CHAPTER III

PROBLEM AND

HYPOTHESES
Many aspects of urban life can be viewed as work under stress. People have roles, duties, and tasks to perform while all around them there is noise, crowd, bureaucracy, garbage and traffic. One of the major stressors observed is noise. For those with normal hearing, sound is one of the most important means of knowing about and experiencing the world. A silent world is virtually impossible to imagine. However, psychologists are especially concerned about the effect of noise because much of modern industrial activity is noise producing. The amount of environmental noise to which people are exposed in cities is also extremely high. Not only do traffic, construction, machinery of all kinds, and powerful stereo equipments produce noises of great intensity but millions of people in a relatively small area also create high noise levels. Some of these noises are meaningful while others are meaningless.

It is generally believed that continued exposure to noise in real life can be a source of physiological stress possibly capable of causing health disorders, apart from direct damage to the auditory receptor system. These non-habituating reflexive responses to noise are sufficient in character to cause ill-health. The emotional meaning conveyed by the different noises also play an important role in affecting a person.
Noise also appears to have a long term adverse effect on interpersonal relations, studies, normal sleep pattern, and patients. It is a menace which cuts down overall efficiency of the person. Regular low intensity noises and music may enhance the efficiency of some people on certain boring and repetitive tasks but when these noises are above the prescribed limit of 60 dB, they become harmful. Noise in the environment may be meaningful or meaningless, but it takes its toll on human body.

The noise in the environment may be familiar, meaningful or meaningless; but it never goes unregistered in the mind. Environmental noise plays havoc with human body. The auditory system has some direct neural connections with the sympathetic nervous system at levels below the brain proper. It is believed that via these connections sounds can cause autonomic-system responses that occur without any conscious 'thought' processes as to the meaning or effects of the sounds and thereby serve as a warning system about the presence of things in the environment. In this regard, it can be noted that sound unlike light, bends around and, to some extent, goes through objects. These are omnidirectional, and are generated and transmitted during night as well as in the daytime.
It is commonly believed that more work is produced under quiet than under noisy condition, but there is no consistency in the experimental findings in this regard. A number of studies have indicated health problems related to the workers who are exposed to intense meaningless sounds. Some additional findings show that sounds composed of conversation seem to have the worst effect on performance and are reported to be the most disturbing. Some research findings suggest that long term exposure to such sounds have detrimental effects of a very specific nature. Infact there is a lot of disagreement about the effect of noise on human beings. Some studies indicate adverse impact of noise on work efficiency, some reveal that noise enhances output while there are some studies which claim that noise does not affect efficiency. It is worth mentioning at this stage that the earlier work on noise did not take cognizance of individual's noise sensitivity level and this uncontrolled variable possibly could have been the culprit for inconsistent and contradictory findings with reference to the effect of noise on work/efficiency.

Keeping in view the existing contradictory results due to many uncontrollable variables and effects of same type of noise on different persons, the present investigator formulated the following problem for investigation.
Problem:

Role of noise meaning content on mental efficiency in low and high noise sensitivity subjects.

Insipite of the contradictory results most of the investigators believe that work under noisy conditions is likely to the more expensive both in terms of quantitatively and qualitatively. The physiological equilibrium of the body is disturbed.

In the light of the existing literature on noise and the identification of the noise sensitivity level. The following hypotheses were formulated for investigation:

1. The effect of noise on mental efficiency (quantitative as well as qualitative output, and physiological energy expenditure) would be adverse under noisy conditions.

2. Both the quantity and quality of mental work would be more adversely affected by meaningful compared to meaningless noise.

3. Mental work under noisy conditions would be physiologically costlier compared to work under no noise condition as indicated by blood glucose level.
4. There would be interactions between the effects of noise and noise sensitivity level.

5. The effect of noise on mental efficiency (quantitative as well as qualitative, and physiological energy expenditure) would be more in case of high noise sensitivity compared to low noise sensitivity group.

6. Content analysis of introspective reports would indicate that high noise sensitivity group is more affected by noise compared to low noise sensitivity group.

After the formulation of hypotheses we may now pass on to the chapter dealing with the design and methodology.