CHAPTER IV

THE RESEARCH DESIGN

This research undertaking is what Nowak (1977: 25) would call a research reconnaissance. Consequently the problem is well perceived, but not so well crystallised or unambiguously spelt out and posed for this study. As Nowak would argue many important hypotheses or problems have been formulated not at a desk but in the course of confrontation with the field under investigation and to exclude such a possibility right at the outset and to adhere too rigidly to the rule that research cannot commence without a clearly-defined problem would put one in danger of going along well-trodden paths and, in the longer perspective, of producing sterile research.

Again to cite another authority "when the approach is phenomenological, trying to show how people make sense of their social relationships, there is no possibility of following a Hypothesis, Methods, Results, Conclusions, Format. Indeed, it is the rejection of the determinism in the natural science model, that is the unifying force in much recent social science" (Shipman 1981).
Regardless of the research approach adopted, the responsibility of the researcher to provide the readers, all the relevant details of procedure, particularly the manner of collecting data, remains. In this respect the researcher had geared himself to meet the standards prescribed by Shipman (1981) for pursuing a scientific enquiry.

In evaluating any piece of social research, four crucial questions are to be raised about evidence, the beliefs of the researcher, the conceptual framework in which he has worked, the design chosen, or the techniques used in data collection, analysis and interpretation.

**Key question No.1**

If the investigation had been carried out by someone other than the author, using his methods, would the same results have been obtained?

The concern here is with the reliability and dependability of the methods used.

**Key question No.2**

Does the evidence really reflect the reality in examination?

The concern here is with the validity. Consistent results may not get near the truth. The picture presented may be consistent, but may still be unrelated to reality.
Key question No.3

What relevance do the results have beyond actual research?
The concern here is with the extent to which the results can be generalised.

Key question No.4

Is there sufficient detail on the way the evidence was produced for the credibility of the research to be assessed?

The responsibility of the researcher to provide his audience with detail of his research procedures applies, regardless of the research approach used. This is in fact the distinguishing feature of scientific reporting as contrasted with the sensational, investigative journalism, covering the same problems or issues.

Research Methodology:

Research methods are classified as applied research and pure (also known as fundamental/theoretical) research. The application of applied research technology is to put the theory to test. Recognising the fact that applied research and pure/fundamental research are not opposed, but are complimentary, the present study employs pure research method to answer the research problem posed viz., "Why industrial relations at some selected enterprises are what they are - good or bad - as perceived by the workmen themselves". Pure/fundamental research helps to find the central factors in a practical problem. The endeavour in this aspect of research is to identify
features of micro level organisational ethos contributing to comparatively conflict-free (even if not harmonious) industrial relations.

Research Process:

There are indeed two ways to approach research. Researchers who use the inductive approach immerse themselves in an area of interest and let the data suggest important variables and hypothesis. They start with a rather open mind and try to avoid presuppositions. As their research proceeds they induce hypothesis from examination of the data. The hypothesis state the relationship between two or more variables.

Deductive research (hypothetico-deductive method) proceeds from the opposite direction. The researcher starts with the specific assumptions and deduces the hypothesis before he or she collects any data. The use of logic in making deductions from a priori (before gathering data) assumptions is emphasised.

A specific hypothesis may be reached, either from below by induction, or from above by deduction.

In this study the inductive research methodology appeared appropriate and accordingly adopted.

Hypotheses are defined as tentative statements about things that the researcher wishes to support or refute. The researcher in this case does not wish to either support or refute.
Text books do generally warn that hypotheses are indispensible for scientific research. It is true that formulation of hypothesis gives definite point to the enquiry, aids in establishing direction in which to proceed and helps to delimit the field of enquiry by singling out the pertinent facts on which to concentrate and to determine which facts should be set aside. "The use of hypothesis, thus prevents a blind research and indiscriminate gathering of data which may later prove irrelevant to the problem under study" (Young 1961: 104). "The only difference between gathering data without a hypothesis, and gathering them with one, is that in the latter case we deliberately recognise our limitations of our senses and attempt to reduce their fallibility by limiting our field of investigation so as to permit a greater concentration of attention on particular aspects which past experience leads us to believe are significant for our purpose" (Lundberg 1942: 119).

Notwithstanding the exhortations cited, the researcher in this case, after careful consideration, has opted to follow Novak (1977: 14).

"Many text-books on social research contain a directive recommending that, before beginning a piece of research, one should clearly formulate a hypothesis which the results of the investigation would decide one way or the other. This does not seem to me to be indispensable. In embarking on a piece of research in which we are interested in the truth of a hypothesis
we formulate the question: "Is it true that....." or "Is the following assertion correct.....".

"Individual hypothesis may also differ in regard to the assertion factor i.e., the degree of conviction on the part of the researcher as to the truth of the assertions which is given the name of hypothesis. At times the assertion factor is so strong that the researcher undertakes his investigation in order to prove the truth of what his hypothesis asserts. This indicates (if the researcher's conviction is based on knowledge previously amassed and not solely on his conjectures) that we know the phenomena under investigation to such an extent that we are in a position to evaluate at least the probability of various states of affairs being the case and, out of a number of possible hypotheses, to choose the one whose truth seems most substantiated in the light of earlier knowledge. Notwithstanding our convictions at the moment when the hypothesis was being formulated, the final argument (and sometimes only an additional argument) in favour of its being true will be provided by the complete research.

Finally, it may be that so little is known about the object under research that we cannot formulate hypothesis with even very weak assertion factors, nor even formulate relatively unequivocal open questions. In this situation, in undertaking our research, we know rather its object, or some times the terrain it covers, and we assume that the problem will take shape during the first phase of contact with the terrain" (Methodology of Sociological research - Stefan Novak - 1977 : 14).
Sharma (1987: 18) a reputed industrial sociologist records in his recent research work titled 'Not by bread alone', "this study followed its own evolutionary course. It started with no preconceived notion, no hypothesis, no conceptual model and, in fact, no previously developed questionnaire or an interview schedule. It began, instead, as an unstructured and open-ended enquiry". Sharma (1987: 18) also states "There is no attempt to test any hypothesis or model and, therefore, I have no desire to force facts into any particular conceptual box".

Research elements:

There are two types of research, distinguished by the fact that they provide different kinds of evidence about causality:

(1) Experimental research;
(2) Correlational research;

Correlational research examines how the variables go together. What changes in variable No.1, are associated with changes in variable No.2. Studies of such questions are correlational studies if they examine naturally occurring changes in one variable (changes not caused by the researcher) and measure the changes in the second variable. When one cannot control the variables, a correlational design is suggested. In correlational research design, the researcher observes and measures relationships between variables which occur naturally
without his assistance. The research process in this study employed for empirical investigation, both, ex-post facto correlational and survey methods. Ex-post facto research as a systematic empirical enquiry is appropriate in this study where the investigator does not have direct control of independent variables because their manifestations are beyond his reach and are not capable of being manipulated. Ex-post facto/correlational research takes things as they are. As Kerlinger (1978: 379) points out 'inferences about relations are made, without direct intervention from concomitant variation of independent and dependent variables'. Ex-post facto research need not have any particular hypothesis. In fact it is advisable not to have any particular hypothesis that would lead to a spurious relationship between variables.

A variable is anything that varies (changes) in amount or type. Research projects attempt to study variables. If the contours of topics is not explored adequately and it is required to locate important variables, induction research is advisable. After all, it is hard to develop significant hypothesis if the researcher does not know what the critical variables are, or what the relations between the variables are. This is the position prevailing in industrial relations. Industrial relations is a product of many variables. Experimentation to isolate certain variables alone in order to study their effects is not possible. One cannot also classify in industrial
relations the variables as significant and insignificant. Also interaction among variables in industrial relations are complex. Effects of some interactions become causes for further effects, confusing the whole etiology. Measurement of variables is difficult in industrial relations.

Charles Darvin, Goodall, Roger Barker, Piaget, have all attempted induction research. One of the top class research studies in industrial relations - British Factory, Japanese Factory - by Ronald Dore - is an induction research study. In academic research it is unfortunate that deductive approach is favoured and inductive approach slighted.

Process of gathering data:

Inductive researcher is not just gathering data for the satisfaction of data gathering. Actually the researcher is looking for significant variables. Research problems are distinguished as questions about variables, and questions about relations between variables, since the method used to establish the values of variables are, in general, different from those used to grasp the relations between them. A survey questionnaire provides us with information about variables "operationalised" in the form of questions which characterise the respondents. Statistical analysis of the survey data will enable us to assess the statistical relationships between these variables.
Correlation is not (necessarily) causation. In a correlational research design, relationships between variables occur naturally without researcher's assistance, which are observed and measured. No doubt, in industrial relations research, correlational designs make it difficult to untangle interaction or to decide which variables are causes and which are the effects. The endeavour in this research is in identifying interacting variables and fitting them together.

Scientific method requires that conclusions are based on empirical data. In industrial relations, we have a surfeit of conceptual definitions wherein a researcher defines the concepts in terms of other concepts that are part of theoretical system. The crucial exercise in this study is the operational definitions. The conceptual definitions do not indicate what data to gather. Operational definition specifies the research operation process viz., what could be legitimately studied in a scientific way. It is however required to demonstrate in this study that operations do in fact really measure the concept — i.e., that the operational definition is both reliable and valid. A method of measurement is reliable if it always produces the same result under the same conditions. A measure is valid if it really measures what it is supposed to measure.

An operational definition may be a questionnaire, an attitude survey, a physiological measure, or projective test. In this study the operationalised definitions are in the questionnaire at annexure.
Plan of Research:

The research design adopted in this study has drawn inspiration and has also taken a cue from Ronald Dore's classic comparative study - British Factory, Janapenese Factory. In this outstanding research study Ronald Dore used a common check list for empirical investigation of two similar comparable industrial organisation viz., English Electric Co., Ltd., in U.K., and Hitachi Company Limited, Japan.

For the study on hand, the researcher had chosen six industrial establishments which are similar and comparable. All the six units chosen are located in Madras City. The assumption is that the workmen employed in these units are of similar origin and background and are exposed to the same or similar economic, political, socio-cultural milieu outside their enterprises. The internal industrial relations processes within the industrial establishments are the crucial variables proposed to be studied in. depth. The six industrial units selected are technologically sophisticated industries and all of them, though public limited companies, are in private capital sector. Nationalised public sector enterprises, government undertakings, joint sector enterprises, co-operative ventures are not represented in the six units referred to above. The relevance of the study is therefore more in respect of private capital enterprise.

Choice of Industrial Units for Study:

The choice of the six units is deliberate. Fully conscious of the bias involved in the process, the researcher has
selected six units so as to include both, units with good industrial relations record and 'not so good' industrial relations record. What is good and bad industrial relations is begging the question and is debatable issue. However, all the good units selected in the list had in fact won awards for good industrial relations from reputed bodies like All India Organisation of Employers, Federation of Indian Chamber of Commerce and Industry, Rotary Club and similar bodies. The units chosen as 'not so good' were the ones with recurring work disruptions, strike, lockout, and industrial disputes. It is conceded that in spite of some objectivity, and adoption of definite criteria for selection as above, the list is indeed arbitrary and in all probability biased. The researcher is aware and conscious of the bias and does not propose to justify the selection. The deliberate and conscious selection of the units, and their classification into good and 'not so good' units, vis-a-vis industrial relations performance, does not in fact, in any way vitiate the scientific nature of the study. The reason is, the researcher's classification is purely tentative. In fact, the major thrust of the research in this case is to find out directly by actual empirical investigation, the assessment and verdict of the workers themselves, on this point.

The following six industrial enterprises were taken up for intensive and indepth investigation.

1. Addison Tool Works Limited, Madras 600 002.
3. Lucas TVS Limited, Padi, Madras 600 050.
4. Western India Match Company Ltd., Madras 600 019.
In the discussions and the analysis to follow, the identity of the companies are concealed (by codes) to ensure anonymity to the organisations concerned. The data in turn are coded and tabulated in such a pattern that individuals or organisations are not identifiable.

**Sampling Strategy:**

Satisfactory solutions to sampling problems involve a combination of theoretical, practical and strategic issues. Sampling involves selection of units for study. There is no simple way of assessing whether a sample is adequate. The confidence that can be placed in the adequacy of a sample varies inversely with distribution of the characteristics being measured and directly with the size of the sample in relation to the universe. The larger the sample, the greater the confidence that a freak selection is not made. The greater the variety of characteristics in the population being measured, the larger has to be the sample number.

The size of the sample sought in this study was a number small enough for convenient data collection but large enough to be representative of the population from which it is drawn. The probability sample (random sample) technique was selected to totally eliminate judgement or bias of the investigator. Random samples do not guarantee absolute representativeness. At best, random samples ensure, not an even chance of selection, but a known chance. Large samples do reduce mischance, but are expensive.
The study focusses on specified population viz., unionised blue collar industrial workers.

Sampling in this research endeavour had to be done and done in such a way that one can generalise from the sample. Sjoberg and Nett (1968: 129) make a fundamental distinction between the general universe to which the theory applies and the working universe which is the set of all empirical units which the researcher defines as the basis of the study and from which sample is selected. The working universe no doubt refers to the same entity as the term population. This study involved choosing a working universe of manageable size and representative of the general universe.

This study is towards development of a conceptual frame work of industrial relations pertinent to the Indian socio cultural milieu. The universe is indeed immense. Goldthorpe et al had faced similar problems in sampling a stupendous universe in the study of affluent workers in U.K. They also had no ready list available from which a probability sample could be taken. To work within a budget, they chose Luton as a likely town because of the prosperity, rapid growth and firms known for their high wages, advanced personnel and welfare services and good records of industrial relations. Working within a small budget it was impossible for them to spread the interviews all over the country or sample all workers. Instead they chose Vauxhall Motors, Skejke Ballbearing and Laporte Chemicals, all in Luton. The final sample number was 326.
To take a cue from another mammoth study, an industrial relations at national level, Dore's (1973) British Factory -- Japanese Factory can be cited. Dore had taken Hitachi workers in Japan as representative of the nation's work force. For the purpose of his study (which received generous financial help from Nuffield Foundation and three other institutions), Dore had drawn a sample of 300 from the total 18,290 workmen employed in two Hitachi factories in Furusato and Taga.

In this study, the researcher had taken six industrial organisations in Madras city. The total labour force employed in these organisations was 5600. A sample of 115 was found feasible which works out to roughly 1 for 50 of the population.

Response:

Shipman (1981 : 70) warns "that none are as suspect as those in which non response rate have been omitted". The care with which a sample has been designed is wasted if the members of the sample chosen cannot be found or refuse to co-operate. For a survey of this type response rate is a very important indicator of the reliability of the survey and the dependability of the work. The interview technique adopted in this study had the advantage in that refusals could be correctly assessed.
Interviews, refusal and response rate.

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<tr>
<th>UNIVERSE</th>
<th>SAMPLE</th>
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<tr>
<td>Number of industrial establishments studied.</td>
<td>Total number of workers employed</td>
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<td>6</td>
<td>5,600</td>
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* Non response refers to cases where questionnaire was accepted and retained by the workers and which was not returned and could not be retrieved even after making 4 visits to the worker.
Data collection:

The data collection was by structured interview schedule/questionnaire. A questionnaire is defined by text books as a device for securing answers to questions by using a form which the respondent fills in himself. Schedule is a set of questions which are asked and filled by the interviewer (Goode and Hatt, 1952: 133). Both forms have much in common, particularly, the fact, that in both cases, the wording of the questions is the same for all respondents. In this study the workers when approached by the interviewer were given the option either to have the questionnaire left behind with them to be answered at their leisure or to answer the questions then and there directly to the interviewer. The majority of the workers chose to retain the questionnaire and offered to return them when the interviewer called on them later. In many cases, however, the interviewer had to make repeated visits to retrieve the completed copies of the questionnaire. Where the questionnaires could not be retrieved despite repeated visits, direct interviewing was resorted to. Only when even this was also not possible, substitute samples were tried out.

The questionnaire was in colloquial Tamil, the language understood by the majority of the workers. The questionnaire was repeatedly pretested for its length, depth, scope, objectivity and 'fatigue tolerance level' (in answering the questions) of the respondents.
Construction of the questionnaire / interview schedule was the most delicate, painstaking and crucial operation in the whole research exercise. Pretesting the questionnaire / interview schedule proved to be an elaborate and stupendous task towards uncovering omissions, biases, and ambiguities.

**Limitations of the study:**

Empirical studies of this kind do suffer from a number of well known limitations. First, the study is of particular factories and from a particular region. This obviously limits claims to typicality. Secondly and more importantly any researcher enters the field work situation with preconceptions and subjective values which in final analysis can never be eliminated, more poignantly so, in the case of a serving company executive which description fits the researcher. All that can be claimed is that the researcher is aware of the limitations and had sought to overcome by consciously avoiding longitudinal and impressionistic perspectives.

According to Thomason (1984) Industrial relations, is in its nature, concerned with values and, indeed, with different values which people seek to have others adopt in their dealings within the work context. Workers have their values linked with notions of human dignity; managers have their values associated with efficiency and order. Each may be said to use what we identify as the industrial relations system for
purposes of securing acceptance of their values by other party in order to improve the quality of working life or the efficiency of British industry, or something of that kind. For this reason, industrial relations, whether as a subject or as a practice, is not merely about creative arts and theoretical science; it is also concerned with ethics and morals. There can be no relegation of the subject or the practice to a concern simply with the theories of how control might be achieved, leaving out of account the ends to be served by doing so.

Industrial sociological research work is rarely value free; it tilts either way - managerially biased or Marxist inspired. From the choice of research topic, the assumptions made, concepts applied to the problem, investigative techniques used, value judgements and choices are ever present. While it may be impossible to be wholly value free, it is incumbent on the researcher to pursue steadfastly certain objectivity. Ultimately, "To justify the type of acceptability indicated by scientific label, sociology must not deny its audience the opportunity to draw its own conclusions" (Watson : 1980 : 28).