CHAPTER – 3
RESEARCH METHODOLOGY
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3.1. RESEARCH GAP:

After review of literature it is noted that there are a few studies relating to HR Practices in IT Companies and more specifically there is a shortage of empirical research in the area of Human resources practices in CMM level 5 certified companies in IT Industry. The study tries to fill the research gap in this direction. More ever, the study use cross-case methodology for comparing specific Human Resource Practices in CMM level 5 certified companies in IT Industry which represent the true state of affairs in Indian IT Companies.

3.1.1. NEED FOR THE STUDY:

It’s no secret that business success today revolves largely around people, not capital. This is of great significance especially in ‘people businesses’ like software companies with relatively high people costs and low capital costs. According to Barber & Strack, (2005) people businesses are those companies with relatively high employee costs, a high ratio of employee costs to capital costs, and limited spending on activities, such as R&D aimed at generating future revenue. The question of where and how value is being created or squandered could be identified in people-intensive businesses by looking into metrics of productivity of people rather than of capital.

The critical resources are employees a software company hires, motivates and retains. While occasionally, the value employees create in some software companies does take the form of intangible assets like intellectual property, brands, and the like, most employees in people businesses like IT services and products concentrate more on creating short-term value directly for customers, month for month and year for year, without the intermediary step of creating an intangible asset.

The distinct but generally unappreciated economics of people-intensive businesses like software call not only for different metrics but also for different management practices. Even slight changes in employee productivity in software companies have a significant impact on shareholder returns. In such cases “human resource
management” is no longer a support function but a core process for line managers. It goes without saying that managing people is a key task for any company. But in a people business, this task becomes central to success because employees represent both the major cost and the major driver of value creation. People management measures that lead to even small changes in operational performance can have a major impact on returns (Barber & Strack, 2005).

Given the high financial stakes, people management needs to be a core operational process and not solely a support function run by the Human Resource department. Line managers have a vital role to play in improving employee productivity, in terms of both business issues (such as whether to concentrate on large or small accounts) and management issues (such as how to create an organization and work environment that foster productive output). If success in a capital-intensive business comes primarily from making the right investment decisions, success in a people-intensive business comes from hiring the right people and putting in place processes and an organization that makes them productive (Barber & Strack, 2005). Managers also need to ensure that employees' interests are aligned with a company's business objectives and their execution. It is crucial to keep employees engaged and productive.

The existing business environment requires companies as well as their HR teams to think out-of-the box, and come up with innovative approaches to survive the downturn and hold employees together. Innovative approaches would motivate the employees in software companies to utilize their set of skills and knowledge through discretionary effort realizing firm’s business strategy. This approach to human resource management is likely to contribute to improved economic performance of the firm. Innovative arrangements also have the potential to increase employee morale, thereby improving performance through reduction in grievances and through greater effort and diligence. Research have shown that HRM innovations not only result in tangible organisational results but also assist organizations in developing innovative solutions as the need arises.

The people factor has been very important for the growth of the Indian software services industry, because the industry works on the human resources (HR)
augmentation mode (Upadhya & Vasavi, 2006). This means that the revenue of an organization is directly related the number of projects executed and number of people working on a project (Tschang, 2001). In other words, the number of software workers is an indication of the revenue of the organization. Human Resource is life and blood of software companies as skillful talents are the source for competitive advantage in these industries. The dynamic nature of the software industry due to the innovative methods of work culture like virtual office and virtual migration shows the need for different HR practices to this fastest growing industry. The characteristic of work is also very different from other sectors as there is high attrition rate, lack of job satisfaction, job hopping of the employees, flexibilization and individualization are common phenomenon in the industry which is major concern for the software companies. So companies are using different strategies like direct and indirect controls to manage the issues faced by the organization (Upadhya, 2009).

This study tries to focus on the HRM practices in software industry in Hyderabad. This implies an inquiry as to how the management ensures the availability of the right kind of people in right quantum at the right place, at the right time, doing the right things for the achievement of the Organizational objectives.

3.2. IMPORTANCE AND SIGNIFICANCE OF THE STUDY:

The Information system has become a wide and diverse discipline and Information Technology has moved from back office, closed system to end – user controlled open system. The competitive software industry has become an increasingly important part of advanced industrial economies. According to NASSCOM (2007) India is set to face a talent crunch of half a million IT professionals in the next few years.

Despite the global economic slowdown of 2007-08, the Indian IT software and services industry is maintaining a steady phase of growth. Software development activity is not confined to a few cities in India. In fact, software development centers such as Bengaluru, Hyderabad, Mumbai, Pune, Chennai, Delhi-Noida, Gurgaon, Vadodara, Bhubaneswar, Goa, Chandigarh, and Thiruvananthapuram are also developing quickly.

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According to NASSCOM (2007), the biggest hurdle to the growth of the IT industry is talent scarcity. Successful organizations in the 21st century will be those that attract, retain, develop and reward individuals who have skills and knowledge to creatively approach customers, stakeholders and take advantage of the opportunities that offer in a globalized market. An organization can reach its maximum potential, if each employee develops and achieve goals that support personal and organizational success.

The practice of HR in a knowledge driven era has assumed greater significance since the companies are looking workers today and therefore, management of people has become extremely important. In a tight labor market, attracting and retaining top talent requires a thoroughly thought out strategy that is tailored to the individual characteristics and needs of the company. The main goal is to hire the right type of people at the right place at the right time.

Beyond recruiting and retention activity however, employees in particular see work life as a key factor when deciding to join and or stay with an organization. Another major problem is high attrition rates and growth aspirations of the work force. High attrition represents significant costs to most of the organizations. Managing attrition is not just a simple thing in software companies. It is not only a part of cost of doing business alone,

### 3.3. OBJECTIVES OF THE STUDY:

The primary objective is to study Human Resource Practices like **Recruitment and Selection, Training & Development, Career Planning Development, Performance Appraisal and Employee Retention** in CMM Level 5 certified IT Companies besides there are secondary objectives are also there

1. To study the HRM practices in selected IT companies.
2. To study the attitudes and perception of Employees related to HR practices in selected IT Companies.
4. To compare the HR practices of selected IT Companies with the help of Cross-Case Matrix.

3.4. HYPOTHESIS OF THE STUDY:

Hypotheses are testable propositions about the relationship between two or more concepts or variables from theory (Saunders, Lewis, & Thornhill, 2007). The use of hypotheses in most research, including this study, is still regarded by researchers as an important tool of scientific research for identifying certain relationships between variables in a theoretical model (Kerlinger, 1986).

In this study, the hypotheses were designed in a traditional style. According to Creswell (2003), the traditional style of constructing hypotheses is by null/alternative hypotheses. Null hypotheses make a prediction that there is no relationship between variables and alternative hypotheses predict outcomes for the relationships between those variables. If the null hypothesis (H0) is rejected, the alternative hypothesis (H1) is supported (Sekaran, 1992). Thus, all hypotheses used in this study were presented in the form of null hypotheses.

Based on the literature review and the findings from the qualitative study, the present study examines the following hypothesis:

H1: There is no statistically significant difference among selected IT companies with regard Recruitment and Selection process.

H2: There is no significant difference among selected IT companies with regard Training and Development Strategies.

H3: There is no significant difference among selected IT companies with regard Career Planning Development.

H4: There is no significant difference among selected IT companies with regard Performance Appraisal System.

H5: There is no significant difference among selected IT companies with regard Employee Retention Strategies.
Based on Null Hypothesis Five (H5) the following sub-hypothesis were formulated

H5.1: Salary increment affects the Employee Retention.

H5.2: Location preferences affects the employee retention.

H5.3: Salary structure of the company affects the employee retention.

H5.4: Safety and security affects the employee retention.

H5.5: Performance based growth affects the employee retention.

H5.6: Peer Relationship affects the employee retention.

H5.7: Rewards and recognition affects the employee retention.

H5.8: Promotion affects the employee retention.

H5.9: Change of role and responsibilities affects the employee retention.

H5.10: Job rotation affects the employee retention.

H6: There is no significant effect of Recruitment and Selection process on organizational Commitment.

H7: There is no significant effect of Training and Development Strategies on organizational Commitment.

H8: There is no significant effect of Career Planning Development on organizational Commitment.

H9: There is no significant effect of Performance Appraisal System on organizational Commitment.

H10: There is no significant effect of Employee Retention Strategies on organizational Commitment.
3.5. SCOPE OF THE STUDY:

The information system has become a wide and diverse discipline and Information Technology has moved from the back office, closed system end – user controlled open system. The competitive software industry has become an increasingly important part of advanced industrial economies. According to NASSCOM (2007) India is set to face a talent crunch of half a million IT professionals in the next few years.

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The practice of HR in a knowledge driven era has assumed greater significance since the companies are looking workers today and therefore, management of people has become extremely important. In a tight labor market, attracting and retaining top talent requires a thoroughly thought out strategy that is tailored to the individual characteristics and needs of the company. The main goal is to hire the right type of people at the right place at the right time.

Beyond recruiting and retention activity however, employees in particular see work life as a key factor when deciding to join and or stay with an organization. Another major problem is high attrition rates and growth aspirations of the work force. High attrition represents significant costs to most of the organizations. Managing attrition is not just a simple thing in software companies. It is not only a part of cost of doing
business alone, but is the route to their survival itself. Therefore, it is an area where a well thought out HRM practices have to be in place in the software companies to take care of the complex HR issues.

This study is focused mainly in the southern part of India, because the software industry is concentrated more in this region. Gachibowli in Hyderabad city is selected for the study, as this the major hub for software solutions in the southern part of India. The study is focused on only the certified companies, since the study of uncertified companies or the unorganized sector, may not project the true picture of the industry. So, only CMM Level 5 certifies companies are selected for the research. The study focuses on Human Resource Management Practices.

The scope of the study is confined to the following Human Resource Practices only.

1. Recruitment and Selection process
2. Training and Development Strategies
3. Career Planning Development
5. Employee Retention Strategies
6. Recruitment and Selection process

3.6. PERIOD OF THE STUDY:

The period of the study of this research program is between 2008 to 20012, first two years was spent for the identification of the problem and secondary data collection. Remaining years’ time is worked out on collection of primary data, case development, cross-case analysis and presentation of employee opinion.

3.7. RESEARCH DESIGN AND METHOD:

Research design provides the basic direction for carrying out a research project so as to obtain answers to research questions (Cooper & Schindler, 2003). According to Hair, Babin, Money and Samouel(2003),” the researcher should choose a design that will (1) provide relevant information on the research questions and (2) will do the job most efficiently. The present study is a descriptive design
3.7.1. CROSS-CASE ANALYSIS

As this study is conducted on CMM Level 5 certified Companies and is multi–company research work, the ‘Cross-case Analysis’ method is found more suitable to find the facts (Four CMM Level 5 Companies are taken for the study). In the first stage cases are developed, with the help of the data from interview and secondary data schedule of various companies. Later the cases are analyzed through ‘Cross – Case Analysis’ by developing Cross Case Matrices. Finally the employee opinions are taken to arrive at conclusions and suggestions.

3.7.2. IT COMPANIES GRADING PROCEDURE:

The Certification process for IT companies in India for awarding grades is based on the Capability Maturity Model (CMM). The quality of process is the main testing area for awarding various CMM Level certifications. The other certification is ISO 9001 apart from Trillium, SPICE, and BOOTSTRAP. But the CMM and ISO 9001 are the most widely used models. ISO 9001 is a general standard for providing services. ISO 9001 has 20 clauses that an organization has to satisfy to qualify as ISO 9001 certifies. This model is general and considers the working of the entire organization not just the software projects. The CMM for IT companies is a framework that focuses in software development. It was developed, by observing the best practices in software organizations. Hence, it reflects the collective process experience and expectations of many companies. This model can be used to both evaluate the software process of an organization and plan process improvement. The base for a sample selection of IT companies in this research is CMM Level certifications.

3.7.3. MATURITY LEVELS IN CMM MODEL:

A capability level is a well-defined evolutionary plateau describing the organization's capability relative to a process area. A capability level consists of related specific and generic practices for a process area that can improve the organization's processes associated with that process area. Each level is a layer in the foundation for continuous process improvement. Thus, capability levels are cumulative, i.e., a higher capability level includes the attributes of the lower levels.
In CMMI models with a continuous representation, there are five capability levels designated by the numbers 0 through 5.

1 - Performed
2 - Managed
3 - Defined
4 - Quantitatively Managed
5 – Optimizing

A short description of each capability level is as follows:

**Capability Level 1: Performed**

A Capability Level 1 process is a process that is expected to perform all of the Capability Level 1 specific and generic practices. Performance may not be stable and may not meet specific objectives such as quality, cost, and schedule, but useful work can be done. This is only a start, or baby-step, in process improvement. It means that you are doing something but you cannot prove that it is really working for you.

**Capability Level 2: Managed**

A managed process is planned, performed, monitored, and controlled for individual projects, groups, or stand-alone processes to achieve a given purpose. Managing the process achieves both the module objectives for the process as well as other objectives, such as cost, schedule, and quality. As the title of this level indicates, you are actively managing the way things are done in your organization. You have some metrics that are consistently collected and applied to your management approach.

Remember: metrics are collected and used at all levels of the CMMI, in both the staged and continuous representations. It is a bitter fallacy to think that an organization can wait until Capability Level 4 to use the metrics.

**Capability Level 3: Defined**

A capability level 3 processes are characterized as a "defined process." A defined process is a managed process that is tailored from the organization's set of standard processes according to the organization's tailoring guidelines, and contributes
work products, measures, and other process-improvement information to the organizational process assets.

**Capability Level 4: Quantitatively Managed**

A capability level 4 processes are characterized as a "quantitatively managed process." A quantitatively managed process is a defined process that is controlled using statistical and other quantitative techniques. Quantitative objectives for quality and process performance are established and used as criteria in managing the process. Quality and process performance is understood in statistical terms and is managed throughout the life of the process.

**Capability Level 5: Optimizing**

An optimizing process is a quantitatively managed process that is improved, based on an understanding of the common causes of process variation inherent in the process. It focuses on continually improving process performance through both incremental and innovative improvements. Both the defined processes and the organization's set of standard processes are targets of improvement activities.

Capability Level 4 focuses on establishing baselines, models, and measurements for process performance. Capability Level 5 focuses on studying performance results across the organization or an entire enterprise, finding common causes of problems in how the work is done (the processes used), and fixing the problems in the process. The fix would include updating the process documentation and training involved where the errors were injected.
Figure 3.1. CMMI Staged Representation-Maturity Levels

3.8. POPULATION:

The target population in this study is CMM Level 5 certified Companies and is multi–company research work. The selected CMM Level 5 certified IT Companies are Tata Consultancy Services Ltd, Infosys Technologies Ltd, Wipro Technologies Ltd and HCL Technologies Ltd, which are located in Gachibowli (IT SEZ)Hyderabad. The total employees in each unit of these companies are as follows

Table: 3.1. Total population of the study

<table>
<thead>
<tr>
<th>S.No</th>
<th>Name of the Company</th>
<th>No.Of.Employees</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>TCS</td>
<td>1140</td>
</tr>
<tr>
<td>2</td>
<td>Infosys</td>
<td>930</td>
</tr>
<tr>
<td>3</td>
<td>Wipro</td>
<td>845</td>
</tr>
<tr>
<td>4</td>
<td>HCL</td>
<td>815</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>3730</td>
</tr>
</tbody>
</table>

Source: Field Information.
3.9. SAMPLING METHOD AND SAMPLE SIZE:

According to Cooper and Schindler (2003), “the basic idea of sampling is by selecting some elements in a population, we may draw conclusions about the entire population.” Furthermore, Bless and Higson-Smith (1995) highlight the main advantages of sampling:

- Gathering data on a sample is less time-consuming, especially when populations may be spread over large geographical areas.
- It is less costly.
- Sampling is a practical way of collecting data when the population is extremely large.

The sampling method that was considered appropriate for the present study was convenient sampling. Four Companies had been selected from the List of CMM Level 5 Companies. For the employee opinion 150 respondents are chosen from each company, so the total number of employee respondents is 600.

The sampling method that was considered appropriate for the present study was convenient sampling. Four Companies had been selected from the List of CMM Level 5 Companies. For the present study the researcher had taken 600 samples which is 16% of the total population (i.e, 600 out of 3730), and it is a multi company research work, the researcher had divided these 600 samples in to 4 equal parts in order to give equal weightage for all the Four companies.. So, for the employee opinion 150 respondents are chosen from each company unit located at Gachibowli (IT SEZ) Hyderabad.

And these 150 sample respondents from each company are once again divided based on the Job designation of the employees, the below table shows the sample as per the employee designation in respective companies.

Table: 3.2. Details of the sample as per designation.

<table>
<thead>
<tr>
<th>S.No</th>
<th>Company</th>
<th>S/W Trainees</th>
<th>Team Leaders</th>
<th>Project Leaders</th>
<th>Consultants</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>TCS</td>
<td>75(50% of 150)</td>
<td>45(30% of 150)</td>
<td>21(14% of 150)</td>
<td>9(6% of 150)</td>
<td>150</td>
</tr>
<tr>
<td>2</td>
<td>Infosys</td>
<td>75(50% of 150)</td>
<td>45(30% of 150)</td>
<td>21(14% of 150)</td>
<td>9(6% of 150)</td>
<td>150</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Wipro</td>
<td>75 (50% of 150)</td>
<td>45 (30% of 150)</td>
<td>21 (14% of 150)</td>
<td>9 (6% of 150)</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>HCL</td>
<td>75 (50% of 150)</td>
<td>45 (30% of 150)</td>
<td>21 (14% of 150)</td>
<td>9 (6% of 150)</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>300 (50% of 600)</td>
<td>180 (30% of 600)</td>
<td>84 (14% of 600)</td>
<td>36 (6% of 600)</td>
<td></td>
</tr>
</tbody>
</table>

Source: Field Information

3.10. SOURCES OF DATA:

The study is mainly based on primary data. The secondary data is used to supplement the primary data. The main source of primary data is collected through Interviewing HR personnel with the help of interview schedules and Collection of data from employees through opinions schedules. The Secondary data is collected through three approaches: A separate secondary data is administered to gather company related data from all four companies, referred journals, magazines, newspapers and textbooks and Internet is also used to collect secondary data from various websites.

3.11. TOOLS OF DATA COLLECTION:

For this purpose of collecting primary data from the sample respondents, a well-structured questionnaire has been designed and administered on sample respondents (see Appendix). Questionnaires have been widely used for data collection, especially in social science research (Easterby-Smith, Thorpe, & Lowe, 2002). Sekaran (2000) defined the questionnaire as a pre-formulated written set of questions designed by the researcher to which participants’ record their answers, and referred to it as “an efficient data collection mechanism since the researcher knows exactly what is required and how to measure the variables of interest”. According to Oppenheim (1992), a questionnaire is particularly suited to obtaining information about what a person knows, believes or expects, feels or wants, intends, does or has done in a particular context. Put simply, a questionnaire is a list of closed or/and open-ended questions and is usually administered on paper in a structured or semi-structured format.

For purposes of the present study, questionnaires were considered appropriate data gathering instruments. According to Weiers (1988) there are specific benefits to utilising questionnaires:
1. The cost per questionnaire is relatively low.

2. Structured information in the questionnaire makes analysing questionnaires relatively straightforward.

3. Questionnaires give respondents ample time to formulate accurate responses.

The main problem associated with questionnaires relates to the issue of non-response on certain items in the questionnaire. In addition to this, participants could fail to return questionnaires which make it difficult to generalise from a sample to a population. Hussey and Hussey (1997) advance some methods to overcome this: (1) sending a follow-up letter to those who failed to respond to the first enquiry and (2) comparing non-response items to other similar answers within the questionnaires.

In this study there are two set of schedules are used one for collecting information about Human resource Practices is administered to Head of HR and HR Personnel and second schedule is used to collected employees perception and opinion on HR Practices prevailed in the company (see Appendix).

The questionnaire that was used for the present study is consisted of five parts,

Part-I will consist of questions relating to Recruitment and Selection process

Part-II related to the statements connected with Training and Development Strategies

Part-III contains statements relating Career Planning Development

Part-IV related to the statements concerning Performance Appraisal System

Part-V statements relating to Employee Retention Factors and Employee Retention

Part-VI statement relating to measuring Organizational Commitment

The questionnaire used a five point scale and each statement the respondents were asked to assign rating on the five point scale as felt by them at the time answering. The rating pattern is as follows.
Table: 3.3: Rating of response:

<table>
<thead>
<tr>
<th>SL.No</th>
<th>Choice of Response</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Strongly Agree</td>
<td>5</td>
</tr>
<tr>
<td>2</td>
<td>Agree</td>
<td>4</td>
</tr>
<tr>
<td>3</td>
<td>Undecided</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>Disagree</td>
<td>2</td>
</tr>
<tr>
<td>5</td>
<td>Strongly Disagree</td>
<td>1</td>
</tr>
</tbody>
</table>

For each statement, sample respondents have given ranking as desired by them. After meticulous observation the number of respondents who ranked a particular point in the five point scale has been found out subsequently, the number of respondents is multiplied with the corresponding rating as assigned by them. This is followed by a division with number of respondents who who fall in that category. For example, of 600 sample respondents with regard to statement relating “Selection process is the best among the industry”, it is assumed that 475 of them felt ‘Strongly Agree’. 103 felt ‘Agree’, 9 respondents felt ‘Undecided’, 7 felt ‘Dis Agree’ and remaining 6 felt ‘Strongly Disagree’ with the statement. These numbers are multiplied with their corresponding weight viz., 5,4,3,2,1. Then it is divided by total number of sample respondents who constitute 600. In short the calculation in simple terms can be expressed as follows.

\[
\frac{475 \times 5 + 103 \times 4 + 9 \times 3 + 7 \times 2 + 6 \times 1}{600}
\]

\[
\frac{2375 + 412 + 27 + 14 + 6}{600} = 4.72
\]

The above weighted average is calculated for all the statements used in the questionnaire for measuring Human Resource Management Practices, employee retention factors, employee retention and organisational commitment and the average weight are used for testing hypothesis and for correlation and regression analysis.
3.11.1 .RELIABILITY OF THE INSTRUMENT:

Reliability is considered an important aspect in any research method. According to Hinkin(1995), the evaluation of reliability could be considered part of the testing stage of the newly-developed measure. Field (2005) defines reliability as “the ability of a measure to produce consistent results when the same entities are measured under the same conditions”. Sekaran(1992) maintains that the reliability of a measure indicates the stability and consistency with which the instrument measures the concept and helps to assess the usefulness of a measure.

According to Sekaran(2000), the reliability of a measure indicates the extent to which the measure is without bias (error-free) and hence offers consistent measurement across time and across the various items in the instrument. Besides, the reliability of a measure indicates the stability and consistency with which the instrument measures the concept and helps to assess the ‘goodness’ of a measure.

There are many ways in which reliability can be ensured, such as the test-retest method and Cronbach’s alpha coefficient. Since it is difficult to arrange for people to be tested on the same question on two occasions to assess reliability, an alternative method is to look at the consistency of a person’s response to an item at the same point in time and the degree of agreement for which the measurement is obtained (DeVaus, 2003). This approach provides a measurement of the overall reliability of the scale. According to Frankfort-Nachmias and Nachmias(1996), the most appropriate statistical figure for interpreting the reliability of a scale is Cronbach’s alpha. Similarly, Churchill (1979) and DeVellis(2003) argue that the measure of internal consistency, the Cronbach’s alpha, should be the first measure to be calculated to assess the quality of instruments.

Cronbach’s alpha ranges between zero (0) and one (1); the higher the value, the more reliable the scale. However, researchers argue that there are no hard and fast rules for assessing the magnitude of reliability coefficients. For example, Nannally(1978) and DeVellis (2003) recommend a minimum level of 0.7 as an acceptable standard for demonstrating internal consistency. Although Van de Venn and Ferry (1980) indicate that acceptable values may be as low as 0.4 for broadly-defined constructs, many researchers considered this value as too low. For example, researchers like Flynn et al. (1994), and Malhotra and Grover (1998) state that a value of 0.6 is often used as a minimum boundary. Kline (2000) asserts that although
the generally accepted value of 0.8 is appropriate for cognitive tests, such as intelligence tests or for ability tests, a cut-off point of 0.7 is more suitable. He goes on to say that, realistically, when dealing with psychological constructs, values below even 0.7 can be expected because of the diversity of the constructs being measured. Sekaran(2000) also clearly mentioned that a reliability factor less than 0.6 was considered poor, in the range of 0.6 to 0.8 acceptable and 0.8 and above was considered good.

In this study, the coefficient alpha analysis is performed on each subscale and on the entire scale. The coefficient alpha values are shown in the table no 1. The coefficient alpha for Recruitment and Selection process is 0.865, Training and Development Strategies is 0.919, Career Planning Development is 0.914, Performance Appraisal System is 0.911, Employee Retention Factor is 0.899, Employee Retention is 0.85 and Organizational Commitment is 0.789.

Table 3.4. Cronbach’s Alpha Coefficient for Constructs

<table>
<thead>
<tr>
<th>S.no</th>
<th>Constructs</th>
<th>No.of items</th>
<th>Cronbach Alpha (α)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Human Resource Practices</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.1</td>
<td>Recruitment and Selection process</td>
<td>5</td>
<td>0.865</td>
</tr>
<tr>
<td>1.2</td>
<td>Training and Development Strategies</td>
<td>10</td>
<td>0.919</td>
</tr>
<tr>
<td>1.3</td>
<td>Career Planning Development</td>
<td>5</td>
<td>0.914</td>
</tr>
<tr>
<td>1.4</td>
<td>Performance Appraisal System</td>
<td>8</td>
<td>0.91</td>
</tr>
<tr>
<td>1.5</td>
<td>Employee Retention Factors</td>
<td>10</td>
<td>0.899</td>
</tr>
<tr>
<td>1.6</td>
<td>Employee Retention</td>
<td>4</td>
<td>0.85</td>
</tr>
<tr>
<td>1.7</td>
<td>Organizational Commitment</td>
<td>6</td>
<td>0.789</td>
</tr>
</tbody>
</table>

Source: Field information

3.11.2. VARIABLES IN THE STUDY:

In this study the following dependent and independent variables were included

Dependent variable: Employee Retention and Organizational Commitment
Independent variables: the independent variables in this study are Recruitment and Selection process, Training and Development Strategies, Career Planning Development, Performance Appraisal System.

3.11.3. TOOLS OF ANALYSIS:

After collecting information from the sample respondents, the data were analyzed according to the objectives and hypothesis stated. In this study data analysis is carried out with the help of Statistical Package for Social Sciences (SPSS 17 version). The statistical analysis used in this study can be categorized into two groups; descriptive and inferential statistics. The following paragraph gives a brief description of statistical tools and technique which used in the study.

3.11.3.1. DESCRIPTIVE STATISTICS:

Descriptive statistics provide a statistical summary of the data which has been collected. De Vos (1998) states that “the purpose of descriptive statistics is to reduce data to an intelligible and interpretable form so that the relations of research problems can be studied tested and conclusions drawn”. The descriptive statistical technique is used to describe data collected from different sources relevant to the research sample and is mainly concerned with research during fieldwork Hakim (1982).

Descriptive techniques are mainly based on the calculation of the mean, median, mode frequency distribution, percentage distribution and standard deviation. In this study, the descriptive method was used to describe demographic characteristics of the sample respondents and various statements relating to Human Resource Practices.

3.11.3.2. INFERENTIAL STATISTICS:

Inferential statistics enable the researcher to draw conclusions about a population from a sample (Hair, Babin, Money, & Samouel, 2003). The following inferential statistics were used for testing the stated hypothesis in the study.

Level of Significance

The statistical level of significance is accepted when the p value is less than 5% (0.05). The lower the significance level, the more the data must diverge from the null hypothesis to be significant. Therefore, the 0.01 level is more conservative than
the 0.05 level. This significance level means the probability that this result could have been produced by chance is less than 5%, and the smaller the p value, the greater the likelihood that the result expressed is not merely due to chance. The choice of a 0.05 significant level, which was suggested by Ronald Fisher (1925, cited in Field, 2005:25), means that if there is only a 5% probability of something occurring by chance, then the finding can be accepted as true or statistically significant. The 0.05 level of significance is typical for business research (Bryman & Cramer, 1997).

Analysis of Variance

A one-way analysis of variance (ANOVA) is a similar notion to that of the independent t-test, but it is used to compare more than two groups. It is selected when there is a need to compare two or more means to see if there are any statistically significant differences among them (Tabachnick & Fidell, 2007). ANOVA uses the F-ratio to test the overall fit of a linear model. It is an inferential test designed to assist researchers in deciding whether they should accept or reject their null hypothesis.

Pearson's Correlation Coefficient

Correlation is the extent to which two variables are related to each other (Saunders, Lewis, & Thornhill, 2007); that is, a correlation test discovers the direction of association (positive, negative or non-existent). According to Field (2005), Pearson’s correlation coefficient can take any value from -1 (as one variable changes, the other changes in the opposite direction by the same amount), through 0 (as one variable changes, the other remains the same), to +1 (as one variable changes, the other changes in the same direction by the same amount). In this study Pearson Correlation Coefficient is used to test the null hypothesis.

Multiple Regressions:

Multiple regression analysis is defined by Frankfort-Nachmias and Nachmias (1996) as “a method used when there are several independent variables, each of which may contribute to our ability to predict the dependent variable”. The objective of multiple regression analysis is to summarize data as well as to quantify relationships among variables, expressed via an equation for predicting typical values of one variable given the value of other variables. Multiple regression analysis involves finding the best straight-line relationship to explain how the variation in dependent variable (Y), depends on the variation in
independent variables, (that is, X₁, X₂, X₃). Each predictor has a regression coefficient bi associated with it, and b₀ is the value of the outcome when all predictors are zero (Field, 2005). Once the relationship has been estimated, the equation will be calculated as:

\[ Y = (b₀ + b₁X₁ + b₂X₂ + \ldots + bₙXₙ) + ε₁ \]

Therefore, each independent variable is weighted by the regression analysis procedure to ensure maximum prediction from the set of independent variables (Hair, Anderson, Tatham, & Black, 1998). In this study, in order to investigate the combination effect of the Human Resource Practices on Organizational Commitment.

3.12. LIMITATIONS OF THE STUDY:

This study is mainly based on survey method of research. Therefore, the limitations of survey method are expected to influence the outcomes of the research.

The study is confined to the software companies of CMM Level 5 in Hyderabad, Gachibowli region only. Therefore, not all the findings of the present study could be generalized since the research variables and determine factors being investigated in the present study could have different dimensions in different context and settings.

One of the main limitations of the study was the unwillingness of the companies to part with information which could not be classified as strategic. Also on a few occasions, while interviewing the respondent’s employees, the researcher had to confront with certain difficulties in obtaining frank responses from them due to their inhibition and lack of freedom. The analysis and interpretations made in the study are based on data collected in this manner. However efforts have been taken by the researcher to cross check the responses and to make the conclusions as meaningful and rational as possible.