a specially designed ‘questionnaire’ and having administrated them on a ‘purposive sample’ of 210 people in the National Capital Territory (NCT) of Delhi. It has been described in details in the following paragraphs.

5.5.4.1 Administration of Questionnaire and Collection of Data

As already stated in the beginning while discussing collection of primary data through ‘main questionnaire’ and in the introduction part focusing on the ‘main questionnaire and its administration’, altogether 210 ‘purposes samples’ for this study in the National Capital Territory (NCT) of Delhi, comprising of Metropolitan City of Delhi, Gurgaon and Noida, were administered the printed sets of ‘Main Questionnaire’, Part-I on ‘Corporate Culture’ and Part-II for ‘Total Organizational Performance’, personally by the researcher and due care was taken to ensure that atlas 35 respondents each responded for each of the six IT companies selected for this study.

Thus, the 210 responses were collected by the researcher and scrutinized for their clarity and face validity. Out of 35 responses for each company, around 4-5 responses in each case were found to be incomplete, wrongly marked or wrongly assessed. Hence, 30 responses each completed in all respects and without any ambiguity were selected for each company making it to a total of 180 completed and valid responses. These valid responses were further scrutinized, processed, individual factor or question weightage of each question appearing on both parts of the ‘Main Questionnaire’ were considered along with the marked scores on the ‘11-Point Juster Scale’ by the respondents and their detailed scores were prepared in tabular forms and exhibited as per
Annexure-J.1 containing ‘Tables-V : # 1 to # 20’ on ‘Corporate Culture’ and Annexure-J.2 containing ‘Tables-VI : # 1 to # 20’ on ‘Total Organisational Performance’.

Also, these scores / data were further subjected to various statistical tests and reliability analysis and also checked for dependability of their results as described under the foregoing headings and paragraphs. And, the tested, passed and accepted final data so arrived at after a series of statistical tests were compiled and prepared in tabular forms as ‘final scores of main questionnaire’ which are exhibited as per ‘Annexure-G.1’ containing ‘Table-I’ on ‘Corporate Culture’ and ‘Annexure-G.2’ containing ‘Table-II’ on ‘Total Organisational Performance’. The various statistical tests and reliability analysis applied on the collected and scrutinized data as indicated above are discussed below.

5.5.4.2 Reliability of Data Collected

The reliability of the large amount of data collected in respect of ‘corporate culture’ and ‘total organizational performance’ of the six IT companies as presented vide ‘Annexure-J.1’ and ‘Annexure-J.2’ were checked where ever necessary mainly with the help of ‘SPSS Statistical Package’ and ‘Excel’s Statistical Testing Facilities’ installed on a computer. In principle reliability refers to the accuracy, precision and acceptable limit of variation in data collected (Guilford, 1971, p. 349, 373-388; Tull and Hawkins, 1996, p. 314-316; Kothari, 1994, p. 90-92; and Saklani, 2003, p. 486-487). Going by the nature of data collected, mainly two types of statistical tests were required to test these large amount of data.

Firstly, ‘Student-t-tests’ (Levin, 1989, p. 342-346; Tull and Hawkins, 1996, p.634; Venkatchal, 1970, p. 107-110; and Elhance, 1983, p. 798-803) were carried out to check the actual and observed means and the values of ‘t’ at 0.05 significance level and were found to be within acceptable limits as per the results obtained through the use of these computer based statistical
testing. Secondly, these large amount of response data were also subjected to ‘Analysis of Variance’ (ANOVA) test (Levin, 1989\textsuperscript{27}, p. 463-467; Tull and Hawkins, 1996\textsuperscript{28}, p.640-642; Venkatachalam, 1970\textsuperscript{29}, p. 123-125; Elhance, 1983\textsuperscript{30}, p. 824-825; and Kothari, 1994\textsuperscript{31}, p. 302-304) to check the variances ‘between’ and ‘within’ the set of data / samples and the values of ‘F-Ratios’ (Levin, 1989\textsuperscript{32}, p. 468-473; Tull and Hawkins, 1996\textsuperscript{33}, p.643-644; Venkatachalam, 1970\textsuperscript{34}, p. 127-128; Elhance, 1983\textsuperscript{35}, p. 826-830; and Kothari, 1994\textsuperscript{36}, p. 302, 305) generated while testing the data on computer were also found to be within acceptable limit at 0.05 level of significance.

Also, some more statistical tests applicable to the data obtained were additionally carried out on the computer with the help of above said statistical testing packages / facilities where ever possible and having found the results within acceptable limits while carrying out these statistical tests / analysis, the tested, passed and finally accepted data were compiled in tabular forms which are exhibited vide ‘Annexure-G.1’ containing ‘Table-I’ on ‘Corporate Culture’ and ‘Annexure-G.2’ containing ‘Table-II’ on ‘Total Organizational Performance’ which are to be further used for data interpretation and discussions on results as also using them to establish correlation between ‘corporate culture data’ and ‘total organization performance data’ as also to test and verify the various ‘Hypothesis’ presented under the same heading in the beginning of this chapter.

5.5.4.3 Dependability of Results

The dependability of results and validity of data obtained refers to (Guilford, 1971\textsuperscript{41}, p. 354, 373-388; Tull and Hawkins, 1996\textsuperscript{42}, p. 316-317; Kothari, 1994\textsuperscript{43}, p. 90-91; and Saklani, 2003\textsuperscript{44}, p. 488-489) the extent these results so obtained were reflective of the real life situations and in the present context, their ability to measure various attributes related to the topic and represent the depth and width and characteristics of ‘corporate cultures’ of each of the six selected IT
company separately and measure the levels of their ‘total organizational performances’ independently.

It was established at three levels: firstly, the instruments used for this study had passed all the reliability and validity tests; secondly, the obtained data/responses during field surveys also successfully passed all the required statistical tests; and finally, the final results so obtained about ‘corporate cultures’ and ‘total organizational performance’ results also tally with the various data and their respective rankings and comparisons etc. on these six IT companies’ ‘corporate cultures’ and their ‘organisational and financial performances’ collected as secondary data during the course of this study. Hence, the results obtained in this manner were quite dependable and tally with the actual or real life situations.

5.5.5 Limitations of the Study

All out efforts were made during the study to give the best in the given circumstances. However, in spite of the best efforts, some limitations remained due to the factors beyond control, such as, limitations of time and financial resources, inadequate infrastructure and absence of any institutional support. Some of such limitations are cited as below:

5.5.5.1 The present study was carried out on the basis of 116 items grouped under 20 factors or dimensions for ‘Corporate Culture’, and 119 items again grouped under 20 factors or dimensions for ‘Total Organizational Performance’. A more elaborate study on the topic might have included still more number of items grouped under more factors or dimensions in both the cases, which probably might have resulted into giving still a better picture and analysis of ‘Corporate Culture’ and ‘Total organizational Performance’ of the six IT companies under present study.

5.5.5.2 This study included detailed study and analysis of only six leading Indian IT companies having global operations and have also emerged as mega IT companies and like Indian Multinational Corporations (MNCs). They might not
now possess the general characteristics of what hundreds of medium-size Indian IT companies and thousands of small size such Indian IT companies still possess. A series of such studies conducted on all the three different categories of companies, such as, 'Mega IT Corporations', 'Medium IT Companies' and 'Small-size IT Companies' with more number of companies in each category would certainly have wider coverage in width and depth and might still give better and finer results.

5.5.5.3 And, on the history part of Indian IT Industry, a series of studies and more work in width and depth are required to chronicle the history of Indian IT industry from its origin, growth, development and up to the present day, to present a comprehensive view of Indian IT Industry and its contributions towards the development of world IT Industry.

5.5.5.4 Also, a comprehensive chronicle of Indians working in the US, Canada, Europe and elsewhere in the world in IT Industry, their contributions towards world IT Industry as also their impacts on and contributions towards Indian IT industry would certainly give an elaborate and finer picture of the same than what the researcher have been able to gather and present in the present study due to the various constraints.

5.5.5.5 There is a need to give more coverage and higher weightage to the 'other stakeholders', such as, business associates, service providers, suppliers, environment, ecology, community, society, etc. and companies to adhere more to the concept of 'partners in progress' (other than the usual stakeholders considered by the companies, such as, customers, shareholders and employees) while considering and implementing the concept of 'Total Organizational Performance' (T.O.P.) to give it a wider perspective.

5.5.5.6 The new concept of 'Total Organizational Performance' (T.O.P.) needs to be tested on more number of companies covering more types of industries to test it comprehensively and understand its real worth. It has got all the features and possibilities to become universally acceptable management techniques like
TQM, TPM and Quality Circles and the likes and probably with much wider applications and universal appeal.

5.5.5.7 The study was mainly carried out in the National Capital Territory of Delhi comprising the Metropolitan City of Delhi, Noida and Gurgaon. Although the 'purposive samples' selected for this study hailed from all parts of the country and were large in numbers and may be treated as fairly representative. But a nation-wide survey and study on this topic with much larger samples might still give better results and a finer picture of the solutions so obtained in this study.

5.5.6 **Scope of Further Study**

The limitations of the study as cited above, itself speak a lot of the scope of further study. However, to be specific on this count, the scope of further study exists as below:

5.5.6.1 More detailed and specific studies in the context of 'Corporate Culture' and 'Total Organizational Performance' (T.O.P.) may be carried out for more number of companies and all types of industries in Indian environment with much wider geographical coverage in order to strengthen the 'Hypothesis' and further verify the outcomes of this study.

5.5.6.2 On similar pattern, more detailed study on Indian IT industry covering more IT companies of different sizes and located in different parts of the country should also be carried out with more focus on their 'corporate culture' and 'total organizational performance' and establishing correlation between these two and to further verify the 'Hypothesis' and the outcomes of this study.

5.5.6.3 In fact, a series of specific studies on Indian IT industries should be carried out separately in three different categories, such as, 'Mega IT Corporations', 'Medium-size IT Companies' and 'Small IT Firms' with major focus on their 'Corporate Culture' and 'Total Organizational Performance' (T.O.P.) and establishing correlations between these two for all three categories of companies and making comparison among themselves and establishing correlations.
between them on various counts and wherever possible in order to get elaborate and finer pictures of the same.

5.5.6.4 The new concept of 'Total Organizational Performance' (T.O.P.) may be tested and verified while carrying out above cited comprehensive studies.

5.5.6.5 A detailed history of Indian IT Industry from its origin, growth, development and up to the present day may be chronicled to present the history of Indian IT industry in a comprehensive way.

5.5.6.6 The contributions of Indians working in IT industry worldwide, especially in the U.S., Canada, Europe, Japan and other parts of the world as also their impacts on and contributions towards Indian IT industry should be chronicled in details.

5.5.6.7 Last but not the least, the further studies in these areas as suggested above, should be carried out on national or country wide basis to make such studies more representative.

5.5.7 Difficulties Faced by the Researcher

The difficulties faced by the researcher during this study were many and on different counts. Some of them are presented as below:

5.5.7.1 The available literature on 'Corporate Culture' and 'Corporate or Organizational Performance' were mainly based on studies of various U.S. based corporations and some European companies and that too about the general or conventional categories of Industries/companies and none of them were related to IT Industry in particular.

5.5.7.2 On 'Organizational or Corporate Performance' count, most of the above studies mainly represented 'financial performance' of the companies and nothing more. Only few researchers/writers talked about social performance or environmental responsiveness. None talked about the 'Total Organizational Performance' (T.O.P.) and very few touched upon the concerns for other
stakeholders. Hence, the paucity of relevant literature on these two related topics in the context of IT companies / industry proved to be the big impediment in carrying out the study.

5.5.7.3 As the concept of ‘Total Organizational Performance’ (T.O.P.) is new one and which is going to be one of the most important feature or contribution of this study, this new management concept was developed by the researcher and tested and verified with the help of primary data generated during the study. Non availability of past research work or data concerning this new concept was also a major constraint as well as an opportunity for this study to find out some thing new and establish the same for the benefit of companies, industries and management as a whole.

5.5.7.4 Also, as the general case with developing countries as also for India, no basic research work in India on the topic of ‘Corporate Culture’ or ‘Organizational Performance’ related to IT industry in India was traceable anywhere. Some literature / books of Indian origin available on ‘Corporate Culture’ and ‘Organizational Performance’ related to general category of companies / industry were found grossly insufficient. This was one if the major constraints of the study.

5.5.7.5 And finally, the limitations of time and financial resources as well as inadequate infrastructure and absence of any official or institutional support were also the major constraints encountered during the course of this study.

5.5.7.6 Thus, due to above mentioned limitations of time and financial constraints, the study was mainly conducted in and around Delhi. No specific trips of outside places could be undertaken to cover wider geographical regions for the purpose of this research study. However, all out efforts were made by the researcher to make the study more representative in nature by including more and more people / respondents from other parts of the country as part of the ‘purposive sample’, who were working and residing in the National Capital Territory of Delhi.
5.6 References: (Chapter-V)


