Chapter 4

Research Methodology
RESEARCH METHODOLOGY

Research Gap

Having done a thorough literature review on gender diversity practices in IT organisations, it has been observed that there exists a dearth of genuine reasoning towards gender diversity by the top management & Sr. HR staff of these IT organisations, particularly in India. This study aims at bridging this gap.

Objectives of the Study

Following objectives have been formulated in the light of the above research gap:

1. To study the factors affecting managing gender diversity.
2. To study the effect of gender on managing gender diversity.
3. To study the effect of gender on manager’s support, guidance and fair treatment dimension of managing gender diversity
4. To study the effect of gender on role clarity, motivation and feedback dimension of managing gender diversity
5. To study the effect of gender on employment and growth opportunity dimension of managing gender diversity
6. To study the effect of age on managing gender diversity.
7. To study the effect of education on managing gender diversity
8. To study the effect of age, Education and their interaction on managing gender diversity.
9. To study the effect of age, education and their interaction on manager’s support, guidance and fair treatment dimension of managing gender diversity.
10. To study the effect of age, education and their interaction on manager’s support, guidance and fair treatment dimension of managing gender diversity.
11. To study the effect of age, education and their interaction on manager’s support, guidance and fair treatment dimension of managing gender diversity.

The present investigation is based on an exploratory study of multifactor experiments. Age, Gender & Education are the independent variables. Diversity and its three dimensions – manager’s support, guidance and fair treatment are the dependent variables.
The study was undertaken by administering questionnaire for collecting data from people working in IT organisations in India.

**Research Methodology**

**Kassim (2001)** A paradigm is described as a holistic approach underlying a research methodology. **Trochim (1998)** reflects the philosophy of knowledge or how we reach the knowledge while methodology focuses on the practicalities of how we come to know. **Hunt (1990; 1991); Perry et al. (1998); Trochim (1998).** In essence, the paradigm that is fundamental to this study can be categorized as post-positivist, or what is also known as realism.

**Perry et al. (1998)** mentioned that realism deals with an external reality which cannot be known perfectly, that is in reality no one can claim to have perfect knowledge of what contributes to consumer satisfaction, loyalty or retention.

This study proposes that, survey method would be applied and for that, data was collected through structured questionnaire from various Sr. Manager and HR professionals of various IT organisations in India. The detail of the IT organisations and respondents taken for the study are described in subsequent portion of this chapter.

Drawn from literature pertaining to the subjects under study, several hypotheses are proposed and tested using the various statistical tools, as to compare the various gender diversity programs and practices of various IT organisations in India. For this research, survey method was chosen to give emphasize on large number of respondents.

**Research Design**

Subsequent to establishing a paradigm, the development of an appropriate research design is pursued. **Burns & Bush (2002)** a research design, which is a function of the research objectives, is defined as “set of advance decisions that makes up the master plan specifying the methods and procedures for collecting and analyzing the needed information”. An appropriate research design is essential as it determines the type of data, data collection technique, the sampling methodology, the schedule and the budget.
(Hair et al., 2003). Primarily, it helps to align the planned methodology to the research problems.

Churchill & Iacobucci (2004); Malhotra (1999) states that there are many frameworks of research designs and they can be classified into three: traditional categories: exploratory, descriptive and causal (Aaker et al., 2000; Burns & Bush 2002; Churchill & Iacobucci, 2004; Hair et al., 2003). These research designs can be used together but, it is not common that researchers utilize multiple research designs (Burns & Bush, 2002). That is, a researcher may begin with an exploratory study which will provide essential background information needed preceding a descriptive study. In turn, information obtained from a descriptive study may help the researcher design a causal experiment.

Research Type

Descriptive Research:

Having obtained some primary knowledge of the subject matter by an exploratory study, descriptive research has been conducted. Contrary to an exploratory research, a descriptive study is more rigid, pre-planned and structured, and is typically based on a large sample (Churchill & Iacobucci, 2004; Hair et al., 2003; Malhotra, 1999). The purpose of descriptive research is to describe specific characteristics of existing phenomena. In this study it focuses on various Gender Diversity Programs and practices of various IT organisations in India. In addition, it helps provide data that allows for identifying relationships or associations between two variables (Aaker et al., 2000).

As many researchers have noted, descriptive research designs are for the most part quantitative in nature (Burns & Bush, 2002; Churchill & Iacobucci, 2004; Hair et al. 2003; Parasuraman, 1991).

Burns & Bush (2002); Malhotra (1999) pointed out that there are two basic techniques of descriptive research: cross-sectional and longitudinal. Cross-sectional studies collect information from a given sample of the population at only one point in time, while the latter deals with the same sample units of population over a period of time. Hair et al. (2003) defines cross-sectional study as a sample survey, that is selected individuals are
asked to respond to a set of standardized and structured questions about what they think, feel and do.

For the purpose of this study, a cross sectional study was the appropriate technique as opposed to a longitudinal study due to time constraints, and furthermore, this study does not attempt to examine trends.

**SAMPLING METHOD**

Sampling is the process of selecting units (e.g., people, organizations) from a population of interest so that by studying the sample we may fairly generalize our results back to the population from which they were chosen. Let's begin by covering some of the key terms in sampling like "population" and "sampling frame." Then, because some types of sampling rely upon quantitative models, we'll talk about some of the statistical terms used in sampling.

(http://www.socialresearchmethods.net/kb/sampling.php)

**SAMPLE SIZE**

The size of the sample depends on the type of information required from the survey, and the cost involved. This means calculating beforehand the degree of accuracy required in the results of the survey. Some attributes may be more critical than others, and the degree of precision over these should be known. Careful thought should be given to time-constraint. Cost and accuracy are closely linked with the time taken to complete the survey, and to some extent there is bound to be conflict. Considering all these factors, the sample size was taken as 450 of which 392 were found to be suitable for use. 58 were rejected due to lack of complete data.

Primary information is collected by the administration of structured questionnaires.

**DATA COLLECTION**

The collection of information is based on the primary and secondary data

**Primary Data :** Primary data is collected through online questionnaire survey with HR department personnel or with those at the managerial level. Primary data was also collected through the administration of structured questionnaires to the employees of
various IT organisations in India. Online questionnaires were distributed to various employees of which approx. 392 were found to be suitable for the current study.

**Secondary Data**: Secondary information is collected through various books and case studies found in research related sites and other company related sites in internet. In addition to this, various journals, magazines, article, books, published and unpublished documents were considered during research work.

**Data Analysis**

The tabulated scores were statistically treated to derive the significant results. The statistical tools of ANOVA and “t” test were used.

**t- test**

\[
\text{Standard Deviation} = \sqrt{\frac{\sum X^2 - M^2}{n}}
\]

\[
SD = \text{Standard Deviation on various cells}
\]

\[
M = \text{Mean of various cells}
\]

\[
N = \text{number of respondents in various cell}
\]

Combined Standard deviation (SDC)

\[
SDC = \sqrt{\sum (X_1 - X_1) + \sum (X_2 - X_2)} \div \frac{n_1 + n_2 - 2}{n_1 n_2}
\]

Standard Error (SE) = SDC \(\sqrt{\frac{n_1 + n_2}{n_1 n_2}}\)

SDC = Standard deviation of two cell

SE = Standard error of two cell

\[
t = \frac{M_1 - M_2}{SE}
\]

\[M_1 \text{ and } M_2 = \text{mean of two cell}\]
STATISTICAL TOOLS

The statistical tool which is administered includes Interview Questionnaire (set of questions), Factor Analysis, t Test, Observational Methods. Appropriate Hypothesis is used using these tests. Also Bar chart is used to depict the data. For accurate statistical analysis of the data, advanced statistical analysis software SPSS is used.

Validity and Reliability

The statements of Gender Diversity practices have been generated from an extensive review of academic and practitioner’s literature. Content validity of the scale was evaluated by the thesis guide as well as a couple Sr. Management and HR professionals of few IT organisations. Further, the questionnaire was pre-tested with a set of 30 HR professional’s as similar to those targeted to participate in the research.

The pre-testing results indicated that the questionnaire was clearly understandable and unambiguous leading to the conclusion that the questionnaire had adequate content validity. Most of the respondents in the pre-testing stage suggested that it would be better if labels carrying appropriate meanings are attached to each of the pointers in the scale. Based on that suggestion, the scale labels were re-designed as “strongly agree (5)”, “agree (4)”, “slightly disagree (3)”, “disagree (2)”, “neutral (1)” so as to suggest roughly equal intervals between scale pointers, which were immediately accepted.

Reliability was computed using Cronbach’s Coefficient Alpha for the entire set of 33 questions and found to be 0.933. It shows that the internal consistency is high.

Geographical Region

For the present study the data was collected through questionnaire from over 450+ individuals working in various IT organisations across India either in the HR department or at the managerial level.

Hypothesis of the Study:

The study seeks to identify the dearth of genuine reasoning towards gender diversity by the top management & Sr. HR staff of these IT organisations and also to identify HR
policies and to recommend the same to IT companies & Other Industries in India Inc. to properly manage their gender diversity programs and ratio.

The Hypothesis were formulated in synchronization with the purpose and objectives of the study. Moreover the hypothesis covered all the dimensions of gender diversity that were being considered in the study. The set of hypothesis were being formulated, cross-examined and tested to draw inferences and conclusion about the study.

Below mentioned hypotheses are formulated to know the true facts:

\( H_{01} : \) There is no significant effect of gender on managing gender diversity.

\( H_{02} : \) There is no significant effect of gender on manager’s support, guidance and fair treatment dimension of managing gender diversity.

\( H_{03} : \) There is no significant effect of gender on role clarity, motivation and feedback dimension of managing gender diversity.

\( H_{04} : \) There is no significant effect of gender on employment and growth opportunity dimension of managing gender diversity.

\( H_{05} : \) There is no significant effect of age on managing gender diversity.

\( H_{06} : \) There is no significant effect of education on managing gender diversity.

\( H_{07} : \) There is no significant effect of age, education and their interaction on managing gender diversity.

\( H_{08} : \) There is no significant effect of age on manager’s support, guidance and fair treatment dimension of managing gender diversity.

\( H_{09} : \) There is no significant effect of education on manager’s support, guidance and fair treatment dimension of managing gender diversity.
H₁₀ : There is no significant effect of age, education and their interaction on manager’s support, guidance and fair treatment dimension of managing gender diversity.

H₁₁ : There is no significant effect of age on role clarity, motivation and feedback dimension of managing gender diversity.

H₁₂ : There is no significant effect of education on role clarity, motivation and feedback dimension of managing gender diversity.

H₁₃ : There is no significant effect of age, education and their interaction on role clarity, motivation and feedback dimension of managing gender diversity.

H₁₄ : There is no significant effect of age on employment and growth opportunity dimension of managing gender diversity.

H₁₅ : There is no significant effect of education on employment and growth opportunity dimension of managing gender diversity.

H₁₆ : There is no significant effect of age, education and their interaction on employment and growth opportunity dimension of managing gender diversity.

**Statistical Tools Used**

Advanced statistical tools like t-test, factor analysis and descriptive statistics are used for the analysis of data and testing of hypotheses. For accurate statistical analysis of the data, advanced statistical analysis software SPSS is used.