Chapter-4
Research Methodology

4.1. Introduction

Research methodology is an approach that makes the base of the research by giving structure to the various approaches used by the researcher so as to achieve the research objectives (Cohen, Manion & Morrison 2007). Research methodology gives a rough idea about the procedures of research and data analysis that is to be undertaken in a study. The selection of an inappropriate research method can cause a study to fail (Punch 2009). Hence, the selection of a suitable research method for a study should be achieved after assessing several methods.

The purpose of the current chapter is to offer an outline of the methodology utilized in the present study. This chapter outlines the research method for the study and includes Research design, Research Objectives, Operational definition of various variables, Research Hypothesis, Sample and population, Sources of data needed to test each hypothesis, Mode and Method of data collection, Description of the instruments, Planned analysis etc.

4.2. Research Method

Comprehending research philosophy gains prominence while conducting research, as failure to do so could not only affect the outcome of the research but also its quality. Thus, the understanding of, the examined “reality and being” (i.e., ontology), the relationship between the reality and researcher (i.e., epistemology) and the theoretical analysis of the approaches, used by a researcher to comprehend that “reality” (i.e. methodology) is of utmost importance (Lincoln and Guba 2003: 253-291; Denzin and Lincoln 2003: 1-45).

Sayer (1992) has described the two main approaches of research strategy as qualitative and quantitative research. According to Cresswell (2003), qualitative approach generates knowledge through constructivism, where constructivism includes “inquiry such as narratives, phenomenology, ethnographies, grounded theory and case studies”
(Bahari 2010: 17-28). Alternatively, according to Cresswell (2003), quantitative research “is one in which the researcher primarily uses post positivist claims for developing knowledge for example; cause and effect thinking, reduction to specific variables and hypothesis and questions, use of measurements and observations, and the test of the theories.” In the quantitative method, research strategies employed are experiment, and surveys, wherein the data is collected through structured questionnaire.

Table 4.1 presents the difference between the quantitative and qualitative researches.

<table>
<thead>
<tr>
<th>Description</th>
<th>Quantitative</th>
<th>Qualitative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Objective</td>
<td>To find facts based on evidence or record</td>
<td>To measure attitude based on opinions, views and perceptions</td>
</tr>
<tr>
<td>Relationship between researcher and the subject</td>
<td>Distant</td>
<td>Close</td>
</tr>
<tr>
<td>Sample</td>
<td>Large sample size which are representative</td>
<td>Small number of sample size that are not representative</td>
</tr>
<tr>
<td>Data collection</td>
<td>Structured</td>
<td>Unstructured</td>
</tr>
<tr>
<td>Scope of findings</td>
<td>Nomothetic</td>
<td>Idiographic</td>
</tr>
<tr>
<td>Relationship between theory / concept / research</td>
<td>Testing / confirmation</td>
<td>Emergent / development</td>
</tr>
<tr>
<td>Nature of data</td>
<td>Hard &amp; reliable</td>
<td>Rich &amp; deep</td>
</tr>
</tbody>
</table>

*Source: Naoum, 1998; Chisnall, 1997*

The present research has adopted the quantitative research method, and the data was collected by employing a survey questionnaire.
4.3. Research Design

As explained by Vogt (1993), research design has been called the “science and art of procedure planning for conducting studies so that most valid findings could be obtained”. A study’s design provides details of varying components of research, such as sampling procedures, data collection and analysis concerning the central research question. The present research work is an empirical data based research work.

An exploratory study is attentive towards investigating and fact-finding with respect to different events. Accordingly, they are beneficial when there is an inadequacy of knowledge about an event. So, as is said by Gray (2013), the objective of an exploratory study is to determine whether or not an issue is worth exploring. In other words, an exploratory approach is brought into use when the event to be investigated is equivocal and therefore an effort is made to ascertain its characteristics. The current study is Exploratory since there are limited historical studies on the same phenomenon. Therefore, a crucial focus of the current study is to gain insights and familiarity with the phenomenon of subsequent detailed study since the problem is in a preliminary phase of scrutiny.

A descriptive research focuses to offer a view of an occurrence, as it normally takes place (Hedrick, Bickman, & Rog 1993). Therefore, studies with the above stated objective can only offer a description of an occurrence or may consider a standard analysis, which is, evaluating the evidence against a standard (Gray 2013). A descriptive study can be followed when the researcher does not completely understand the state of affairs but the problem is known. In other words, the significance of a descriptive study is the ‘what’ of a problem. Therefore, the causes of the problem are not explored (Zikmund et al. 2012). The current study is also descriptive since it attempts to offer clarification with regard to the ‘who’, ‘what’, ‘when’, ‘where’, and ‘how’ associated with the present research problem.

The combination of exploratory and descriptive research methodology were used in the research in order to gain familiarity with the three concepts (EI, TL and Emp) by describing accurately the characteristics of each of these concepts. In the initial development of the framework to establish the relationship among the three concepts of
EI (Emotional Intelligence), TL (Transformational Leadership) and Emp (Empowerment), an exploratory research methodology was found to be beneficial as it helped in finding various possible relationships among these concepts. Based on the exploratory study, the measuring instrument was developed to test the hypothesis. A focussed descriptive research was used to find some concrete relationships among the 3 concepts (EI, TL and Emp).

Figure 4.1: Research design

Source: Adapted from Hussey and Hussey, 1997

4.4. Research Question

• Does emotional intelligence influence a leader to use a transformational leadership style?

• Does emotional intelligence influence a leader to feel empowered and create an empowering environment in their teams?

• Would the nature of industry, gender, age, education and experience affect Emotional intelligence, Leadership style and Empowerment?

4.5. Research Objectives

• To develop a conceptual framework relating EI with TL and Empowerment.
• To develop a measuring tool based on the conceptual framework

• To study the influence of EI on TL

• To study the influence of EI on Empowerment

• To compare the results across demographic and industrial data.

4.6. **Operational Definitions**

4.6.1 **EI Variables**

• Identifying Emotions: This refers to the ability to recognize and label an emotion as it happens.

• Understanding Emotions: Refers to the ability to understand ones and others emotions. Ability to perceive emotional responses that is likely to be expressed in a variety of situations.

• Managing Emotions: Refers to the ability to control and express emotions to others appropriately in a variety of situations.

• Internal Motivation: Ability to achieve goals by gaining energy from personal values, commitments and purpose.

• Empathy: Ability to recognize and appropriately respond to others emotions.

4.6.2. **TL Variables**

• Inspiring To Go Beyond: Ability to encourage people to look beyond their own interests and established standards, towards the interests that will benefit the larger group/organization.

• Demonstrating Integrity: Refers to honest, ethical behavior in all interactions. Ability to treat people fairly and be a good role model.
• Creating A Shared Vision: Ability to communicate the organization’s vision to the team and develop strategies and priorities to help achieve that vision.

• Building Effective Relationships: Ability to develop a network of meaningful relationships by treating people with respect and dignity.

4.6.3. **Empowerment Variables**

• Autonomy: Concerns with allowing people to take initiative and make decisions within their scope of work.

• Opportunities For Learning Application: Refers to the process of providing opportunities and encouragement for continuous learning and application of the learning.

• Open Communication: Refers to an environment where people openly share their views; where constructive feedback is accepted and given in a timely manner.

• Support For Innovation: This category includes encouraging sharing of ideas and creativity to challenge the status quo and go beyond the expected ways of working.

4.7. **Research Hypothesis**

From the literature survey and the gaps identified in the literature, a total of five null hypotheses was derived from the research and are tested in the research which is as follows:

4.7.1. **Emotional Intelligence and Transformational leadership style**

Transformational Leaders could use strong emotions to produce similar feelings in their employees. Transformational Leaders who can recognize and manage their own and others' emotions will be more efficient at making their followers accept, believe and follow their vision (Conger and Kanungo 1998: 471-482). As is told by Schwartz (1990), leaders who are capable of accurately identifying emotions are more capable of
determining whether the emotion they have is connected to opportunities or problems, and thus utilize those emotions in the decision-making process. Emotional Intelligence is both a necessary and core competence of the personal charisma that leaders demonstrate.

The team that is emotionally intelligent shows a sense of trust and belonging, which leads to being empathetic towards others and open communication. These factors are critical for creative expression. Besides, mood plays an important role in creative problem solving. People who experience positive mood find it much easier to categorize problems features as either unrelated or related (Isen & Daubman 1984). Higher levels of commitment are encouraged among followers by transformational leaders so as to achieve organizational objectives. As is told by Bass (1990b) that transformational leadership is attained when the interest of the employee is raised and enhanced by leaders, when awareness and acceptance is generated by them about the missions and purposes of the group, and when they inspire their employees for the good of the group to look beyond their own self interest”. Transformational leaders seek new opportunities, innovative ways of working, prefer effectiveness more than efficiency and encourage greater performance at the organizational level, thus leading to greater organizational outcomes (Lowe, Kroeck & Sivasubramaniam 1996: 385-425).

This study however attempted to test the following hypothesis that Emotional Intelligence does not influence a leader to use a Transformational Leadership style:

**Hypothesis 1 (H1₀)**- Emotional Intelligence does not influence a Transformational leadership style.

4.7.2. **Emotional Intelligence and Empowerment**

Surprisingly, there has been very little research in understanding the interaction between Empowerment and EI. Sprietzer (1995) defines Psychological Empowerment as a motivational construct. Empowerment is an increased intrinsic motivation towards work, with respect to the competence, self-determination, meaning, and impact. He emphasized that the four factors mentioned above show one’s active orientation towards one’s work role.
Emotional stimulation from anxiety, depression, fear and stress, both on and off the job, can decrease expectations of self-efficacy. Individuals are more likely to feel competent when they are not experiencing strong apathetic stimulation. Empowerment strategies and techniques that give the comfort of emotional support for employees and create a trusting and supportive atmosphere in the group could be more effective in strengthening beliefs of self-efficacy (Neilsen 1986). Managers who are capable enough to understand the way in which empowerment integrates with the culture of an organization are more motivated to help and lead employees, internalize in them the values and traditions of empowerment. Such managers’ help in creating such a work environment where employees take action more for intrinsic reasons than for extrinsic reasons (Mallak and Kurstedt 1996: 8-10).

Douglas et al (2003) studied whether the performance and conscientiousness relationship is stronger for individuals having high Emotional Intelligence. It was observed that for such people with high conscientiousness and high Emotional Intelligence, there is increased performance. For people with low Emotional Intelligence, it was found that high conscientiousness related to low performance. Titrek et al (2014) claimed that without well-developed Emotional Intelligence, Empowerment models are just concepts without a complete follow-through. According to him, EQ and Empowerment go hand in hand, for there is no greater component to Empowerment (skill to make better decisions) than having high levels of EQ. He called the notion of mastering performance by appreciating the role of emotions as EQ powerment. Empowerment of employee is crucial for the organization’s success and survival, especially in the current circumstances of globalization. As is told by Ongori (2000) that empowerment of the employee provides visible benefits to both the organization and the individual. Employees feel that they are vital to the success of the organization. The employee feels accepted and takes complete ownership. It leads to job satisfaction, job involvement, higher performance, loyalty, and faster service delivery to customers (Fulford and Enz, 1995: 161-175). Employee Empowerment facilitates change in the organization and fosters a competitive climate. Empowered employees have a high degree of self-efficiency and are given a lot of responsibility and authority in their jobs (Cogner & Kanungo, 1988; Ford & Fottler, 1995; Quinn and Sprietzer, 1997).
So, the following hypothesis was derived to test whether a culture of empowerment will be influenced by EI leaders and managers.

**Hypothesis 2 (H2o)** - Emotional Intelligence does not influence leaders to empower self and their team members.

### 4.7.3. Demographic Data and EI, TL and Empowerment

In this study an attempt was made to do a comparative analysis on the impact of Emotional Intelligence on Transformational Leadership and Empowerment which could be influenced by:

- Characteristics of individuals (Age, gender, marital status, education and experience)
- Levels of Leadership (Senior Level, Mid Level and Junior level)
- Team size (below 10 team members, 11-20 team members, more than 20 team members)

Characteristics of workplace (different industries). The rationale for choosing different industries is based on the understanding that the criteria for selection of leaders vary across industries. In certain industries, leaders are selected based on relevant experience, tenure and/or seniority within the organization. Whereas in few other industries, leaders are selected based on performance, exposure, value adds etc. with minimal considerations to experience within the organization. So, following hypothesis were derived to find out whether there will be a significant impact on the perception of Emotional Intelligence, Transformational Leadership and Empowerment by the various demographic details of the respondents.

**Hypothesis 3 (H3o)** – Demographic data does not affect the perception levels of Emotional intelligence

**Hypothesis 4 (H4o)** - Demographic data does not affect the perception levels of Transformational Leadership

**Hypothesis 5 (H5o)** - Demographic data does not affect the perception levels of Empowerment.
4.8. Sample and Population

4.8.1. Study Area
The study was carried out in Bangalore, now known as Bengaluru, which is the capital of the state of Karnataka. Its total population is 8.42 million and metropolitan population is approx. 8.52 million. It is the third most populated city in India.

Bangalore's economy makes it one of the major economic centers in India. In India, it is the second fastest-growing major metropolis. It is also India’s largest fourth fast-moving consumer goods market. It is a location that holds the headquarters of various public sector undertakings like Bharat heavy electrical Ltd. (BHEL), Bharat Electronics Limited (BEL), Hindustan Aeronautics Limited (HAL), National Aerospace Laboratories (NAL), Bharat Earth Movers Limited (BEML), HMT (formerly Hindustan Machine Tools), Central Manufacturing Technology Institute (CMTI). Bangalore is also known as the Silicon Valley of India as there are a large number of IT companies situated in the city.

Being a hub for various industries, Bangalore was chosen as the study area. Besides, the researcher has considerable access to the study population in the city, and it would help in gaining easy access to the population.

4.8.2. Sampling Procedure
Sampling refers to selection of an adequate number of units/elements from the population to allow generalization of results. An adequately representative sample is a fundamental element of a quantitative research study. Sample bias, while drawing sample, must be avoided by ensuring sample adequacy and sample randomness (Hussey and Hussey, 1997). Sample survey is utilized in the present study is according to Johnson and Christensen (2014), where population survey is recommended for a small population of 100 or less. As the population of managers and leaders in industries is large, a sample survey was utilized.

4.8.3. Universe of the Study
The universe or population refers to all the available prospective respondents for the study. In this study, all the leaders and managers from six different industries in
Bangalore is the universe. Thus, the universe of this study consists of the leaders and manager working in different industries of Bangalore. The segments included for study are Financial services, IT services, Educational services, Health services, Hospitality, Non-Governmental Organizations (NGOs), and Retail. No specific headcount for the companies were used as a selection criteria as the study includes organisations like NGO which often do not have many employees.

The sample for the present study included the Leaders and Managers of a variety of industries in Bangalore including Finance services- 245, IT services-320, Educational Services-70, Health Services-45, Hospitality-71, Non-Governmental Organizations (NGO’s) -45, Retail-136 etc.

The inclusion and exclusion criteria for the study were set for the easy selection of actual study sample.

**Inclusion Criteria**
- Leaders and managers with a work experience of six or more years
- Leaders and managers with age from 26 yrs.
- Number of reporting team members under the leader ≥5
- Nature of teams included in the study - Accounts, Delivery, Design, Development, Operations, People team, Quality, Research, Sales & Marketing

**Exclusion Criteria**
- Leaders and managers with a work experience <6yrs.
- Leaders and managers with age <26 yrs.
- Number of reporting team members under the leader <5
- Nature of teams excluded in the study- any team other than Accounts, Delivery, Design, Development, Operations, People team, Quality, Research, and Sales & Marketing.

**4.8.4. Sample Size**
The determination of sample size is the process of choosing the number of replicates or observations which are to be included in a statistical sample. The sample size helps in extrapolating the results to population and make inferences from it.
The sample size included a total of 944 (minimum 40 from each industry that included senior, middle and junior level managers/leaders) in Bangalore for this study. Stratified random sampling, which is commonly used in exploratory research, was used in this study. This technique also enabled the researcher to randomly select respondents as per the ease of the researcher (Sekaran & Bougie 2010; Zikmund et al., 2010).

4.9. Sources of Data Collection

4.9.1. Primary Data

The primary data used for the study was gathered through the use of a questionnaire. Print and email copies of the questionnaire were provided to the leaders and managers of different industries located in Bangalore to collect responses.

4.9.2. Secondary Data

Secondary data was collected from literature review, vision, mission and value statement of the organization, and other relevant data that was accessible and available to the researcher which would throw light on the organization’s leadership styles.

4.10. Mode and Method of Data Collection

Data collection was done through customized questionnaires specially prepared for this study. The support of literature was taken to understand the criteria for emotional intelligence, empowerment and transformational leadership. Both online questionnaire and hard copy of questionnaire were used for the study as some of the respondents were comfortable filling online forms, while some were not. The questionnaire prepared to capture inputs on emotional intelligence, empowerment, and transformational leadership was distributed to 1200 employees of various industries like Financial services, IT services, Educational services, Health services, Hospitality, Non-Governmental Organizations (NGOs), and Retail located in Bangalore.

The data were collected over a period of six months from selected companies from different industries in Bangalore city. A total of 1200 questionnaires were distributed through personal distribution as well as through email to the employees. Out of 1200 questionnaires, 960 were returned, giving an 80% return rate; however, only 944 were usable while others were incomplete.
Companies were visited personally and the aim of the project was explained to the leaders and managers before filling in the questionnaire forms. In the case of online survey, the link was sent through emails to the respondents after explaining about the study. Only those willing to fill the forms were used in this study. No undue pressure or soft sales pitch was used to induce participants to spare their time to fill up the questionnaire. Thus, most dimensions of the phenomenon under study were adequately represented by the method suggested by Polit and Beck (2006) (Figure 4.2).

**Figure 4.2: Sampling design adopted for this study**

### 4.11. Development of Research Instrument

Questionnaires are defined as a ‘set of carefully designed questions given in exactly the same form to a group of people in order to collect data about some topic(s) in which the researcher is interested’ (McLean 2003). Oppenheim (1992) opines that the creation of a questionnaire is an vital component of the research design process. They are considered good option for data collection because of “low cost of data collection and processing, and the minimal training required by the person administering team” (Jones, Murphy, Edwards & James 2008, p. 15-26), and are greatly helpful ‘for a greater geographical coverage’ without the need to travel much (Seale 2012). Thus, the questionnaire survey method is normally used if data needs to be collected from a large number of participants within a limited period of time. Although it is commonly said that the data can be collected within two weeks, depending on the type of participants involved and the location of the study, more time may be required. Further, buffer time should also be taken into consideration for late arrivals of returns. Moreover, the risk of bias is reduced and the respondents are able to answer the questions without the influence of the
researcher, thus increasing the reliability of survey methods. Such benefits motivated the use of a questionnaire survey method in this study.

Further, this method is effective for collecting descriptive data and analytical surveys. It is subjective where the opinion of the respondents matter. The questions framed should be simple, easily understood by the respondents and can either be open or closed-ended or a mixture of two (Oppenheim 1992; Frazer and Lawley 2000). It should contain clear instructions for its completion with response alternatives and appropriate provision to record the responses (Frazer & Lawley 2000).

Sufficient care should be taken to ensure that questions that are framed should be based on the research problem and research objective (Naoum 1998). The primary advantage is high validity of results and within a limited period of time. However, it does not allow the opportunity to discuss, clarify, probe or delve into the subject. Further, the accuracy of the response also depends on the profile of the respondents. Questionnaires can be administered through mail, person, telephone and internet (Frazer and Lawley 2000).

The characteristics of EI, TL and Emp as identified in the review of literature was the basis for the conceptual network, which in turn became the basis for the development of questionnaire. In this study, self-administered questionnaire survey was used as the research instrument. This method is an efficient data collection method to ensure collection of relevant and consistent information. This method was selected as it is objective, standardized and comparable (Zikmund et al. 2010).

As no questionnaire was found during the literature survey which covered all the aspects EI, Emp and TL selected for the research, a questionnaire was developed selecting relevant questions from various questionnaires used by various scholars in leadership books and research papers to capture the data for the present research. The three questionnaires from where the relevant questions were picked up and the respective questions that were selected from each of the questionnaire is shown in the tables below:

- EI questions from the Six Seconds EI questionnaire (SEI) (Freedman et al 2005)
- Empowerment and few TL questions from the tool developed by Murari and Gupta (2012)
- Few TL questions from the leadership inventory by Marshall Goldsmith & Mark Reiter (2007) that was in his book “What got you here won’t get you there”

Table 4.2: EI questions from the Six Seconds EI questionnaire (SEI) (Freedman et al, 2004)

<table>
<thead>
<tr>
<th>Construct</th>
<th>Original Questionnaire</th>
<th>Questions numbers that were adapted</th>
<th>Validity and Reliability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emotional Intelligence</td>
<td>Six seconds EI questionnaire, 2005</td>
<td>1, 2, 3, 4, 5, 14, 15, 16, 17, 18, 27, 28, 29, 30, 31, 40, 41, 42, 43, 44, 53, 54, 55, 61, 62, 65</td>
<td>SEI-AV is validated through Factorial Analysis and renders fair construct validity. Cronbach Alpha ranging from 0.73 to 0.84</td>
</tr>
</tbody>
</table>
Table 4.3: Empowerment and TL questions from the tool developed by Murari and Gupta (2012)

<table>
<thead>
<tr>
<th>Construct</th>
<th>Original Questionnaire</th>
<th>Questions numbers that were adapted</th>
<th>Validity and Reliability</th>
</tr>
</thead>
<tbody>
<tr>
<td>TL, Emp &amp; Org outcome</td>
<td>Servant Leadership and Employee Empowerment: A Measuring Instrument; Murari and Gupta, 2012</td>
<td>7, 9, 10, 11, 13, 19, 23, 24, 26, 36, 38, 39, 46, 48, 49, 50, 51, 52, 58, 59, 60, 63, 64.</td>
<td>Cronbach Alpha is 0.9423</td>
</tr>
</tbody>
</table>

Table 4.4: TL questions from the Leadership Inventory by Marshall Goldsmith (2007)

<table>
<thead>
<tr>
<th>Construct</th>
<th>Original Questionnaire</th>
<th>Questions numbers that were adapted</th>
<th>Validity and Reliability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Global Leadership Inventory</td>
<td>Marshall Goldsmith, 2010</td>
<td>6, 8, 12, 20, 21, 22, 25, 32, 33, 34, 35, 37, 45, 47, 56, 57</td>
<td>As part of a research project (sponsored by Accenture) involving 200 specially selected high-potential leaders from 120 companies around the world</td>
</tr>
</tbody>
</table>
The questionnaire consisted of two sections.

First section dealt with the demographic details of the respondents, while section two contained questions pertaining to EI, Empowerment and Transformational leadership.

The demographic profile gives personal data of the respondents regarding the gender, marital status, designation, age, educational qualification, industry sector, department, total work experience, and team size. Descriptive analysis for the demographic details was done and the results are presented in the form of charts and tables.

Section 2 dealt with information on EI, Empowerment and Transformational leadership, consisting of 65 questions. The responses were marked in 5-point Likert scale with 1 being Disagree and 5 being Agree. These 65 questions were placed under various variables for each of the three dimensions in the framework i.e. Emotional Intelligence, Transformational leadership and Empowerment. Under the dimension of Emotional Intelligence there were taken five variables into consideration, namely, IEM (Identifying emotions), UEM (Understanding Others Emotions), MEM (Managing Emotions), IMO (Intrinsic motivation), and EPY (Empathy). The Transformational leadership dimension had four variables, namely, IGB (Inspiring to go beyond), IDS (Integrity Demonstration), CSV (Creating Shared Vision), BER (Building Effective Relationship). While the Empowerment dimension constituted four variables, namely, AMY (Autonomy), OLA (Opportunities for Learning Applications), OCN (Open Communication), SFN (Support For Innovation).

4.12. Variables

Independent variables used in the study was EI. In addition, demographic details were also used as independent variable to test their impact on the perceptions of EI, TL and Empowerment.

Dependent variables used for the study were TL and Empowerment.
4.13. **Pilot Study**

A pilot study was carried out to test modalities and reveal deficiencies in the procedure so that these could be addressed before going in for the larger data collection exercise. The pilot study also tried to find out the possible problems that could come up regarding the answerability of the questionnaire by the students. Another objective was to find out whether the questionnaire was an adequate data collection instrument.

The pilot study was carried out with 300 respondents (N = 300). Companies were visited personally and the aim of the project was explained to the leaders and managers before filling in the questionnaire. Questionnaires were distributed through personal distribution only. Online survey was not used during the pilot study as it was necessary for the researcher to be present at the site, to clarify the doubts, if any and also personally collect feedback on the questionnaire from the participants. This personal administration and collection of questionnaire helped largely in checking the validity of the instrument further, though the original questionnaire from which the questions were adapted were standardized tools themselves. The questionnaire was also checked for internal consistency and reliability using the appropriate statistical tool. Post the pilot it was decided to reword the questions that have low reliability and also omit few questions that have really low reliability value (i.e. Cronbach's alpha < 0.6). The reliability scale was decided on the basis of Cronbach’s Alpha Reliability Statistics method.

Table 4.5 : Reliability statistics for Emotional Intelligence

<table>
<thead>
<tr>
<th>Constructs</th>
<th>Number of Items</th>
<th>Cronbach's alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identifying Emotions (IE)</td>
<td>4</td>
<td>0.602</td>
</tr>
<tr>
<td>Understanding other’s Emotions (UEM)</td>
<td>4</td>
<td>0.659</td>
</tr>
<tr>
<td>Managing Emotions (MEM)</td>
<td>7</td>
<td>0.708</td>
</tr>
<tr>
<td>Intrinsic Motivation (IM)</td>
<td>6</td>
<td>0.728</td>
</tr>
<tr>
<td>Empathy (EPY)</td>
<td>5</td>
<td>0.695</td>
</tr>
</tbody>
</table>
Table 4.6: Reliability statistics for Transformational Leadership

<table>
<thead>
<tr>
<th>Constructs</th>
<th>Number of Items</th>
<th>Cronbach's alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inspiring to Go Beyond (IGB)</td>
<td>5</td>
<td>0.849</td>
</tr>
<tr>
<td>Integrity Demonstration (ID)</td>
<td>5</td>
<td>0.897</td>
</tr>
<tr>
<td>Creating a Shared Vision (CSV)</td>
<td>4</td>
<td>0.852</td>
</tr>
<tr>
<td>Building Effective Relationships (BER)</td>
<td>6</td>
<td>0.856</td>
</tr>
</tbody>
</table>

Table 4.7: Reliability statistics for Empowerment

<table>
<thead>
<tr>
<th>Constructs</th>
<th>Number of Items</th>
<th>Cronbach's alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Autonomy (AMY)</td>
<td>6</td>
<td>0.838</td>
</tr>
<tr>
<td>Opportunities for Learning Applications (OLA)</td>
<td>4</td>
<td>0.814</td>
</tr>
<tr>
<td>Open Communication (OCN)</td>
<td>5</td>
<td>0.842</td>
</tr>
<tr>
<td>Support For Innovation (SFN)</td>
<td>4</td>
<td>0.804</td>
</tr>
</tbody>
</table>

Based on the literature and the pilot study, the final questionnaire was framed. The draft of the questionnaire was almost the same version of the pilot study without many changes and contained the preliminary structure of the questions used in the final questionnaire. The pilot study helped in the collection of data of relevance to the researcher in order to estimate the reliability and the validity of the variables of the survey and ensure a proper data collection by the researcher. The final draft of the questionnaire was constructed in accordance results obtained from the pilot study.
4.14. **Analysis of the Results**

The data which was collected through the survey was analyzed quantitatively using descriptive statistics. Descriptive statistical analysis was used to summarize the measures and the sample, along with simple graphics analysis. Some Statistical analyses were done by using percentage and frequency distribution analysis. It was used to estimate variation of a certain amount among set of values in the data. T-test was also performed to make comparison between two variables. For more than two variables ANOVA was performed to compare the means between the groups taken for analysis and determine if any of these means are significantly different from each other. It was used for testing the hypothesis where several means are equal. The hypothesis was also tested using Pearson’s Correlation Test and Linear Regression Analysis.

**Structural Equation Modeling (SEM)**

Structural equation modeling (SEM) is method followed to understand the relationships between several latent variables. This method is used to investigate the interrelated relationships between several dependent variables and independent variables at the same time (Hair et al., 2006). Further, SEM is considered as a multivariate statistical approach, which can be used to evaluate the structural as well as the measurement components of a model by constantly testing the interrelationships between several dependent and independent constructs at the same time (Gefen et al. 2000; Tabachnick and Fidell 2001). In this study, the interrelationship between Emotional Intelligence, Transformational Leadership, and Empowerment was studied using SEM.