Chapter - III
Problem and Hypotheses

Noise in dwelling places has long been a problem. But only in the last few years has it been regarded as an important public health problem. Health effects of noise previously have received little attention because of the difficulty of demonstrating that noise causes disease. On the other hand it is apparent that noise can be very irritating and can impair health and social performance. For example, it can impair communication, can interfere with sleep thus causing lack of rest and so it can affect social adaptation also.

In an article, 'Noise Can Drive You Crazy' published in April, 1989 in the M.P. chronicle, the results of a study by brain specialist Dr. Anne Tannahill of Belle Vue Hospital, New York has been quoted. Dr. Tannahill showed the detrimental effect of sound on the mind, whereby bursting a blown-up paper bag raised the pressure on the brain one point higher than either morphine or nitroglycerine - the most powerful drugs for increasing brain pressure.

Scientists claim that noise has a greater power of penetration than bullets. Loud and persistent noise can create havoc with the human central nervous system leading to widespread damage.

In the industrial setting, noise rarely affects output
directly, but is associated with increases in errors, accidents and absenteeism. For both auditory and visual modalities it reduces efficiency in perceptual discrimination, favouring signal impact at the expense of signal relevance. Accuracy in vigilance tasks, and frustration tolerance are very much reduced when the noise was experienced in certain adverse circumstances.

Apart from physical harm, noise also affects the morale of the person being exposed to noise. The fact that noises are generally unpleasant may be a factor in social reactions and relations, even when they do not markedly influence individual performers. Intermittent noises are generally the most disturbing as far as emotional reactions are concerned, while noises which are meaningful are the most distracting.

Although all people are affected by noise, yet not all are equally affected by it. 'Sensitivity' is thought to be an intermediate variable between noise exposure and the annoyance reaction. Noise-sensitive people are identified as those having extremely high annoyance responses.

Noise-sensitive and noise-insensitive people show broadly different patterns of reaction to noise. At identical levels of exposure, their reactions are correspondingly high and low. It is accepted that the highly sensitive ones are continually distressed and wish to move or take action against the noise while the less sensitive
adapt and each time pay less attention to it.

We are all noise conscious. Some times we are bothered, sometimes we are not. But most of the time, the noise surrounding us is plainly not healthy, rather it is downright nasty. So, in view of the immense importance of applied aspects of noise, the following problem was formulated for investigation in the present study.

Problem:

To study whether the nature of working environment (quiet/noise) plays any role in affecting the mental output of subjects.

Hypotheses:

Although there is lack of agreement amongst investigators as to what actually constitutes noise, yet most of them accept and comprehend its irrelevance, unpleasantness and attention distracting property. In view of these common features the following hypotheses were formulated for testing in the present study.

1. Since noise is claimed to have a distracting property, it was hypothesized that there would be quantitative fall in the output of mental work under noisy condition.

2. In view of the distracting property of noise it was further hypothesized that there would be a greater fall in skin resistance due to work under noisy condition than while working under quiet condition indicating greater physiological energy expenditure.
3. Due to marked individual differences in susceptibility to noise, it was predicted that the effects of hypotheses 1 and 2 would be more pronounced in the case of high noise sensitivity Ss.

4. In the light of the above mentioned three hypotheses, it was further predicted that there would be an interaction between the nature of working environment (Quiet/Noise) and noise sensitivity level.

5. The subjective data would be also indicating the adverse effects of noise particularly in the case of high noise sensitivity group.

After the formulation of the hypotheses, we may now proceed to the next chapter dealing with the design and methodology.