

CHAPTER 3

DELPHI METHOD

3.1 INTRODUCTION

Research methodology is the systematic way to solve the research problem. In this study, qualitative and quantitative aspects are discussed. The qualitative research comprises of comprehensive literature study in which content, objects and subject terms were identified for inclusion a retention factor and the development of the questionnaire.

The discussions on quantitative aspects include a population to test the efficiency of the questionnaire. High technology employees in an IT/ITES sector organisation are used to determine whether the final questionnaire must be adjusted or not. The top retention factors that induce organisational commitment are identified. This is significant in any research issue because it assures authority and authenticity of the research results.

3.2 JUSTIFICATION OF THREE PHASED DELPHI APPROACH

This chapter explains the overall methodology used to collect the data to address the research issues of this three phased study. The objective of this study was to investigate and determine the current Human Resource practices on the retention of Information Technology employees in Bangalore, Karnataka state, Indian organizations. In order to achieve this aim, this study was divided in three phases.

3.2.1 The Delphi Technique

The Delphi technique is a group process used to survey and collect the opinion of the experts on a particular subject. It was originally developed in the year 1950s by the RAND Corporation in Santa Monica. Delphi is a structured communication technique, originally developed as a systematic interactive forecasting method which relies on the collective intelligence of a panel of experts.

According to Linstone (1975), “Delphi is a method for structuring a group communication process so that the process is effective in allowing a group of individuals as a whole, to deal with a complex problem”.

Lynn Stuter (1996) has observed “The Delphi technique is based on the Hegelian principle of achieving ‘Oneness of Mind’ through a three step process of thesis, anti-thesis, all present their opinion or views on a given subject, establishing views and opposing views.

The Delphi Technique is applied usually in three or more stages seeking opinion of the experts, through questionnaire without revealing their individual identity. The first round of questionnaire is designed to focus on problems, opportunities, solutions or forecasts by seeking response of experts to some open ended questions, in each subsequent stage, a questionnaire is developed based on the results of the previous questionnaire. The process stops when the research questions are analyzed and suggestion were given.

Skutsch & Hall (1973) identified the Delphi technique is a method for gaining judgment on complex matters where precise information is unavailable. Delphi technique has been widely used all over the world for interactive decision-making, e-democracy as well as in the area of social policy research and public health.

3.2.2 Use of Delphi Study in the Current Research Work

The researcher had observed Information Technology being new area it did not have enough grounding in India. The multinationals and global organizations of today are notorious for their high attrition rates. Hence retaining employees has become one of the chief tasks of modern Human Resource Managers.

Human Resource Managers feel proud if they are successful at retaining employees for over a year, to work for companies in which most of the employees are over a year old.

As the **first stage** of doctoral research in this area, therefore the researcher attempted to conduct some initial investigations in the form of experience survey, literature review and pilot studies. Discussions with knowledgeable individuals, who were willing to share their ideas and experiences about important issues/ aspects of the research subject in the form of an experience survey and small surveys conducted in the form of Pilot studies in advance of a major investigation to identify issues of problem in the organization of intended doctoral research study were considered highly desirable.

Cooper & Schindler (2009) While publishing data and literature are considered valuable for any research study, it is often recognized that only a fraction of the existing knowledge in any field is put in to writing and hence an experience survey along with a comprehensive literature review was considered necessary in order to take a more complete view of the research problem.

In **second stage** the researcher conducted a Delphi study to gather the considered views of some known experts in the field of study. The output

of first and second stages was then used for the design and documentation of subsequent stages of the research study.

The Delphi study was considered suitable for this research work as there was incomplete knowledge about the research problem. The aforesaid method largely facilitated improving understanding of the research problem, research opportunities and possible solutions to research questions.

The study was conducted in three rounds (DS1, DS2, DS3) seeking opinion of the experts through questionnaire without revealing their individual identity. The first round of Delphi questionnaire for this research study consisted of ten open ended questions covering all aspects of research problem. The objective of the first round questionnaire was to conduct a brain storming exercise and generate as many ideas and opinion of the experts as possible on every issue. The time allocated for the first round was 30 days.

All the experts who participated in the first round were also invited to participate in the next two rounds. Additional experts were also chosen for the second round. The responses that were mentioned by the experts in the first round formed the basis of the questionnaire for the second round. The Second round had sixteen Linkert Scale questions in carrier development practice factors, Ten in Human Resource influencing factor and Ten in Organisational factor. The questionnaires developed in each round were first subjected to Pilot testing before being administered to the experts.

In the second round consensus was reached in Thirty six issues presented in the questionnaire. All the participants of the second round were invited to participate in the third and final round. A questionnaire, with feedback on the second round results for each item, was presented to third – round participants.

In accordance with the Delphi methodology, experts were asked to rerate their responses for objects on which consensus was reached at the end of the second round. Objects on which consensus was reached in the second round were excluded, resulting in a third round questionnaire of only three major issues, finally the consensus was reached.

3.2.3 Experts Selection for the Delphi Study

Selecting appropriate experts is the most important step in the entire Delphi process because it directly affects the quality of the result. Since the Delphi techniques focuses on eliciting expert opinion over a short period of time, the selection of Delphi experts is generally dependent upon the disciplinary areas of expertise required by the specific issue.

For the current Delphi study twenty experts were carefully selected based on their job knowledge, experience and wisdom. There were eight professionals in the panel experts, were working in the Reputed Multinational Companies in Bangalore. Twelve other members of the panel were CEO cum HR Managers of various organizations.

3.2.4 Panel Selection

Dalkey & Helmer 1963: Delbecq & Ven (1971) the success of a study is largely dependent on the quality of the participants reported specific criteria for the selection of panel experts.

1. The first is to the expert's exhibit a high degree of knowledge of experience in the subject matter.
2. Another is that they exhibit 'representativeness' of the profession, so that their suggestions may be adaptable or transferable to the population.

3. Other experts like, HR policy makers, HR consultants, extensive theoretical knowledge, experience in the field of Human Resource Management both in the industry and academia and advanced degree in Management or a closely related field.

The Potential participants for this study were identified through their expertise in the areas of Human Resource Management in the Information Technology. They included Academics, Human Resource Practitioners and Industrial Psychologists.

The nomination of people, who would be appropriate 'experts' for this study, was based on the following general criteria. Initially a personal letter was sent to each of the nominees. The letter invited them to participate in a three round Delphi study. In addition, the letter included an explanation of the study and provided an estimate of the time commitment for participation. In the introductory letter, nominees were informed that participation was voluntary and confidential and the three rounds of responses would be required.

Follow –up telephone calls were made and letters were sent to non – respondents after two weeks. Nominees were advised that each round of the study would require thirty minutes and that data collection would occur over a two month time period.

3.2.4.1 Academics

1. Participants must have a minimum of ten years of teaching experience in Management at Bangalore University.
2. Evidence of fairly extensive publications in Management.
3. Research interest in areas of Human Resource Management.

3.2.4.2 Human resource practitioners

1. Currently working as an HR practitioner in an Information Technology sector.
2. Minimum Five years working experience in Human Resource Management.

3.2.4.3 Industrial psychologists

1. Minimum of Five years of experience as an Industrial Psychologist.
2. Minimum three years of experience as a practitioner.

From the initial pool of nominations thirty respondents were formally invited to participate and of these twenty agreed to complete the required three rounds of the survey.

3.2.4.4 Panel size

Rowe & Wright (1999) as this study is a preliminary investigation, the small number of participants was deemed by the researcher to be acceptable for determining a meaningful outcome. The panel size of twenty fits within the guidelines recommended for Delphi studies. Helmer & Dalkey (1953) used a panel of seven experts in their original Delphi method experiment. Helmer (1983) Linstone & Turoff (1975) suggests a panel size of anywhere from ten to fifty participants.

The panel nominees were asked to express their expert opinions and judgments on the current development of retention management in Information Technology and to identify the key of HR factors influencing retention in the workplace.

3.2.4.5 Research methodology

For this research, the Delphi Technique was chosen as a suitable preliminary research method because the results will offer a better – informed look at the current and potential status of retention management carried out by Information Technology sector, Based on the attitudes and beliefs of a carefully selected group of expert respondents, the expected prospects for reform in the areas of retention management and Human Resource practice will also be captured.

A substantial literature review has identified some key of HR practices that influence retention. However, there is a little consensus among researchers with regard to precisely which HRM practice should be included.

Becker & Gerhart (1996); Cappelli (1999) due to these glaring discrepancies in the prescriptions made by different scholars in this area, the results of this Delphi study will be relevant and provide clarification as well as substantially enhance the literature review on retention. In addition, it will expose the current retention management practice adopted by IT organizations. Previous studies using such as approach have typically used thirty experts based on the finding that larger groups create few additional ideas and limit the in- depth exploration of the ones generated.

Rowe & Wright 1999; van De Ven & Delbecq (1974) However for this study, a small sample size was deemed acceptable due to the preliminary exploratory role of the Delphi technique in the first stage of the research. It was, however critical to secure the participation of the right kinds of experts, who understand the issues, have a vision and represent a substantial variety of viewpoints.

In the second round, the responses suggested in the first round were presented to each respondent in the form of survey statements and accompanying response selections, each selection serving to complete the initial statement. The respondents were asked to indicate the degree to which they agreed with each completed statement on 1 to 5 with 1 indicating strongly disagrees and 5 strongly agree (Linkert scale).

The responses that received the greatest support for each of the questions were fed back to the experts during the round three. In the third and final round, the respondents were asked to rank the responses that accompanied each statement according to their perceived importance with 1 being strongly disagree and 5 strongly agree. This was done to help the respondents further refine their opinions and assist in achieving consensus.

This preliminary questionnaire was generated from a review of retention management literature. Cappelli 2000; Huselid 1995; Kraut & Korman 1999; Lepak and snell 1999) subsequent questionnaires (Round 2 and 3) were modified and focused, based upon responses to the first questionnaire was used to priorities research areas and to rank specific research issues within these areas.

3.2.4.6 Delphi data collection and analysis

Data collection analysis were based on Schmidt's method (1997), in which the Delphi survey process is divided in to three rounds The preliminary instrument (**Round 1**) was developed following an extensive review of the literature of the relationship between retention and Human Resource Policies. The questionnaire was designed and formulated based on the four key research questions.

The questionnaire consisted of two sections (A and B). In section A, the style of questions chosen was open –ended in order to enable to respondents to express their responses in any way they choose. This open ended style was considered suitable as it provided minimum direction to respondents. In section B of the instrument, participants were asked to provide demographic data (gender, age, experience and professional status).

This type of question removes the need for the researcher to pre – judge appropriate categories for response, allowing groupings of similar responses to be constructed if necessary after the data have been collected.

Two major changes were made to the (**Round 2**) instrument. First, the general demographics and open-ended questions were omitted. Second responses contributed by the participants during Round I were imported verbatim under the appropriate categories on the instrument. In round 2, Participants were instructed to review the comments from round 1 and to rate each comment (1-5), bearing it in mind that the researcher sought validation based on the objects most critical to the retention process.

In the **third round** and final round survey, the experts were asked to strongly disagree or strongly agree with the final wording of an item as well as provide additional comment under the specified concept areas. This procedure stopped a three questionnaires or round which seems fairly typical of many studies. Consensus or trend towards consensus was documented at the conclusion of Round 3.

The content analysis Denzin & Lincoln (1998) was conducted to examine panelists' responses to open – ended questions regarding HR factors that influence retention; HR factors summarized panelists' ratings of objects.

Wright, Lawrence & Collopy (1996) means and standard deviations were obtained for each item and each category following Round 1 and 2.

During the last decade, employee retention has become a serious and perplexing problem for all types of organization. Managing retention and keeping the turnover rate below target and industry norms is, one of the most challenging issues facing business. From all indications, the issue will compound in the future, even as economic condition changes. Employee retention will continue to be an important issue for most job groups in the first decade of the 21st century.

3.3 RESEARCH DESIGN

The present study is designed as a descriptive research design based on primary data and secondary data. Descriptive research includes surveys and facts finding enquiries of different kinds. The major purpose here is the description of the state of affairs as it exists at present. In social science and business research the term *ex post- facto* research is used for descriptive research studies. This includes attempts by researchers to discover causes even when they cannot control the variables. The methods utilized in this research are survey methods of all kinds, including comparative and correlation methods.

3.4 PILOT STUDY

Dane (1990) has stated that a Pilot study is “an abbreviated version of research project in which the researcher practices or tests procedures to be used in the subsequent full scale project”. Since the measures of the research are either new or reconfigured from their original sources, a pilot study would ensure psychometric cleaning of the objects, So that only appropriate objects chosen through proper analysis would be used. A systematic Pilot study was

carried out on 50 samples who didn't participate in the final research. The research instrument tested to ascertain the reliability and validity of the instrument used. Recommendations found to be valid were incorporated into the survey design to the actual research.

A pilot study has been conducted by choosing 50 Experts (employees) from different levels of 15 IT Industries in Bangalore, Karnataka State. The above study equipped the researcher with a strong base in the development of the questionnaire. It also helped in proposing the statements (attrition factors) which affect the employee retention in identifying the right respondents from different IT sectors and in data analysis. Reliability analysis has been done by taking a sample of 50 respondents. In all, the reliability of the three statistics namely, Spearman-Brown, Guttman and Cronbach's alpha showed that the reliability of scale constructed for the general assessment is between 0.70 and 0.87, which makes the constructed scale fairly reliable.

3.5 THE QUESTIONNAIRE

According to Collis & Hussey (2003), questionnaires are associated with both positivistic and phenomenological methodologies. They (Collis and Hussey) describe a questionnaire as a list of carefully structured questions, chosen after considerable testing, with a view to eliciting reliable responses from a chosen sample. The aim is to find out what a selected group of participants do, think or feel.

3.5.1 Testing the Questionnaire

Collis & Hussey (2003) Prior to distribution, the questionnaire was tested on thirty respondents in a Pilot study. A Pilot study is an essential element of testing the questionnaire prior to distribution. The questionnaire was submitted to these respondents via e-mail. Suggest that the researcher can

have colleagues or friends read through the questionnaire and play the role of respondents, even if they know little about the subject.

3.5.2 Distribution

Distribution of the questionnaire was via electronic mail to 528 respondents. Although the research problem appears to cover a large population, Bangalore Information Technology Industries in Karnataka, the indication of the extent of the research in terms of focus is stated as within the Departments. Therefore the results obtained will be for the benefit of all the departments. The target audience for the purpose of the questionnaire in the study is all personnel from all the level, who are working at the Department of IT/ITES sectors of Bangalore. This constitutes of 500 potential respondents.

3.5.3 Validity and Reliability

Validity is concerned with the extent to which the research findings represent what is happening in the situation (whether it is a true picture of what is being studied). Leedy & Ormrod (2005) define the validity of a measurement instrument as the extent to which the instrument measures what it is supposed to measure.

According to Gill and Johnson (2002), there are three types of validity:

- a. Internal validity is the extent to which the conclusions regarding cause.
- b. Population validity is the extent to which conclusions might be generalized to other people.

- c. Ecological validity is the extent to which conclusions might be generalized to social contexts other than those in which data have been collected.

Collis & Hussey (2003) purport that; reliability is concerned with the findings of the research. The findings can be said to be reliable if the researcher or anyone else repeated the research and obtained the same results.

3.6 DATA COLLECTION

A structured questionnaire is the main tool used for collecting quantitative primary data. It enables quantitative data to be collected in a standardized way so that the data are internally consistent and coherent for analysis. Also the questionnaire ensures standardization and comparability of the data across interviewers, increases speed and accuracy of recording, and facilitates data processing.

The scaling techniques used in the development of questionnaire used in the study are: nominal scale, Likert type scale under interval scale, itemized rating and rank-order scale under ordinal scale and word association under disguised structured scale.

Renis Likert type 5 point scale was used to convert qualitative nature of the data into quantitative type. The respondents are asked to indicate their degree of agreement by checking one of the five response categories.

The data are typically treated as interval scale. When using this approach to determine the total score for each respondent on each store, it is important to use a consistent scoring procedure so that a high (or low) score consistently reflects a favourable response. This requires that the categories assigned to the negative statements by the respondents be scored by reversing

the scale. Note that for a negative statement, an agreement reflects unfavorable response whereas for a positive statement, agreement represents a favourable response. Accordingly, a strongly agree response to a favourable statement and a strongly disagree response to an unfavorable statement would both receive scores of five. Each respondent's total score for each store is calculated.

Rajiv Grover Marco Vriens (2006) a respondent will have the most favourable attitude towards the store with the highest score. It is easy to construct and administer this scale, and it is easy for the respondent to understand.

3.6.1 Collection of Primary Data

The primary data required for the study have been collected from selected employees working in IT organizations located in Bangalore city, Karnataka State. The primary data collection is done in two stages. In the first stage, a well structured questionnaire has been developed and pre-testing of the questionnaire has been done by choosing 50 employees (respondents) from different levels of 25 IT organizations on a random basis from Bangalore city, Karnataka State.

Reliability analysis for the questionnaire used in the present study has been done with a sample of 50 respondents and found that the reliability is good. A final questionnaire (attached in the appendix-1) with 52 statements (Human resource factor influencing retention of employees factors in IT sector) has been prepared and was administered to the target respondents.

The designations of the employees covered under the study are: Process Analyst (entry level), Senior Process Analyst, Team Leader, Supervisor and Manager (Division Head). In the second stage, primary data

has been collected by conducting an expert opinion survey using interview schedule developed separately for the samples selected from Bangalore city, Karnataka State. The respondents chosen includes experts and higher officials of the department of Information and Technology and Industry Experts involving senior HR Managers, Division Heads and HR specialists in various IT companies. Also, personal discussions and deliberations with IT employees starting from Process Analyst to Senior Managers' level have been conducted to collect the required data.

3.6.2 Secondary Data Collection

The secondary data related to the study are collected from different sources including text books, articles published in journals, news papers, periodicals National Association of Software and Service Companies (NASSCOM) websites, Mckinsey study reports company websites, Government's IT department sites, doctoral research thesis and various other related sites.

3.7 CONTENT VALIDITY AND RELIABILITY

Content validity is the degree to which elements of an assessment instrument are relevant to and representative of the targeted construct for a particular assessment purpose in psychological assessment. The importance of content validity for the validation of the target construct varies depending on how precisely the construct is defined and the degree to which "experts" agree about the domain and facets of the construct.

Lawshe (1975) Content validation is a multi-method, quantitative and qualitative process that is applicable to all elements of the assessment instrument. During initial instrument purpose of content validation is to minimize and to increase the probability of obtaining supportive construct

validity indices in later studies. Because sources of error vary with the targeted construct, the method of assessment, and the function of assessment, the methods of content validation will also vary across these dimensions. In this research, data was analysed using content validity technique.

Crocker et al (1986) the optimal number of judges will vary with the element under consideration, the internal consistency of the ratings, and practical considerations. In the present research, twenty panelists were asked to indicate whether or not the measurement item was “essential” to the operationalisation of the theoretical context. The panelist’s inputs were then used to compute the CVR for each I Th candidate item in the questionnaire (CVR_i) as follows Equation (3.1).

$$CVR = \frac{ne - N/2}{N/2} \quad (3.1)$$

where N = the total number of panelists

ne = the number of panelists indicating “essential”

It is inferred from the CVR equation that the content validity ratio takes on values between -1.00 and +1.00 where CVR=0.00 means that 50percent of the panelists of size N believe that a measurement item is “essential”. A CVR>0.00 would, therefore believe that a measurement item is “essential” and thereby valid.

Lawshe (1975) has further established minimum CVR s for different panel sizes based on a one-tailed test at the 0.05 significance level as 0.5; this was used for the research too.

Nunnally (1978) Content validity ratios were thus calculated for the questions which could measure WL and JP for the Content Validity Ratio

Table. All the statements in QWL and JP were considered after the calculation of content validity ratio. Only statements which have a score of 0.50 or above have been included in the survey instrument. After the content validation and reliability check, the final version of the questionnaire was arrived at. In order to evaluate the reliability level of the data, Cronbach alpha test is conducted. Only elements with alpha value of 0.70 or above are considered. For all the variables of factor analysis, alpha value is above 0.70 which shows the internal consistency of the scales (Cronbach 1981).

3.8 SAMPLE DESIGN

There are 1200 ITES organisations registered with the Registrar of Companies in Bangalore, Karnataka State, India, of which, 303 organisations involve in process of survey. All 303 organizations were approached and all 303 organisations were willing to participate. The employees at the Managerial level from these 303 organisations constitute the universe for the research. Total of 721 employees are functioning at the Managerial level in these 303 organisations. The judgmental sampling was adopted for selecting employees from companies which had employee engagement activities. Multinational IT companies and Indian IT companies were selected only if they had Employee Engagement practices prevalent for the last three years. Convenient sampling was adopted to select the respondents. The sample size was primarily designed to be 0.76 percent that is 500 employees. In order to tackle the non response, more than 500 employees were selected using non-probability purposive sampling and questionnaires were issued. Out of which 524 employees responded to the questionnaire. After cases with missing data were eliminated, the final sample consisted of 500 useable responses.

3.9 DATA ANALYSIS TECHNIQUES

The statistical procedures used are selected based on the suitability to examine the objectives of the research using SPSS 21 statistical package. The various statistical tools adopted are presented as framework for analysis.

Data analysis involves converting a series of recorded observations into descriptive statement and/ or inferences about relationships. For the Statistical analysis of the data used in the present study, the major tools used which includes Factor Analysis, Multiple Regression analysis, Analysis of Variance (One-way ANOVA), Chi-Square test, 't'test, pie-charts and averages, percentages, graphs, bar diagrams and SPSS 21 software packages.

Collis & Hussey (2003) A Likert rating scale as described was used for section two of the questionnaire. The questions were turned into statements and the respondents were asked to indicate their level of agreement by checking the chosen box with an "x".

Collis & Hussey (2003) With the exception of sub-section me, all question statements were posed in a positive context. The benefit of this was to discourage leading statements, i.e. leading the respondent into a negative context. It is after all, the negative context that the researcher attempted to invalidate, but if established, it is an indication of a problem area. Therefore, if the answer is "Disagree", then it is actually so. Propose that questions of a sensitive nature should be avoided, or if asked, they should be towards the end of the questionnaire; however they strongly advise against asking negative questions.

3.9.1 Factor Analysis and Other Statistical Tools

Factor analysis has been used here to identify and define the underlying dimensions in the original variables and is used to reduce the number of variables by eliminating redundancy. The general purpose of factor analysis is to find a method of summarizing the information contained in a number of original variables in to a smaller set of new composite dimensions (Factors) with minimum loss of information. That is, the Factor Analysis tries to identify and define the underlying dimensions in the original variables.

Factor analysis usually proceeds in four steps:

- a. First, the correlation matrix for all variables is computed. Variables that do not appear to be related to other variables can be identified from the matrix. The appropriateness of the factor model can also be calculated.
- b. Factor extraction, the number of factors necessary to represent the data and the method of calculating them must be determined. At this step, how well the chosen model fits the data is also ascertained.
- c. Rotation focuses on transforming the factors to make them more interpretable.
- d. Scores for each factor can be computed for each case. These scores are then used for further analysis.

The set of 52 objects included in the Employee Attrition Scale was used to find the underlying factors in it. Identified 10 factors affecting high employee through factor analysis and a 10 factors model was developed.

Analysis of variance (One-way ANOVA), Chi-Square test, and t-test are done on the primary data. Also relevant interpretations of the tables and other data have been done using pie-charts, percentage diagrams and bar diagrams. Analysis of the respondent's personal and other relevant factors namely gender, location of the respondents, global position (multination /national), age, experience in the present organization, respondent's salary, designation, qualification, area of work, number of training programs undergone have been done and percentage charts are prepared and interpretation also is given for the above factors. Also ranking of reasons for stress to IT employees is done with suitable charts. Multiple regression analysis was applied to find the critical factors and the non-critical factors or variables which might affect the attrition of the employees.

3.9.1.1 Principal component analysis using varimax rotation

The main applications of factor analytic techniques are:

- a. To reduce the number of variables and
- b. To detect structure in the relationships between variables, that is to classify variables.

Therefore, factor analysis is applied as a data reduction or structure detection method.

The Principal Component Analysis is appropriate when researcher obtained measures on a number of observed variables and wishes to develop a smaller number of artificial variables (called Principal Components) that will account for most of the variance in the observed variables. The Principal Components may then be used as predictor or criterion variables in subsequent analyses.

Nunnally & Bernstein, (1994) The Principal Component Analysis with Varimax Rotation for (Retention factors) was done to investigate the underlying relationships of a large number of objects and to determine whether they can be reduced to a smaller set of factors. This analysis has a high potential to inflate the component loadings. Thus a higher rule-of-thumb, a cut off value of 0.40 is adopted.

The Kaiser-Meyer-Olkin measure of Sampling Adequacy and Bartlett's test of Sphericity were used to determine the appropriateness of factor analysis. The four dimensions of retention factors were identified and labelled as Reward system, Managerial style, Organisational support and Job itself. The factor loadings in the four factors range from 0.50 to 0.77. The total variance of retention factors explained is 60.426percent. The Principal Component Analysis is employed for extracting factors.

The Varimax rotation was used as it is centre on simplifying the columns of the factor matrix. The latent root criterion is used for the extraction of factors. As per the criterion, only factors having latent roots or Eigen values greater than one are considered significant by means of item analysis based on Pearson correlation.

3.9.2 Correlation Analysis

Correlations are useful because they can indicate a predictive relationship that can be exploited in practice.

3.9.2.1 Pearson product moment correlation and canonical correlation

The present research attempts to find the relationship between Retention factors using Pearson Product-Moment Correlation and Canonical Correlation. The correlation based on the Pearson Product-Moment

Correlation is performed to understand the relationship between all factors of the research. The correlation coefficient r is a measure of the linear relationship between two attributes or columns of data. The value of r can range from -1 to +1 and is independent of the units of measurement. A value of r near 0 indicates little correlation between attributes; a value near +1 or -1 indicates a high level of correlation. When two attributes have a positive correlation coefficient, an increase in the value of one attribute indicates a likely increase in the value of the second attribute.

3.9.2.2 Canonical correlation analysis

Canonical Correlation Analysis is one of the multivariate analysis techniques that focus on the simultaneous analysis of relationships between multiple independent and dependent variables. If there are two sets of variables, and there are correlations among the variables, then Canonical Correlation Analysis will enable to find linear combinations of the x's and the y's which have maximum correlation with each other. A typical use for Canonical correlation in the experimental context is to take two sets of variables and see what is common amongst the two sets. Following Pedhazurs (1982) recommendation, interpretation is based on variables correlating 0.30 or greater with the Canonical Variate. This technique is employed to investigate the percent of variance of one set of variables explained by Canonical Variate for the other set along the dimension represented by the Canonical Correlation.

3.9.3 Multiple Regressions

Regression models are created to understand the impact of Retention factors. Multiple Regressions is a statistical method used to examine the relationship between one dependent variable Y and one or more independent

variables X_i . The regression parameters or coefficients in the regression equation are the coefficients of the independent variable.

$$Y = b_0 + b_1X_1 + b_2X_2 + b_3X_3 + \dots + b_kX_k$$

The coefficient of determination R^2 is the proportion of the variation in the dependent variable explained by the regression model. The enter method which is a default standard method in SPSS and also a straightforward method is used.

Before proceeding with Regression Analysis the assumptions of Regression analysis have to be fulfilled. None of the multivariate analysis may yield reliable results if the assumptions are not satisfied.

3.10 HYPOTHESIS

Objective: To study the retention of employees in MNCs of Information Technology sector in general.

- 1.1 There is no significant difference among the IT industries in applying scientific concepts and theories to the solution of problems.
- 1.2 There is no significant difference among tasks consists of carrying out technical work connected with the application of concepts and operational methods.
- 1.3 There is no significant difference among possess competencies that are exclusive
- 1.4 There is no significant difference among supportive to the organisation demands, culture, and vision & Mission for getting success

- 1.5 There is no significant difference among involvement and active participation in the carry out the essential tasks.
- 1.6 There is no significant difference among provide skills and/or knowledge to ensure the success of the organization, sequence plan
- 1.7 There is no significant difference among Attractive attitude, friendly relationship, 24x7 support, flexi schedules, nightshifts, and work from home.
- 1.8 There is no significant difference among Global exposure and practice while working from India.
- 1.9 There is no significant difference among site experience, innovative talent, and professional satisfaction.
- 1.10 There is no significant difference among fulfilling the resources to a competitive edge to the organisation
- 1.11 There is no significant difference among contributes to the organizational memory – their departure would drain the organization’s knowledge and sill bank.
- 1.12 There is no significant difference among possesses skills, knowledge and abilities that ate relatively rare and irreplaceable.
- 1.13 There is no significant difference among essential to an organization’s productivity and well being.
- 1.14 There is no significant difference among key motivators, mentors or role models to other staff.
- 1.15 There is no significant difference among knowledge, skills and attributes that are closely aligned with the existing or possible future operational direction of the business.

- 1.16 There is no significant difference among display identification with, and commitment, to the organisation.

Objective: To identify the factors of retention of employees in Information technology of Bangalore city, India.

- 2.1 There is no significant difference among the IT industries in effective selection & recruitment process, and job design.
- 2.2 There is no significant difference among the provision of effective training & development practices
- 2.3 There is no significant difference among Innovative fair and equitable performance evaluation practices.
- 2.4 There is no significant difference among career development, and promotional practices, employee assistance programs.
- 2.5 There is no significant difference among challenging employment structures and opportunities.
- 2.6 There is no significant difference among equity of compensation, social benefits and security of tenure.
- 2.7 There is no significant difference among reward and recognition of employee value performance education
- 2.8 There is no significant difference among Grievance handling systems
- 2.9 There is no significant difference among employee satisfaction and Motivation

2.10 There is no significant difference among employee retention methods and employee commitment

Objective: To identify and analysis the perceptions of the employees with regard to the career development practices being adopted by Information technology

3.1 There is no significant difference among the IT industries company policies, vision, mission and culture

3.2 there is no significant difference among job knowledge communication and coordination

3.3 there is no significant difference among job satisfactory and flexibility working environment

3.4 There is no significant difference among decision making and employment of right employee.

3.5 There is no significant difference among provision of high –tech performance equipment

3.6 There are no significant difference among Influential and sensitive leadership style.

3.7 there is no significant difference among effective integration and working relationship

3.8 There is no significant difference among effective performance appraisal announcement

3.9 There is no significant difference among organizational loyalty and pride.

- 3.10 There is no significant difference among reward and suitability of feedback to the employee.

3.11 CONCLUSION

This study explores the impact of Human Resource practices on retention factors, as such the data consists of more than one variable the above statistical techniques have been used to analyse the data for interpretation. The IT profession is indeed a stressful profession. IT professionals have to cope with long working hours, unending user demands, unmet deadlines and skill obsolescence. If IT professionals face tremendous job stress which cannot be contained, burnout will happen in them and this will lead to a variety of health problems.

According to a recent study done in IT professionals are found to be highly stressed. There is clearly a need for organizations and IT professionals to pay attention to and manage the stress of IT professionals. Organizations that fail to do so are likely to have dissatisfied employees and high staff turnover. IT professionals who fail to effectively manage their stress may end up with a variety of health problems.