Chapter - II

METHODOLOGY
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The research is a systematic investigation or inquiry for new facts in any branch of knowledge. A social scientist has to face several problems while contemplating a scientific investigation he has to take utmost care to discover the possible answer to the questions through the application of scientific procedures. In behavioural sciences, the investigator is cautious regarding the designing of the study, deciding appropriate tools to gather information, selecting samples and using most suitable statistical techniques to test the hypothesis that makes the research inquiry precise and objective.

Research as defined in the Encyclopaedia of Social Science refers to the manipulation of things, concepts or symbols for the purpose of generalizing to extend, correct or verify knowledge and whether that knowledge aids in construction of theory or in practice of an act. Edward (1968) stated that “In research we do not haphazardly make observations of any or all kinds but rather our attention is directed towards those observations that we believe to be relevant to the question we previously formulated, the objective of research as recognized by all sciences, is to use observation as a basis of answering the question of one’s interest. Thus, a research is an original contribution to the existing stock of knowledge making it for its advancement. It is a continuous persuit of truth through conducting observations, making comparisons and carrying out experiments.

Subscribing to the requirement of the scientific investigation, the present study is an attempt to find out the influence of job strain, organizational commitment and certain demographical variables on railway
employees health. The following procedures have been adopted in order to complete this small piece of research work.

SAMPLE

In social sciences research including psychology the researcher must be clear in research design and selection of sample according to the requirements of the study. Every researcher faces some difficulties while deciding the sample size and its selection procedure because it has greater importance in scientific investigation. It is not practically possible to include all the individuals of the population of interest because of the limitations of an investigator particularly in social sciences research hence, the sample from a population is required. The adequate sample size is essential for scientific investigation because it plays important role in statistical analysis and drawing inferences about the population of which the sample is a part. The significance of sample size is determined by the kind of problem and the purpose of the investigation.

The Indian railways is one of the largest system of the world providing employment to about 1.5 million employees, which is a largest government undertaking in this country, it plays vital role in economic, industrial and social development of our country (Manorama Year book, 2003). There are 9 different zones of railways and employees work in various groups at different positions and levels, the nature of job differs categorywise like some job require more physical and mental activity at work while some job require more skills and mental process for example the job of drivers and guards require hyper alertness, the jobs of T.T.E. and Enquiry and reservation clerks are primarily concerned with public dealing
while the job of assistant station master, rail track inspector, shunting master involves rail track and safety maintenance while the employees in office deal with accounts and records.

In some jobs the employees experience more work pressure while performing their duties as a slight mistake can be disastrous. This seems to make them more susceptible to job strain and stress. As, the railway carry about more than 11 million passenger's every day, a little mistake on the part of any group of employee can be at the cost of the lives of hundred of innocent passengers on board. Thus, it is important to know about their job related consequences on their mental and physical health. The employees were selected randomly from various railway stations such as Agra, Aligarh, Bhopal and Gwalior, as the nature of job and work assignments of each category of the employees at a particular position is same across the country. So the groups required in this study were selected as per requirements of the study, which were in reach of the present researcher.

The sample of present study consisted of 321 railway employees comprising:

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<tr>
<td>Drivers</td>
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<td>Guards</td>
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<td>T.T.Es.</td>
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<td>ECRCs</td>
<td>51</td>
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<td>ASMs</td>
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<td>CIOs</td>
<td>52</td>
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<td>Total</td>
<td>321</td>
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TOOLS

The psychological tests are used to measure behaviour of the respondent objectively, but due to the complex nature of human behaviour, there is no single psychological test which can tell us about all aspects of behaviour, so for measuring behavioural aspect of each individual, a researcher requires separate psychological test. Among the various methods employed in behavioural science, questionnaire method is preferably an important tool in gathering information from the respondents about certain issues. The description of various tools used in this study are as given below:

**Job Strain Questionnaire**: Job strain questionnaire developed by Shalinder Singh (1988) was used in the present study. There are 14 statements in this scale which reflect the wider range of job strain. The job strain questionnaires measures 3 different dimensions: Latent hostility, Depression, Physical strain.

The respondents were requested to read each statement carefully and make a self assessment on a five point scale where '1' means “never”, '2' means “rarely”, '3' means “sometime”, '4' means “rather often” and ‘5’ means “nearly all the time”. The Question No. 6, 7,8 under dimension of depression are false keyed questions here the scoring procedure will be reversed. The minimum score is 14 and maximum score is 70. The reliability of three dimensions are: latent hostility (.83), depression (0.73) and physical strain (0.82).
Organizational Commitment Scale: The organizational commitment scale was developed by C. Balaji (1984) it contains 15 items, each item has to be rated on a five point scale where ‘1’ means “never”, ‘2’ means “rarely”, ‘3’ means “sometime”, ‘4’ means “rather often” and ‘5’ means “nearly all the time”. In which 10 are true keyed questions and 6 are false keyed questions which measures the respondents commitment to work rightly.

In this scale the question nos. 6, 9, 11, 12 and 15 are false keyed where the scoring procedure will be reversed and the reliability of the scale is .72. The scores vary between 15-75.

Mental Health Inventory: The mental Health Inventory was developed by Dr. Jagdish and A.K. Srivastava (1983) to measure mental health of normal individuals. The scale contains 56 items in which 32 are “false keyed” and 24 are “true keyed” items. It is a 4 point scale and has 6 dimensions. In the scale ‘4 was’ assigned to “Always”, ‘3’ to “often”, ‘2’ to “rarely” and ‘1’ to “never” in true keyed statements whereas 1, 2, 3, and 4 scores for always, often, rarely and never respectively for false keyed statements. The reliability of the dimensions are: Positive Self Evaluation (0.75), Perception of Reality (0.71), Integration of Personality (0.72), Autonomy (0.72), Group oriented Attitudes (0.74), Environmental Mastery (0.71) and the reliability of overall mental health is 0.73.

Self Reporting Health Questionnaire: This questionnaire was developed by Dr. Mahmood S. Khan and Kanak Sharma (2002). The scale contains 35 items which are related to various dimensions of the physical health of the
respondents. It is a 5 point scale where ‘1’ means “never”, ‘2’ means “rarely”, ‘3’ means “sometime”, ‘4’ means “rather often” and ‘5’ means “nearly all the time”. The scale has 7 dimensions, the reliability of the dimensions are heart (0.26), digestive tract (0.11), eyes and ear (0.11), nervous system (0.23), respiratory system (0.47), skin allergies (0.36), musco-skeletal (0.82). The reliability of the overall physical health is 0.45. The scores vary between 35-175.

**Stress Mitigating Measures:** The scale was developed by Dr. Mahmood S. Khan and Kanak Sharma (2002). There are 25 items which assess the measures which a person uses frequently in order to mitigate/lessen the degree of stress. The subject is required to put a tick mark (✓) against the listed measures which they use to alleviate stress.

**Biographical Information Blank (BIB):** For recording background information of the respondents, biographical information blank (BIB) was prepared. This includes: age, designation, department, work experience, qualification, etc.

**STATISTICAL ANALYSIS**

Selection of appropriate technique for data analysis depends upon the nature of data and design of the study. In the present research work all possible precautions were taken by the investigator keeping in mind the basic purpose of the research work. In this study the effect of independent variables such as job strain, organizational commitment and certain demographic variable on dependent variable i.e. mental and physical health
is to be analysed. The data obtained from various category of railway employees may also be analysed by means of other statistical methods, but the ‘t’ test is undoubtedly a most powerful parametric test is often preferred over other statistical techniques, so this test was found more suitable to analyse data because this test will serve the purpose of finding out the significance of mean differences if any, between various comparison groups, in term of job strain, organizational commitment, physical and mental health to arrive at conclusion and interpret the findings.