CHAPTER III

RESEARCH METHODOLOGY

3.1 Introduction

The methodology of research indicates the general pattern of organizing the procedure for gathering valid and reliable data for the purpose of investigation (Srivastava, 2008). The methodology of this study includes the description of research design, sample size, sampling technique, development and description of tool, data collection procedure and method of analysis. The validity of a research depends on the systematic method of collecting data and analyzing them methodologically (Kothari, 2009).In this study primary and secondary data were found. Through the field study, primary data were collected in automobile industries in Chennai.

3.2 Research Design

Descriptive research design has been adopted for the present study. Descriptive study is a fact-finding investigation with adequate interpretation. It focuses on particular aspects or dimensions of the problem studied. It is designed to get the descriptive information and provided information and formulation of more sophisticated studies.

3.3 Need and significance of the study

➢ The success of managing in organizations has a direct impact on the superiority of human beings. Managing human relations is a central concern of every administrator in any organization of late; it has been realized as a resource which cannot have an alternate. The individual needs of the employees can have important effects on the organizations themselves.

➢ Motivation theories of human relations school argue that concern for output and concern for people go hand in hand, and that satisfied employees will be high-performing employees.

➢ The automobile industry can reach its goals and objectives with successful human relations which in turn will result in the victorious functioning of the same.

➢ In an automobile industry system, where the administrators have the task of imparting information for study and research, performance of the employees is of utmost importance.

3.4 The scope of the study

The scope of the study is limited to the major automobile industries of Chennai city namely, Hyundai Motors, Ford India, BMW, Nissan Motors & Renault India, Ashok Leyland, Caterpillar India Hindustan Motors, Daimler

Bharat Benz and Royal Enfield. The remaining automobile industries have been excluded owing to their variation in administrative set-up and popularity.

3.5Frame work of the Study
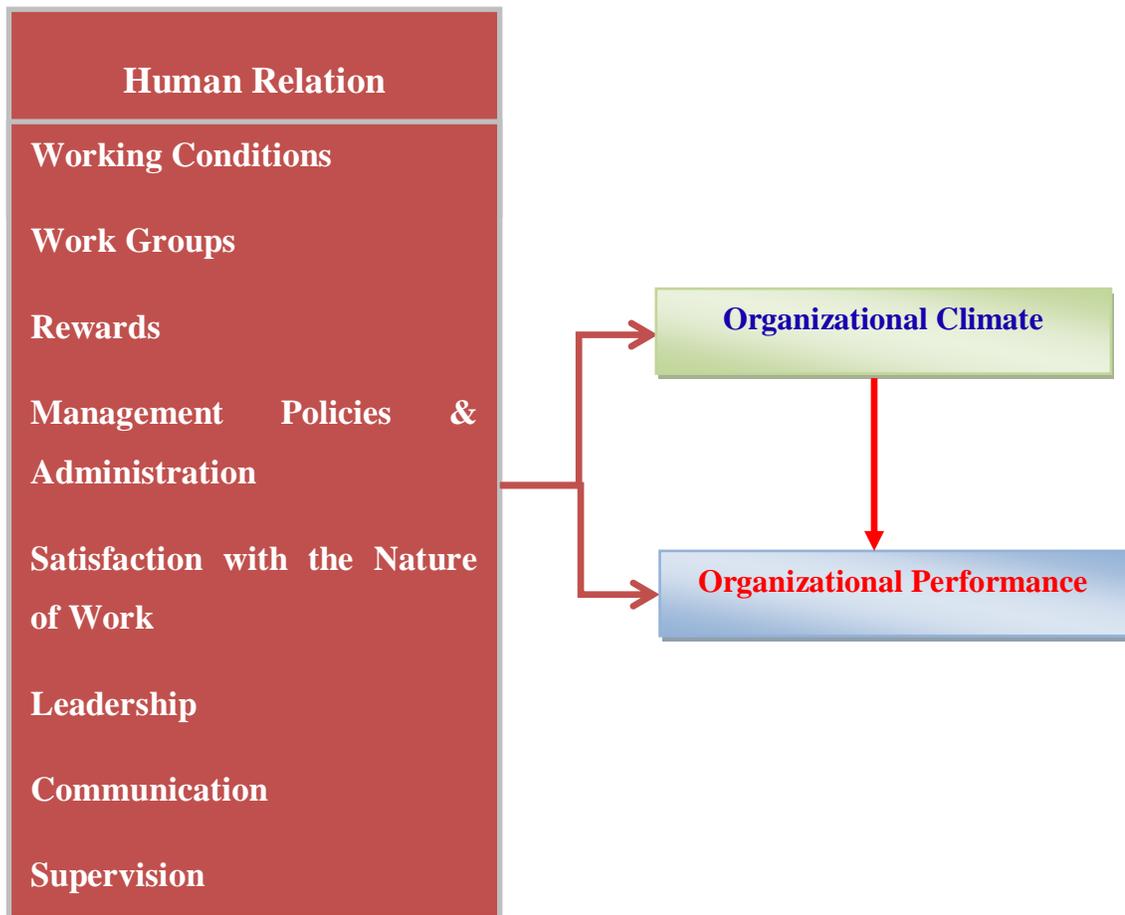
3.5.1 Human Relations

World Book Encyclopedia Human relations as the field of study that deals with group behavior and interactions between people.

A human relation is the art of using systematic knowledge about human behavior to improve personal, job, and career effectiveness. It begins with self-understanding.

Human relations, in its broadest sense cover all types of interactions among people- their conflicts, cooperative efforts, and group relationships. It is the study of why our beliefs, attitudes, and behaviors sometimes cause inter-personal conflict in our personal lives and in work-related situations (Reece and Brandt 5).

A human relation is the study of the interactions that exist between people. These relationships occur at work in an organization and in all aspects of our personal lives.

Human relations can be either a formal interaction that takes place, such as between workers and their supervisors, or an informal interaction. (De Cenzo).

According to Davis 'human relations is motivating people in organizations to develop teamwork which effectively fulfills their needs and achieves organizational objectives.' It is the study of human behavior at work and an effort to take action in operating situations in order to produce better results. The definition given by Davis projects the following aspects of human relations:

➢ The focus is on people rather than on economic or mechanics

➢ People are in an organizational environment rather than in an unorganized Social set-up

➢ The key activity in human relations is motivating persons

➢ The direction of motivation is toward teamwork, which requires both coordination of the work and cooperation of the persons involved

➢ Human relations through teamwork seeks need fulfilment and organizational objectives, rather than one or the other.

➢ Both a person and an organization seek results effectively with minimum inputs in relation to outputs.

3.5.2 Working conditions

The environment in which the works is termed as working conditions**. This aspect has considerable influence on the personnel. The level of orientation he receives from the institution paves the way for his future work.

Working condition helps a worker to perform his duties in hygienic conditions and such conditions ensures safety to the body and mind of a worker.

3.5.3 Work groups

The concept work groups consist of cooperation and job performance. The employee achieves job objectives through the performance of the job. The performance of the employee largely depends upon the cooperation received from colleagues and superiors.

3.5.4 Rewards

As far as workers are concerned, rewards are motivational factors. People work more productively in an independent manner than working interdependently to receive rewards, which promote highly individualistic motivation.

3.5.5 Management policies and administration

The attitude of the management influences the behavior of the employee. Its policies and administration depends a lot on the pattern in which they establish policies. The administration should be such that the workers should not feel it but it should be there for the development of the staff. The respondents were made to record their responses to the aspects like communication of information, fairness of policies and administration, advancements and promotion which came under the variable management policies and administration

3.5.6 Satisfaction with the nature of work

The workers need to have satisfaction with the nature of work. This aspect could be found in various forms. The workers should have the freedom to take decisions when it is required and future ratification of the same need to be there. Ample opportunities have to be there for personal and professional growth and the staff members should be responsible for the work done by them. Interest should be inculcated with regard to the work carried out by the staff.

3.5.7 Leadership

Leadership is the attitude towards the development of the institution. It consists of conceiving a vision for the organization. The important part of this aspect is to energies the staff members to offer maximum productivity to achieve the goals of the institution. Leadership is vital as it has such a powerful influence on the individual and group behavior. It required the Respondents to assess the concept leadership and delegation of power.

3.5.8 Communication

Communication is a demanding skill of understanding and being understood in ways that improve, rather than inhibit, interaction between people. An understanding of some of the basic processes, difficulties, and techniques of communication is a necessary ingredient for successful organizational life. Effective managers recognize that the way they communicate is a key to the performance of their workers. The concept of communication and the aspect of interpersonal communication were presented

3.5.9 Supervision

The supervisory function is more than a stepping stone upward-it has a key role in human relations. The supervisors are the mirrors of the management in which employee-relations will have its image. The concept of supervision has statements consisting of the aspects communication, trust, job competence,

consideration and recognition of stepping stone upward-it has a key role in human relations.

These workers work in shifts and control their line /area activities, in charge of production. They are not involved in major decision-making process. They co-ordinate between workmen and managers.

3.5.10 Organizational climate

Organizational climate refers to the quality of working environment. If people feel that they are valued and respected within the organization, they are more likely to contribute positively to the achievements of the business outcomes. Creating a healthy organizational climate requires attention to the factors which influence workers' perceptions, including the quality of leadership, the way in which decisions are made and whether the efforts of workers are recognized. In fact climate may be thought of as the perceptions of the organizational characteristics.

3.5.11 Organizational Performance

Performance is the attainment of organizational goals by using resources in an efficient and effective manner. Effectiveness and efficiency is viewed as sub components of performance.

3.6 Research Gap

Research gap is actually unrevealed truth, left by a study. A study should be usable both by the intellectual searchers and material searchers. Several studies are trying to conserve the human relation and human relation training based on several past studies the research gap is identified. Studies by (Costley et al. 1994); (Adrrian Furnham and Leonard D. Goodstein 1984) and (Pimsinee Chearskul 2010)) initiated and motivated the researcher.

This study is unique in introducing the outcome variables such as organizational climate and organizational performance; dependent variable human relation which are studied individually and combined studies are not found in other studies and also no studies were found in automobile industries. The title is "A STUDY ON HUMAN RELATIONS AMONG WORKERS OF AUTOMOBILE INDUSTRY IN TAMILNADU."

3.7 Statement of the Problem

This section deals with statement of the problem and it has been written on the basis of many previous research findings relating to the human relations and such studies are elaborately discussed in the review of literature chapter. This study has been undertaken on the basis of previous findings and research output made by the both international level scholars and national level scholars. The presents study is the pioneer attempt and previously no such study conducted in this area. In simple term, the organizational level includes all the workers like

superior and subordinate members Based on the above back round, the present study on human relation is carried out in automobile industry in Tamil Nadu. It deserves due attention on account of the fact that in automobile cluster in the country. Automobile industry based which contribute a considerable level of income and employment opportunities to the nation. Industry providing direct and indirect employment to 19 Million these types of industry employment opportunities as well as national income can be improved. Further Tamil Nadu has been a front runner in the automobile sector in the country and contribution to the industry in various segments. 'Study on Human Relations among workers' would be helpful to understand and analyze the factual ground level issues. This urge has infused the researcher to concentrate a study on Human Relations.

The study concentrates on automobile industry in and around Chennai, Tamil Nadu. The research in this area is Chennai is the well-established presence of the automobile industry in and around the city Chennai is the fourth largest metropolitan city of the country and importance, due to its unique location in and around city. This fact has caught the attention of the researcher to analyze the reasons and causes of supervisory and subordinate relations work performance. In this connection there is a need to identify the factors that has influence on human relations. It could be noted that human relations is influenced by various psychological factors. It could be in the form of job performance, adhering to organization norms and rules and co-worker relationship.

Beside the nature of management, there are many socio-economic factors exercising their influence variables, such as family background, rural-urban background, occupational status, age caste, wages etc. In this study the extent to which the socio-economic background of the workers influence on human relations in automobile industry specifically finds due attention.

The human relations encourage the workers to work together to achieve the desired and expected purpose of the industry. The quality of human relations is critical point to buildup the morale amongst the workers. It may seem significant especially in an industry that is used to a high turnover. The employer and employee relationships provide a source of employee motivation, which is important to maintaining productivity. Workers who are interested in their work and in the well-being of other workers tend to be more productive than those who are not. Making and maintaining relationships in terms of recognizing an workers' value and a concern for their needs often goes a long way.

The human relations has many benefits, the studies could provide a better image of the human relations in automobile industry, still automobile industry face certain difficulties in implementing and relationship the superior, continuously in their concern, for this purpose the researcher has identified variable which influence the human relations and suggestion to make them more effective industry.

3.8Objectives of the Study

The objectives of the study are as follows:

1. To study the Human Relations of the workers in Automobile Industry in Chennai.

2. To assess the level of human relation of the workers of Automobile Industries with respect to organizational climate and organizational performance in Chennai.

3. To identify the relationship among human relation, organizational climate and organizational performance workers of Automobile Industries in Chennai.

4. To describe the influence of human relation on organizational performance and influence of human relation on organizational climate of Automobile Industries in Chennai.

3.9Hypotheses of the Study

Accordingly the researcher has proposed the following hypotheses for testing the tools with reference to the above objectives. Based on the review of literature and research questions, the following hypotheses were formulated:

1. Workers' opinion does not differ towards human relation with respect to demographic profile.

2. There is no association human relation of the workers of Automobile Industries with respect to organisational climate and organizational performance in Chennai.

3. There is no relationship among human relation, organisational climate and organizational performance workers of Automobile Industries in Chennai.

4. There is no influence of human relation on organisational climate and influence of human relation on organizational performance of Automobile Industries in Chennai.

3.10 Sources of Data

3.10.1 Primary Data

With the help of structured interview schedule, primary data were collected. The interview schedule was prepared after sufficient review of literature, and for pre-testing, the pilot interviews went with 50 workers Royal Enfield industry in Chennai. Then finally the redrafted interview schedule was administered among the workers from selected automobile industries in Chennai.

3.10.2 Secondary Data

Through possible mass media such as text books, magazines, journals and dailies, internet web resources, others published and unpublished sources of information, the secondary data were received.

3.11 Questionnaire Construction

Based on the previous reviews (Costley et al. 1994); (Adrrian Furnham and Leonard D. Goodstein 1984) and (Pimsinee Chearskul 2010) variables were selected. Outcome variables such as organizational climate and organizational performancewere listed out along with dependent variable human relation. Standard questionnaire with reliability, and objectivity was framed which involved several steps before and after pilot study.

Table 3.1 Questionnaire Design

S.No.	Variables	Item	Authors
I	Demographic Variable	10	
II	Human Relation	80	Costley et al. (1994)
III	Organizational Climate	10	Adrrian Furnham and Leonard D. Goodstein (1984)
IV	Organizational Performance	10	Pimsinee Chearskul (2010)

3.11.1 Demographic Variables

For these stage 10 questionnaires were framed, for which different responses were most suited for the workers; for this section, face validity alone is suffice.

3.11.2 Human Relation

The scale was developed by Costley et al. (1994). It consists of 80 items to measuring eight dimensions of human relation automobile industries in Chennai. Eight dimensions such as working conditions, work groups, rewards, management policies & administration, satisfaction with the nature of work, leadership, communication and supervision. The responses towards human relation are five point likert scales from strongly agree to strongly disagree.

Dimensions	Items
Working Conditions	**1 to 10**
Work Groups	**11 to 20**
Rewards	**21 to 30**
Management Policies & Administration	**31 to 40**
Satisfaction with the Nature of Work	**41 to 50**
Leadership	**51 to 60**
Communication	**61 to 70**
Supervision	**71 to 80**

3.11.3 Organizational Climate

The scale was developed by Adrrian Furnham and Leonard D. Goodstein (1984). It consists of 10 items. The responses towards organizational climate of workers are five point likert scales from strongly agree to strongly disagree.

3.11.4 Organizational Performance

The scale was developed by Pimsinee Chearskul (2010). It consists of 10 items. The responses towards organizational performance of workers are five point likert scales from strongly agree to strongly disagree.

3.12 Pre-Test

The researcher conducted a pre-test for the purpose of simplicity and alteration in the interview schedule. The pre-test was conducted during the month of June2015. The researcher conducted interview with 20 workers and based on the responses arrived from the workers, assured modifications have been prepared in the interview schedule.

3.13 Pilot Study

The researcher discussed with the select group of workers about how comfortable they were answer the questions during this survey. The workers expressed that the construct of the language does not reflect the regional orientation in terms of English language expressions. In order to make respondents comfortable in answering the questions, the construct of the language was revised to suit the workers of Royal Enfield industry in Chennai. The researcher has taken necessary care to revise and simplify the usage of items in the construct.

Sixty workers were approached and 50 responses were used for reliability study using Cronbach's Alpha test. The result of the study was verified, and it was found to be favorable. The pilot study was conducted during august2015. For the

purpose, the researcher met the workers Royal Enfield industry in Chennai and discussed the study modules. Based on the suggestions and feedback arrived from the discussion, certain decisions were made by the researcher in consultation with the guide.

Table 3.2: Reliability Test for Pilot Study Using Cronbach's Alpha

Variables	Cronbach's Alpha value
Human Relation	0.871
Organizational Climate	0.750
Organizational performance	0.802

For all the items in the questionnaire design, the alpha values ranged from 0.750 to 0.871. This indicates high reliability of the items in the questionnaire. With these results, consistency, dependability and adaptability are confirmed. With some editions the questionnaire was to be launched for the final study.

3.14 Population of the Study

Table 3.3: Population

SL.NO.	Company & Industry	Plant Location	Number of Regular Workers
1	Hyundai Motors	Sriperumbudure	5200
2	Ford India	Maraimalai Nagar	3000
3	BMW	Maraimalai Nagar	600
4	Nissan Motors & Renault India	Oragadam	4000
5	Ashok Leyland	Ennore	1500
6	Caterpillar India Hindustan Motors	Thiruvallur	1800

7	Daimler Bharat Benz	Orgadam	3000
8	Royal Enfield	Maraimalai Nagar	1200
Total Population			**20300**

Source: completed as per the field survey SIPCOT

3.15Sample Size Determination

Yamane (1967) provides a simplified formula to calculate sample sizes. This formula was used to calculate the sample size in this study.

$$n = \frac{N}{1 + N(e)^2}$$

Where n is the sample size, N is the population size and e is the level of precision. A 95% confidence level and P = 0.5 are assumed. When this formula is applied this study,

$$n = \frac{20300}{1 + 20300(.05)^2}$$

$$n = 393$$

Hence the total sample size of 393 numbers which is above the prescribed number of sample has been maintained by the researcher throughout the study. In order to have variation within the sample area (383 Automobile Industries); among eight sample automobile industries have been identified.

3.16 Sampling Technique

"Multi-stage sampling is a further development of the principle of cluster sampling. Ordinarily multi-stage sampling is applied in big inquires extending to a considerable large geographical area. If we select randomly at all stages, we will have what is known as multi-stage random sampling design".

Chennai city was selected for data collection. In Chennai most of the international automobile industries and their products are engaging in production and sales. On the other hand Indian automobile industries are also engaged in production and selling products. Hence, the Chennai was selected for data collection Tamil Nadu.

In this research the Multi-Stage random sampling method of statistical probability sampling of was adopted. In Chennai city, among the 383 automobile industries, the researcher selected eight automobile Institutions because it has popular industries among 383 industries in Chennai. During the process of preparing a sample frame, the researcher randomly selected for eight automobile industries (Ashok Leyland, BMW, Caterpillar, Daimler, Ford India, Hyundai, Nissan & Renault and Royal Enfield).

3.17 Sampling Frame

Based on the Yamane (1967) formula for determining the sample strength was adopted which suggested 393 as suitable sample size. In anticipation of non response, an additional 50 percentage of the expected sample size was planned.

114

Randomly eight automobile industries were selected as presented in the table. In each industry 80 questionnaires were distributed personally to those workers. The list of the workers was collected through industry authorities. Based on the list data were collected from September 2015 to November 2015. Out of 603 received questionnaires 553 were eligible and the remaining 50 were with flaws and rejected. Hence, the sample strength was 553. Out of 553, 541 were male workers and the remaining 12 were female workers.

Table 3.4 Showing Main Study Data Collection

S.No.	Automobile Industries	Population	Distributed Questionnaires	Collected Questionnaires	Rejected	Accepted
1	Hyundai Motors	5200	80	77	7	70
2	Ford India	3000	80	74	4	70
3	BMW	600	80	75	5	70
4	Nissan Motors & Renault India	4000	80	72	2	70
5	Ashok Leyland	1500	80	75	10	65
6	Caterpillar India Hindustan Motors	1800	80	78	8	70
7	Daimler Bharat Benz	3000	80	75	7	68
8	Royal Enfield	1200	80	77	7	70
Total		**20300**	**640**	**603**	**50**	**553**

3.18 Main Study Reliability

Table 3.5 Main Study Reliability Analysis

Variables	Cronbach's Alpha value
Human Relation	0.840
Organizational Climate	0.782
Organizational Performance	0.832

For all the items in the questionnaire design, the alpha values ranged from 0.782 to 0.840. This indicates high reliability of the items in the questionnaire. With these results, consistency, dependability and adoptability are confirmed.

3.19 Statistical Tools Used

Table 3.6 Statistical Tools

S.No.	Statistical tool
1.	Descriptive statistics
2.	Independent sample t test
3.	K – Mean Cluster Analysis
4.	Chi-square
5.	One way ANOVA
6.	Correlation
7.	Multiple Regression

3.19.1 Frequency Analysis

Frequency analysis was performed to group the 553workers on the basis of gender, age, marital status, family members, education, occupation, income and member of earning members. This is a process of condensing the available data.

Based on the condensed data, frequency analysis performed. Before condensation, it is called as data; after condensation, it is frequency distribution. This is used in all the determination of central tendencies such as mean, median and mode which are major means and geometric and harmonic means which are minor means. In order to understand the nature of skewness and kurtosis, this frequency analysis was performed. Hence, this tool was selected.

3.19.2 Percentage Analysis

This helps us to get more refined idea about the sample on our hand. Demographic variables after frequency analysis are converted into percentage form. This is more meaningful than frequency analysis; hence, this is opted.

3.19.3 Chi-Square Test

In order to identify the association between psychographic and study variables respondents from different regions of the study area, a Chi-square (χ^2) test was used and the formula is given below.

$$\chi^2 = \sum \frac{(O-E)^2}{E}$$

With Degree of Freedom (D.F.) = (c-1) (r-1) where,

O   =   Observed frequency,

E   =   Expected frequency,

c   =   Number of Columns,

r   =   Number of Rows.

3.19.4 Mean Cluster Analysis

K mean cluster analysis was adopted in this study. The analysis was only used for classifying the respondents. Outcome variables likewise, organizational climate and organizational performance were listed out along with dependent variable human relation to classify low, medium and high.

3.19.5 One Way ANOVA

ANOVA considers that all the variables in the study are assumed to be equal. It is adopted to find the differences between the means of three or more variables.

One way ANOVA while stating the significant differences between means leave some errors which are not preventable. All those results of ANOVA lead to acceptance or rejection of H_o which lead to unforgivable type I error or α error and type II error or β error. To overcome these errors and related risks, post hoc test was used. Duncan multiple range tests were adopted to find out the specific differences between the concerned groups. Duncan's new multiple range test (DMRT) is a modified version of Newman – Kevls method. Duncan test is protective against β error i.e., accepting a false H_o when it is false. This test results find out and greater means and lesser than the greater means. Through this test, minimization of both errors can be achieved. This DMRT reveals the comparative equality of pair of means under consideration.

3.19.6 Independent Sample 't' Test

The 't' distribution is a different type of distribution. This distribution as the normal distribution is symmetrical; but 't' distribution is more flattened than the normal distribution. A 't' distribution is lower at the mean and higher at the tails than the normal distribution (Richard I Levin et al, 1996). Anyhow 't' distribution is considered as the normal distribution, because if the sample strength exceeds beyond 30, the 't' distribution tends to become normal distribution i.e. its platy kurtic nature tends to become meso kurtic. The 't' distribution is used to test a hypothesis about the difference between the means of two samples drawn from either same normal population or two normal populations when their variances are equal (Grewal, P.S., 1987). Based on the above details this test was felt to suit this study; so 't' test was adopted to compare two means of two groups, based on some demographic variables such as gender and marital status etc.

3.19.7 Correlation

Correlation analysis is used as a statistical tool to ascertain the association between two variables with the help of correlation analysis; we can be very specific by measuring the degree of relationship between the concerned variables. This is the precursor analysis for regression analysis. Correlation determines the nature of mathematical relationship; this relationship may be linear or curvilinear. This tool also helps in forecasting process. Correlation analysis tells us how the

estimating equation will actually describe the relationship. "When the relationship is of a quantitative nature, the appropriate statistical tool for discovering and expressing it in a brief formula is known as correlation." (Croxton, F.E. et al, 1975). Usually there is some relationship between variables. This strength of relationship is known as degree of relationship. Chi-square finds out only the association of two variables but not the degree of the relationship; this purpose is served by correlation. Correlation does not indicate any casual relationship but only the interdependence of variables.

3.19.8 Multiple Regressions

The statistical aspects which the Chi-square test and correlation have left unveiled, regression unveil some aspects. Regression describes the functional relationship and casual relationship. This tool pin points the exact causative variable over the other under any study. Better understanding of these causal relationships helps in prediction. Which variable is sympathized over which is identified. The main objective of regression analysis is to model the relationship between two variables. Regression involves the procedure involved in forecasting the behavior of one variable, called dependent variable on the basis of another variable named independent variable. 'To regress' means to go back, this is a process of prediction (Bowley, A.L., 1937). It is assumed that the values of the independent variable are known and are constant; while the dependent variable is a random variable. Usually regression line will be linear; rarely may it be

curvilinear, regression line exposes two portion such as explained and unexplained part i.e. the portions explained and unexplained is not explained by the independent variables involved in the study and the other unexplained is not explained by the independent factors but by those hidden intervening factors outside the purview of any study.

Regression is a general process of predicting one dependent variable by using data about the independent variable.

Since regression analysis helps in determining the causative effects of one variable over the other, this is opted in the study to find the influence of the independent variables towards the dependent variable. Correlation spells out the degree of relationship and the regression predicts the influence of independent variable over the dependent variable. In addition to these, regression may expose the explanation of the independent variables of the study over the dependent factor; simultaneously it reveals the influence of unexplained variables i.e. intervening variables over the dependent variable. Based on the merits of this, statistical process is opted.

Multiple regressions were additionally opted to solve the effect and influence of independent variables towards the dependent variable. Simultaneously, multiple numbers of independent variables can be treated with the dependent variables; hence, this tool was opted. Objective to determine the degree

of relationship between one dependent and several independent variables could be achieved by this tool. Based on the number of independent variables, numbers of equations are framed to expose individuals and grouped influence over dependent variables.

3.20 Chapter Summary

In the research methodology, the approach was pre-systemized and operated. Based on the research gap and involved variables, the standard questionnaire with 5 point scale was adopted. After consultation with literates of the field, pre-test was conducted for 20 workers in automobile industries in Chennai. Refined questionnaire was used for the pilot study for 50 workers from Royal Enfield at Chennai. Main study was also through multistage random sampling technique; the sample frame is eight automobile industries in Chennai, Tamil Nadu. After getting satisfied with reliability, the process has been taken for analysis and discussion.