CHAPTER - III

RESEARCH METHODOLOGY

The available literature on competency management is not highlighting the problems in using competency management practices and factors, which help in managing employees. However, it helps in arriving at a conceptual framework to guide the empirical investigation.

The Concept

*Competencies* are the skills, knowledge, abilities and other characteristics that are required to perform a job effectively (Jackson and Schuler, 2003) is the concept used in the study. *Competency management* is described as an integrated set of human resource activities aimed at optimizing the development and the use of employee competencies in order to increase individual effectiveness, and, subsequently, to increase organizational effectiveness (Van Beirendonck, 1998).

Jackson and Schuler (1990) defined *talent management*, as an architecture where a set of processes are designed to ensure there are an adequate number of employees for jobs within an organization. It is having the right resource available at the right time for the right jobs. These form the conceptual basis for the study.

Framework

The conceptual framework for the study was arrived at, after incorporating the major constructs previously identified in the literature. The awareness, application and perceptions of individuals on competency management lead to talent management. The individuals would equip themselves with knowledge skills and competencies towards the possibility of their talent being acquired, (Jyotsna Bhatnagar (2007), Giuseppe Beiro(2007)) performed in such a way that their talent is developed (Shein, 1996) and they are retained thus ensuring their continued employability in the organization (Marrelli, 1998). Similarly even at the organizational level the awareness, application of
competencies leads to talent management (C K Prahlad & Gary Hamel, 1990; Thomas V. Durbin, 2006; William Rothwell & John E Lindholm, 1999; Chris Ashton, 2005; Arthur, 1994). The organization thus will be able to acquire, develop and retain talent using competency management as a tool (Marrelli, 1998).

**Figure 3.1 – Research Framework.**

This framework throws up certain research questions, which are given below. This framework also guided the development of some primary research questions for the study. They are

**Research Questions**

1. What is the role of competencies at the individual level?
2. What is the role of competencies at the organizational level?
3. How should an organization equip itself for competence management?
4. How does the competency management benefit the individual?
5. How does the competency management benefit the organization?
6. How should Competencies be identified?
7. Which HR functions support competencies identification, development & management?
8. How should the HR go about with competency management in terms of recruiting, training, performance appraisal, succession planning, learning management and compensation management?
9. What are the competence management tools used for talent management?
10. What does TM imply and entail?
11. Is TM limited to talent acquisition, talent development & talent retention?
12. What is the relationship between competence management and talent management?
13. What are the enabling factors of talent management?
14. What are the disabling factors of talent management?

All these questions have been brought together in a framework from studies conducted independently and in isolation to each other to address the questions and also objectives framed for the empirical study. As Storey (1994) puts it the vast bulk of studies have been conducted independently of each other. Frequently they address issues of specific interest to the researcher, but do so in a way, which makes comparability with other studies difficult.

**Objectives of the Study**

Broadly the study examines the competency management practices leading towards talent management in Indian IT organizations. More specifically the study aimed

- to examine whether competency management as a practice is used by the Organization;
- to examine whether the individuals employees are aware of the competency management practices and its applications in the organization;
to identify the different HR functions where the competency based tools are used;

to identify the enabling factors for managing talent through competency management; and

to study the relationship between competencies and Talent Management;

Scope of the Study

The scope of the study was determined based on the geographical area to be covered, the time frame for data collection, availability of the data and willingness to share the information by the organizations. This research is limited to study the competency management as a practices to manage the talent in Indian IT organizations. IT organizations performing business for more than five years continuously and having staff strength of 50 and above have been considered for the study. In a way, while there was no upper limit for the number of years, the minimum organization age was determined with the cut off year of establishment as 2004.

Research design

The study is exploratory in nature. Literature evidences little information on similar issues and solutions in the past. This entailed the construction of the conceptual framework based on isolated studies conducted in different contexts. Documentation in the Indian context is much more limited due to the security reasons and relatively new phenomena of competence management. The qualitative data had to be collected to comprehend the problem and understand the phenomena in the absence of a validated framework. The study aims at finding out the awareness of employees about competency as a concept, awareness with regard to different contexts, application of competencies with regard to identifying the different HR functions which use competencies, identifying the levels where the competencies are used in the organizations, finding the enabling and disabling factors of talent management in the organizations. Survey method was used to collect the relevant data/information.
Assumptions of the Study

The concept is new in India, few research studies evidence literature on the subject. The data is limited and inconclusive about the relationship between competence management and talent management. Eisenhardt (1989) states that theory building research should begin as closely as possible to the idea of no theory under consideration and no hypothesis to test. However, some assumptions could form a starting point for the study to prevent data dredging. Studies on competence management as a tool to manage talent were inconclusive and hence, the study starts with some assumptions. They are

- Awareness of competency management practices leads to individual benefit.
- Competency management helps organizations in Talent management.
- Competency management contributes in talent acquisition, development & retention.
- Competency management leads to better HRM.

Pilot Test

Cooper and Schindler (2001) suggest that a pilot test be conducted to detect weaknesses in design and instrumentation and provide proxy data for selection of a probability sample. It should draw subjects from target population and simulate the procedures and protocols that have been designated for data collection. The pilot test is to be conducted exactly the way that is planned to take place in a later stage on which the official survey should be implemented (Cooper and Schindler, 2001). A Pilot study involving the administration of a preliminary version of the survey with 2 structured questionnaires to a random sample of 45 senior managers and middle level staff working in IT organizations for knowing the practicality / feasibility of the instrument. The purpose of pilot study was to improve the face validity of the survey instrument and to enhance psychometric properties of the scales. The pilot study conducted was found to be consistent with Nunnally’s (1978) recommendation that subjective assessments be made of a survey instrument to ensure that the questions are understandable and that the scale items represent the underlying constructs of interest. After pilot study, as per the output of the analysis and researcher’s observation, two questions were removed one each from the factors contributing to talent and role and practice of competence at the individual and
organizational level, and also the wordings of two questions were changed on the awareness of competence. Moreover, one question was added related to the factors not contributing to talent. The instruments were validated and the reliability value for employee questionnaire was 0.747 and senior executives was 0.657 (cronch bach alpha value). A sample of the questionnaire prepared for senior executives and the employees in general are attached at Appendices A to B respectively. The questionnaire prepared for the senior executives was taken as the base. Similarly, the employee’s questionnaire was also prepared after suitably framing the questions. As evident from the employee’s questionnaire, views were solicited for the same question from both the groups – senior executives and employees so as to examine the patterns/trends in their views.

Validity and Reliability

The ensuring of validity and reliability is a prerequisite for research data in order to circumvent possible shortcomings and pitfalls in research results (Ehlers, 2009). Validity of the variable reflects the extent that differences related to the construct that are sought to be measured (Hair et al., 1999).

According to Cooper and Schindler (2001) many forms of validity exist. The two major ones are external validity and internal validity. Internal validity refers to the extent, which a test measures what is intended to measure. On the other hand, external validity refers to the extent of generalizability of the results of a study across persons, setting or events. The reliability of a variable is a necessary but not a sufficient condition for its validity. Validity can never be established unequivocally, but can only be inferred either by direct assessment or indirectly by assessing reliability. According to Hair et al. (1995), reliability of a variable reflects the extent to which a variable is consistent in what it is intended to measure. If multiple measurements are taken, reliable measures will be very consistent in their values.

Reliability applies to a measure when similar results are obtained overtime and across situations. Broadly defined, reliability is the degree to which measures are free from error, and therefore yielding consistent results. Imperfections in the measuring process that effect the assignment of scores or number in different ways each time a measure is taken, such as a respondent who misunderstands a question, are the cause of low
reliability (Hair, 1999). There are two dimensions that underline the concept of reliability. The first dimension is concerned with repeatability, which requires the use of test – retest method to administer the same scale or measure to the same respondents at two separate times in order to test for stability (Hair, 1999). The second dimension of reliability is concerned with the homogeneity of the measure. To measure the internal consistency of a multiple – item measure, scores on subjects of the item within the scale are correlated (Hair, 1999).

Wilkund (1999) also points out that the reliability of a measure is established by testing for both stability and consistency. Consistency indicates how well the items measuring a concept hang together as a set and Cronbach’s Alpha is a reliability coefficient indicating how well the items in a set are positively correlated to one another. Cronbach’s Alpha is computed in terms of the average inter–correlations among the items measuring the concept. The closer Cronbach’s Alpha is to 1, the higher internal consistency reliability (Green and Mulaik, 1977; Hair, 1999).

According to Hair et al. (1999), no single item is perfect measure of a concept. Researchers must rely on a series of diagnostic measures to assess the internal consistency. First, there are several measures relating to each separate item, including the item-to-total correlation (the correlation of the item to the summated scale score) or the inter –item-correlation (the correlation among items). Rules of thumb suggest that the item-to-total correlations exceed 0.35 and that the inter-item correlations exceed 0.3. For the second type of diagnostic measure, the generally agreed upon lower limit for Cronbach’s Alpha is 0.7, although may decrease to 0.6 in exploratory research (Hair et al., 1999; Nunnally, 1978).

In order to assess the reliability of the measures in this study, item-to-total correlations and Cronbach Alpha were employed. And as suggested by Nunnally (1978), the criteria for retaining a scale item includes an item to total correlation of at least 0.35 (Nunnally, 1978) and a Cronbach Alpha for the scale of at least 0.70, however, it may decrease up to 0.6 in exploratory research (Hair, 2002).
The SPSS produced separate internal consistency test (i.e. reliability cronbach alpha test) for the senior executives and the employees in Bangalore, Chennai, Hyderabad and Pune as the whole data set. It was noted that Bangalore, Chennai, Hyderabad and Pune sample are homogeneous and suitable for assessing the reliability of the construct.

Table 3.1 reports the results of the Cronbach Alpha values on employees perception for the variables of awareness on HR functions using competencies, identifying the competency practice of the organization, satisfaction rate with the competencies, factors that determine talent and the factors that disable the talent management practice of the organization are found to be 0.891, 0.650, 0.638, 0.884, 0.722 respectively which indicates that they satisfactorily met the requirement by Nunnally (1978).

**Table 3.1 Reliability analysis for variables of the employees**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Cronbach’s Alpha</th>
<th>No.of items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perception on competence based HR functions</td>
<td>0.891</td>
<td>17</td>
</tr>
<tr>
<td>Perceptions on the role of competencies</td>
<td>0.650</td>
<td>7</td>
</tr>
<tr>
<td>Perceptions on talent management practices</td>
<td>0.638</td>
<td>7</td>
</tr>
<tr>
<td>Enabling factors of talent management</td>
<td>0.884</td>
<td>12</td>
</tr>
<tr>
<td>Disabling factors of talent management</td>
<td>0.722</td>
<td>6</td>
</tr>
</tbody>
</table>

Table 3.2 reports the results of the Cronbach Alpha values on senior managers perception for the variables of awareness on HR functions using competencies, identifying the competency practice of the organization, satisfaction rate with the competencies, factors that determine talent and the factors that disable the talent management practice of the organization are found to be 0.746, 0.691, 0.631, 0.859, 0.799 respectively which indicates that they satisfactorily met the requirement by Nunnally (1978).

**Table 3.2 Reliability analysis for variables of Senior Managers**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Cronbach’s Alpha</th>
<th>No of items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perception on competence based HR functions</td>
<td>.746</td>
<td>18</td>
</tr>
<tr>
<td>Perceptions on the role of</td>
<td>.691</td>
<td>8</td>
</tr>
</tbody>
</table>
### Data Collection

The primary and secondary was collected from the respondents. The secondary data related to the information containing the literature review in journals, books and the information/manuals/websites of the respective enterprises.

The primary data was collected from two specifically designed questionnaires - managers and employees. The questionnaire was designed to elicit the following information:

- The demographic profile of the employees and managers – department’s educational qualifications, gender and work experience etc.
- The awareness levels of employees and managers on the competency management practices of organizations..
- To find out the different HR functions that are competency based in the organizations.
- Identify the different hierarchies, where the competency practices are implemented.
- Finding the opinions and perceptions on competency as a practice and as a strategy to develop the organizations.
- Opinion on the contribution of competency management in managing the talent.
- Finding the basis on which talent is identified.
- Identify the enabling and disabling factors of talent management in the organization.
- To identify the problems in implementing competence practices in organizations.

Visit to organizations and the different Departments, collecting relevant information through a specifically designed instrument on the various issues gave the opportunity to
meet the senior managers and employees. Interacting with them face-to-face provided useful information to the researcher in the collection of data. Thus, the researcher collected data from the respondents and there were some cases, when the researcher was allowed to address the respondents about the importance of competencies and competence management, which enabled the respondents to have better understanding of the concept. Thus, data collection started in April 2009 and ended in April 2010.

**Tools and Techniques**

Primary data was collected with the help of two questionnaires. The data relating to respondents in the talent management process – senior executives and employees was collected through a specifically designed questionnaire, which contained open ended and closed ended questions. Respondents were also provided with certain statements and the subjects were asked to indicate their response for the same. In addition, factual data relating to the respondents was also collected from them. Scaling techniques were used to collect data on their perceptions about competencies, talent management practices in the organization and in general. A four-point scale was deployed to collect this data so that the responses could be conveniently classified based on the stand taken by the respondents. For example 1. Strongly agree, 2. Agree, 3. *Strongly disagree* 4. Disagree. These instruments were prepared after a detailed literature survey and consultation with experts.

**Sample**

The population for this study included senior managerial-level executives and the employees working in Information Technology organizations in India.

**A) Selecting the Organizations** – The first step was selecting the organizations for the study. Since India is a hub of Information Technology organizations, the organizations from four cities basically the four happening cities in the IT sector Bangalore, Chennai, Hyderabad and Pune were selected. The “NASSCOM” database of companies was used to select 33 organizations using the software MATLAB for random selection from a population of 99 registered organizations at the time of data collection (Annexure – C). The organizations were chosen based on the 1) organization size (workforce size), and 2)
number of years of operation. It was decided to select organizations, which had more than 50 employees, and those that were in existence for 5 years. Thus, the chosen organizations had workforce size varying from 50 to 38,000. The number of years of operations varied from 5 to 22 years among the chosen organizations. 33 organizations drawn from IT-sector were selected for the study, thus covering 33% of the population. Details are given in table 3.3.

Table 3.3 Description of the sample.

<table>
<thead>
<tr>
<th>Cities</th>
<th>Bangalore</th>
<th>Hyderabad</th>
<th>Chennai</th>
<th>Pune</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population</td>
<td>37</td>
<td>19</td>
<td>27</td>
<td>16</td>
<td>99</td>
</tr>
<tr>
<td>Sampled organizations</td>
<td>12</td>
<td>7</td>
<td>9</td>
<td>5</td>
<td>33</td>
</tr>
<tr>
<td>Sampled employees</td>
<td>240</td>
<td>140</td>
<td>180</td>
<td>100</td>
<td>660</td>
</tr>
<tr>
<td>Sampled Managers</td>
<td>46</td>
<td>47</td>
<td>48</td>
<td>28</td>
<td>169</td>
</tr>
<tr>
<td>Sampled Employees</td>
<td>135</td>
<td>65</td>
<td>90</td>
<td>46</td>
<td>336</td>
</tr>
<tr>
<td>Total</td>
<td>181</td>
<td>112</td>
<td>138</td>
<td>74</td>
<td>505</td>
</tr>
</tbody>
</table>

The researcher had initially approached the organizations and took permission from the HR manager for data collection in the respective organizations through references and also sent e-mails to the Chief Human Resource Officers of the sample organizations detailing the objective of the study, method of data collection and significance of the study from managerial as well as academic perspectives. The organizations were requested permission to collect data from the chosen sample. Only thirty-three
organizations had given their consent to participate in this study. All the participating organizations requested the author not to reveal their identity anywhere in the reports generated out of this study. The organizations, which participated in this study, represented Information Technology sector.

B) Selecting the employees – The organizations that had given their consent to participate varied in terms of organization size, total number of years of operation, and management philosophy. The next step is to select the employees. The sampling strategy was to survey 20 employees chosen through stratified random sampling method from each of the organizations. It was decided to include the heads of the various functions in the organization under the senior category hence at least 5 from each of the organizations was the targeted sample representing this category. The employees were identified with the help of HR manager from among those who had a fairly long tenure in the organization and willing to participate in the study from the employees in the organization.

In each of the organizations, a list of projects was prepared. Then using a random-numbers table, employees were selected from the list to be included in the sample. Employees were given assurance that their decision to participate or not participate and their responses would have no impact on their employment. They were also assured of complete confidentiality and anonymity of their data.

In six other organizations, chosen respondents were sent communication on the purpose and procedures involved in filling the questionnaires. They were given twenty days time period to return the filled-in questionnaires to the respective HR coordinators. Later on the researcher collected the questionnaires from the HR.

In other organizations an e-mail communication was sent to the chosen employees and the researcher personally visited them in their workplace and assisted them in filling in the questionnaires. The operationalization of the instruments used to capture independent, and dependent variables are described in the following lines.

Data Analysis
Data was analyzed using descriptive statistics such as frequencies and percentages for analyzing the factual information regarding the awareness on competence management practice and the HR functions that are competence based or should be competence based and presented using graphs wherever found necessary.

The awareness was measured by using their responses on levels of implementing competence practices in the organization and who identifies competences for each job. To measure the opinion/perception of the employee on the competence management practice for managing the talent a four-point scale was used. They have been analyzed through factor analysis. A 4 point scale was used with a rating on a scale of 1-4 with 1 strongly agree, 2 agree, 3 disagree and 4 strongly disagree. The mean and standard deviation was calculated to check consistency in their perception. In addition, a factor analysis was done to resolve a large set of variables into factors. The data collected from the respondents was subjected to principal component, factor analysis by Varimax Rotation with Kaizer Normalization method by using the criterion that factors with Eigen value > 1.00 were retained. Loadings exceeding 0.5 were considered for determining factors. To avoid the crowding of factors, this measure was taken although the literature allows a loading of 0.33 to be the absolute minimum value to be interpreted. This criterion is being used more or less by way of convention (Vasanthi and Rayappan, 2006).

Before carrying out factor analysis, sampling adequacy has been measured by carrying two tests-Kaiser-Meyer – OIkin (KMO) and Bartlett’s Test of sphericity. In the KMO test, the statistic varies between 0 and 1. A value close to 1 indicates that the patterns of correlation are relatively compact and so factor analysis should yield distinct and reasonable factors. KMO measure - value greater than 0.5 should be acceptable. Furthermore values between 0.5 and 0.7 are mediocre, values between 0.7 and 0.8 are good, values between 0.8 and 0.9 are great and values between 0.9 and 1 are superb. Similarly, Bartletts Test of Sphericity should have significant value of less than 0.05. The above two tests have been carried out for the entire population.

To understand the enabling and disabling factors of talent management a 4 point scale was used with a rating on a scale of 1-4 with 1 strongly disagree, 2 disagree, 3 agree and
4 strongly agree. The mean and standard deviation was calculated to check consistency in their perception. In addition, a factor analysis was done to resolve a large set of variables into factors. The data collected from the respondents was subjected to principal component, factor analysis by Varimax Rotation with Kaizer Normalization method by using the criterion that factors with Eigen value > 1.00 were retained. Loadings exceeding 0.5 were considered for determining factors. Lastly, content analysis and interpretation of the various statistical tests are done to arrive at inferences and satisfy the objectives of the study.

**Limitations**

It is but natural for research studies to have limitations either in the fieldwork or the sample selection or other dimensions of the research work. There were many limitations firstly getting the HR permission for data collection was very difficult from the Information technology based organizations. Secondly, the information technology employees work in shifts and hence approaching them at one go was difficult. Thirdly, due to time bound projects employees could not fill the questionnaires and fourthly, the lack of awareness / interest on research with the employees was very difficult to get the questionnaires filled. Arriving at a conceptual framework was difficult more so in developing context like India where it is relatively a new phenomenon. Moreover the study is based on a limited sample covering only four cities in the country. Hence suggestions have to be made with caution as they apply to those designated regions. Almost all the stakeholders in the process have been included but the top management as policy makers and their views on the subject of study are not included in this study. *Above all*, absence of research culture among the subjects was a serious limitation. Repeated visits, calls and meeting them for data and the time frame of one year for data collection is evident enough for the absence of research culture in India. The study thus, conducted is presented in the following chapterization scheme.
Chapterization Scheme

The study has been organized into six chapters. The details are as follows.

**Chapter I** introduced the theoretical concepts of competencies, competence and talent management with specific reference to the Information sector enterprises of the country. The chapter also focused on the importance of human resources development in information sector enterprises in the era of globalization and the importance of talent and their management in enhancing and developing the capacities and competencies of the human resources.

**Chapter II** highlighted the literature survey made by the researcher from various sources, which include journals, books, websites, lectures, magazines, newspapers, etc.

**Chapter III** dealt with organizational profile of the sampled IT organizations wherein the focus was to provide a brief overview of the organizations.

**Chapter IV** dealt with research methodology adopted by the researcher wherein a conceptual framework was developed based on the literature survey. The chapter also provided the details of the study including research design, data collection, tools and techniques of data, data analysis, limitations, etc.

**Chapter V & VI** pertained to employees and senior managers data analysis, which included the tabular representation of the data, graphical representation of the data, cross tabulation of the data and finally the results of the factor analysis.

**Chapter VII** discussed the concluding observations and suggestions wherein some important dimensions of competence and talent management were highlighted.

The study was thus conducted in the sampled organizations, an overview of which is presented in the next chapter.