CHAPTER - IV

RESEARCH METHODOLOGY
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4.1 CONCEPT OF RESEARCH

Research in common parlance refers to a search for knowledge. Research is a scientific and systematic search for pertinent information on a specific topic. Research is a careful investigation or inquiry especially through search for new facts in any branch of knowledge. Redman and Mory define research as a “systematized effort to gain new knowledge”. Research comprises of defining and redefining problems, formulating hypothesis or suggested solutions, collecting, organizing and evaluating data; making deductions and reaching conclusions; and at last carefully testing the conclusions to determine whether they fit the formulating hypothesis.

Research is a structured enquiry that utilizes acceptable scientific methodology to solve problems and creates new knowledge that is generally applicable. Scientific methods consist of systematic observation, classification and interpretation of data. Although we engage in such process in our daily life, the difference between our casual day-to-day generalization and the conclusions usually recognized as scientific method lies in the degree of formality, rigorousness, verifiability and general validity of latter.

4.2 RESEARCH TYPE

The type of research that is adopted in this study is Descriptive in nature. Descriptive research is also called Statistical Research. The main goal of this type of research is to describe the data and characteristics about what is being studied. The idea behind this type of research is to study frequencies, averages, and other statistical calculations. Descriptive research is mainly done when a researcher wants to gain a better understanding of a topic. It is quantitative and uses surveys and panels and also the use of probability sampling. Descriptive research is the exploration of the existing certain phenomena. The details of the facts wont be known. The existing phenomena, facts are not known to the persons. So the present study undertaken by the researcher is descriptive in nature.
The research is initiated with the notion of understanding the succession planning process in IT companies and its impact on organizational performance.

4.3 RESEARCH INSTRUMENT

Structured questionnaires are based predominantly on closed questions, which produce data that can be analyzed quantitatively for patterns and trends. The questionnaire comprises with more of Likert scale pattern and apart from that of closed ended, dichotomous, multiple choice, rating and ranking questions.

A Likert item is simply a statement which the respondent is asked to evaluate according to any kind of subjective or objective criteria; generally the level of agreement or disagreement is measured. It is considered symmetric or "balanced" because there are equal amounts of positive and negative positions.

The format of a typical five-level Likert, is:

1. Strongly disagree
2. Disagree
3. Neither agree nor disagree
4. Agree
5. Strongly agree

Likert scaling is a bipolar scaling method, measuring either positive or negative response to a statement. Sometimes an even-point scale is used, where the middle option of "Neither agree nor disagree" is not available. This is sometimes called a "forced choice" method, since the neutral option is removed. The neutral option can be seen as an easy option to take when a respondent is unsure. It has been shown that when comparing between a 4-point and a 5-point Likert scale, where the former has the neutral option unavailable, the overall difference in the response is negligible.

4.4 SAMPLING METHODOLOGY

Sampling is concerned with the selection of a subset of individuals from within a population to estimate characteristics of the whole population. A population element is the individual participant or object on which the measurement is taken. It is the unit of study. The three main advantages of sampling are that the cost is lower,
data collection is faster and since the data set is smaller it is possible to ensure homogeneity and to improve the accuracy and quality of the data.

The sampling process comprises several stages:

- Defining the population of concern
- Specifying a sampling frame, a set of items or events possible to measure
- Specifying a sampling method for selecting items or events from the frame
- Determining the sample size
- Implementing the sampling plan
- Sampling and data collecting

4.4.1 Sampling unit

Select leading IT companies in Bangalore (Assocham). The companies selected are like,

1. Tata Consultancy Services Ltd.
2. Infosys Technologies Ltd.
3. Wipro Technologies Ltd.
5. HCL Technologies Ltd.

4.4.2 Sample size and population

Population size is only likely to be a factor when the researchers work with a relatively small and known group of people (e.g., the members of an association). Here the population size is 9,900 employees forming part of select leading five IT companies in Bangalore as shown in Table 7.

<table>
<thead>
<tr>
<th>S. No</th>
<th>Company Name</th>
<th>No. of Employees</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Tata Consultancy Services Ltd</td>
<td>2002</td>
</tr>
<tr>
<td>2</td>
<td>Infosys Technologies Ltd</td>
<td>1993</td>
</tr>
<tr>
<td>3</td>
<td>Wipro Technologies Ltd</td>
<td>1980</td>
</tr>
<tr>
<td>4</td>
<td>Mahindra Satyam</td>
<td>1972</td>
</tr>
<tr>
<td>5</td>
<td>HCL Technologies Ltd</td>
<td>1953</td>
</tr>
<tr>
<td></td>
<td><strong>TOTAL</strong></td>
<td><strong>9,900</strong></td>
</tr>
</tbody>
</table>

Source: Through HR Managers of select IT companies

175
The employees are classified based on their designation as shown in Table 8. Sample size is determined by taking 5% of total population size. The total sample size has come to 495 software professionals. These employees are taken on the basis of simple random sampling method.

<table>
<thead>
<tr>
<th>Sl.No</th>
<th>Designation</th>
<th>No. of Employees</th>
<th>Sampling</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Software Engineers</td>
<td>5800</td>
<td>290</td>
</tr>
<tr>
<td>2</td>
<td>Senior Software Engineers</td>
<td>1540</td>
<td>77</td>
</tr>
<tr>
<td>3</td>
<td>Project Leaders</td>
<td>1500</td>
<td>75</td>
</tr>
<tr>
<td>4</td>
<td>Project Managers</td>
<td>1060</td>
<td>53</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>9900</td>
<td>495</td>
</tr>
</tbody>
</table>

Source: Through survey questionnaire.

4.4.3 Sampling Technique

The sampling technique used for this research is simple random sampling. In a simple random sample of a given size, all such subsets of the frame are given an equal probability. Each element of the frame thus has an equal probability of selection: the frame is not subdivided or partitioned. Furthermore, any given pair of elements has the same chance of selection as any other such pair. This minimises bias and simplifies analysis of results. In particular, the variance between individual results within the sample is a good indicator of variance in the overall population, which makes it relatively easy to estimate the accuracy of results.

4.5 DATA COLLECTION

Data collection is an important aspect of research study. Inaccurate data collection can impact results of a study and ultimately lead to inaccurate results. Data collection is a term used to describe a process of preparing and collecting data, for example, as part of a process improvement or similar project. The purpose of data collection is to obtain information to keep on record, to make decisions about important issues, to pass information on to others. Primarily, data are collected to provide information regarding a specific topic. Data collection usually takes place early on in an improvement project, and is often formalised through a data collection plan which often contains the following activity.
1. Pre collection activity: agree on goals, target data, definitions, methods
2. Collection: data collection
3. Present Findings: usually involves some form of sorting analysis and/or presentation.

Prior to any data collection, pre-collection activity is one of the most crucial steps in the process. It is often discovered too late that the value of their interview information is discounted as a consequence of poor sampling of both questions and informants and poor elicitation techniques. After pre-collection activity is fully completed, data collection in the field, whether by interviewing or other methods, can be carried out in a structured, systematic and scientific way. A formal data collection process is necessary as it ensures that data gathered are both defined and accurate and that subsequent decisions based on arguments embodied in the findings are valid. The process provides both a baseline from which to measure from and in certain cases a target on what to improve.

4.5.1 Primary data

Primary research consists of the collection of original primary data. It is often undertaken after the researcher has gained some insight into the issue by reviewing secondary research or by analyzing previously collected primary data. It can be accomplished through various methods, including questionnaires and telephone interviews in market research, or experiments and direct observations in the physical sciences, amongst others. The term primary research is widely used in academic research, market research and competitive intelligence.

Advantages:

1. Addresses specific research issues as the researcher controls the search design to fit their needs
2. Primary research enables the marketer to focus on specific subjects, it also enables the researcher to have a higher control over how the information is collected. Taking this into account, the researcher can decide on such requirements as size of project, time frame and goal.
4.5.2 Secondary data

Secondary data is the data that have been already collected by and readily available from other sources. Such data are cheaper and more quickly obtainable than the primary data and also may be available when primary data cannot be obtained at all.

Advantages of Secondary data:

1. It is economical. It saves efforts and expenses.
2. It is time saving.
3. It helps to make primary data collection more specific since with the help of secondary data, we are able to make out what are the gaps and deficiencies and what additional information needs to be collected.
4. It helps to improve the understanding of the problem.
5. It provides a basis for comparison for the data that is collected by the researcher.

4.6 PILOT SURVEY

Pilot Survey is a preliminary piece of research conducted before a complete survey to test the effectiveness of the research methodology. This should be completed before the final survey commences. The intention is to alert the surveyor to any difficulties that were not anticipated at the survey proposal stage. Pilot surveys are undertaken after pre-tests. The questionnaire that was constructed had been pre-tested with the pilot survey with 10% of the sample size and necessary changes like familiarity of succession planning and demographic data are elaborated and carried out the survey so as to make the questionnaire easy to understand and follow and to be respondent friendly.

Pilot testing involves conducting a preliminary test of data collection tools and procedures to identify and eliminate problems, allowing programs to make corrective changes or adjustments before actually collecting data from the target population. This effective practice describes advantages of pilot testing.

A pilot test usually involves simulating the actual data collection process on a small scale to get feedback on whether or not the instruments are likely to work as expected in a "real world" situation. A typical pilot test involves administering
instruments to a small group of individuals that has similar characteristics to the target population and in a manner that simulates how data will be collected when the instruments are administered to the target population.

Pilot testing gives programs an opportunity to make revisions to instruments and data collection procedures to ensure that appropriate questions are being asked, the right data will be collected and the data collection methods will work. Programs that neglect pilot testing run the risk of collecting useless data.

Pilot testing provides an opportunity to detect and remedy a wide range of potential problems with an instrument. These problems may include:

1. Questions that respondents don't understand
2. Ambiguous questions
3. Questions that combine two or more issues in a single question (double-barreled questions)
4. Questions that make respondents uncomfortable

Pilot testing can also help programs identify ways to improve how an instrument is administered. For example, if respondents show fatigue while completing the instrument, then the program should look for ways to shorten the instrument. If respondents are confused about how to return the completed instrument, then the program needs to clarify instructions and simplify this process.

4.7 RELIABILITY AND VALIDITY TEST

Reliability is defined as the extent to which a questionnaire, test, observation or any measurement procedure produces the same results on repeated trials. There are three aspects of reliability, namely: equivalence, stability and internal consistency (homogeneity). Equivalence is measured through a parallel forms procedure in which one administers alternative forms of the same measure to either the same group or different group of respondents. The second aspect of reliability, stability, is said to occur when the same or similar scores are obtained with repeated testing with the same group of respondents. The third and last aspect of reliability is internal consistency (or homogeneity). Internal consistency concerns the extent to which items on the test or instrument are measuring the same thing.
Validity is defined as the extent to which the instrument measures what it purports to measure. The survey questionnaire is tested for its reliability and validity test and arrived at 90.0% accuracy, which is very much in the acceptable range and to proceed for the final survey of the respondents. Cronbach's alpha statistical measure is used for the testing the questionnaire.

4.8 DATA PROCESSING AND ANALYSIS

The purpose of data analysis is to identify whether research assumptions were correct or not, and to highlight possible new views on the problem under study. The ultimate purpose of analysis is to answer the research questions outlined in the objectives with the collected data. The data preparation is the important job after the data is collected from the respondents. Data preparation includes editing, coding and data entry and these are the activities that ensure the accuracy of the data.

4.8.1 Editing

Editing of data is a process of examining the collected raw data (especially in surveys) to detect errors and omissions and to correct these when possible. As a matter of fact, editing involves a careful scrutiny of the completed questionnaires and/or schedules. Editing is done to assure data are accurate, consistent with other facts gathered, uniformly entered, as complete as possible and have been well arranged to facilitate coding and tabulation.

However if necessary care is taken while collecting data there is a slight chance of these errors occurring. The questionnaires with incomplete, inaccurate and inconsistent data are rejected.

4.8.2 Coding

Coding refers to the process of assigning numerals or other symbols to answers so that responses can be put into a limited number of categories and classes. Such classes should be appropriate to the research problem under consideration. They must also possess the characteristic of exhaustiveness (i.e., there must be a class for every data item) and also that mutual exclusivity which means that a specific answer can be placed in one and only cell in a given category set. Another rule to be observed is that unidimensionality which means that every class is defined in terms of only one concept.
4.8.3 Data entry

Conversion of data and information gathered by primary methods to a medium for viewing and manipulation is called data entry. Data can be entered directly using SPSS data editor window. The data can also be edited/changed in the data editor window. To change the value in any cell, bring the cursor to the particular cell, enter the new value and press enter. New variables can also be added and existing variables can be deleted in the data editor window. Otherwise a Microsoft Excel spreadsheet is used and data is entered into it. Each row is a record and each column is a variable measured in the survey. After entering all questionnaires data into the spreadsheet, it is imported into SPSS. Now applying tools of SPSS on the data, the frequency tables and cross-tabulations are prepared.

4.9 STATISTICAL TOOLS

Data collected from the survey are analyzed with appropriate statistical tools and are represented in the form of tables and graphs as and when required. Questionnaires are arranged logically, logical to the respondent and proper care has been taken to avoid vagueness in responses and at the same time enabling the respondents to answer the questions easily and quickly with the time available at their disposal. The tools to be used are like weighted average, Pearson chi-square test, Regression analysis and Kendall’s test to arrive at accuracy of results.

4.10 PERIOD OF STUDY

The time taken for the study is for a period of 60 months from August 2007 to August 2012. The period includes time spend for review of literature, identifying the research problem, data collection, analysis and interpretation and report writing.

4.11 LIMITATIONS OF THE RESEARCH

1. The study is restricted to the select leading information technology companies in Bangalore city only.

2. The time and cost is one of the major constraints in restricting the sample size is 495 respondents who are working in the information technology companies in Bangalore.

3. Utmost care is taken to arrive at the authenticity of the data gathered in spite of that the research shall have its own bias of answers for the queries raised.
4. The respondents are not willing to reveal their name and organization where they observed confidentiality for the research purpose.

5. Besides exploring and evaluating the Succession planning and management (SP&M) in IT companies, this study applied the proposed conceptual model and its associated survey instrument. However, the results of this study do not guarantee a completeness of the proposed model and its survey instrument. The researcher foresees room for improvement of both the model and the survey instrument for the benefit of future inquiries.

4.12 CHAPTERIZATION FRAMEWORK

Chapter One deals with Introduction, Concept of Succession Planning, traditional and modern perspective of Succession Planning, Types of Succession Planning, various Models of Succession Planning, Succession Planning and its impact. It also deals with Evolution of software industry in India, Indian Information Technology Sector, Succession Planning in Indian IT sector, Succession Planning in different sectors, Problems with Succession Planning, Succession planning strategies, Trends in Succession planning & Management, Growth of the Succession planning as a field, the consequence and occurrence of Succession planning, the resignations, retirements, and succession planning, Succession planning and management versus Organizational culture, Top leadership commitment to Succession processes, Assessment of Organizational Leadership needs, Talent management strategy in Succession processes, Application of succession plan charts, Identification and development of high potentials, Prudent replacement of the outgoing leaders, Internal grooming versus external sourcing, CEO succession and the role of governing boards, Succession processes versus internal organizational politics, Succession management approaches, Succession planning and discrimination, Status of succession planning in IT companies, Obstacles to succession planning, Implications, Organization Development & Succession planning and SME (Small and Medium Enterprises) & succession planning.

Chapter Two includes the brief profile of the select leading IT companies.

Chapter Three deals with the Review of Literature, Problem Statement, Need for the study, Scope of the study, and Objectives of the study and Research hypothesis.
Chapter Four deals with Research Methodology concept and the type of research, Research Instrument, Sampling Methodology, Sample Population, Sample size, Sampling technique, Source of data-Primary data and Secondary data. The details of Pilot survey, and Limitations of the research.

Chapter Five deals with Analysis and interpretation of data so collected through the questionnaire. The data are tabulated and percentage analysis is highlighted. Statistical analysis using Weighted Average, Pearson chi-square test, Regression and Kendal’s test are used for arriving at the appropriate results.

Chapter Six deals with results and discussion in the form of summary of findings-specific and general, and also statistical findings are incorporated for accuracy and reliability of the results, which forms the base to conclude and suggest towards betterment and points related to the scope for future study are also projected, which shall pave the way in identifying the succession planning practices and its impact on organization performance.