

# AMONG INDUSTRIAL WORKERS HUMAN ENGINEERING

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## ABSTRACT

Some of the psychological aspects of work and fatigue have been discovered and understood, others have been discovered but not applied widely and perhaps others remain to be discovered. The term Human Engineering is the study of people and of work methods; it includes a study of equipment design, packing of work, hours of work and environmental condition of work. Its purpose is to improve productivity, job satisfaction, human relationship, performance of operation, simplify the work methods, and to provide safety measures. Social scientist has introduced many basic concepts in industrial psychology, however we are still unable to understand the work situation (work environment) and human performance. Human Engineering made efforts to achieving optimum efficiency in production and make work more pleasant and satisfying the employees. In this study the researcher made an attempt to explore the interpersonal behavior of the workers, working environment and employees need structure among the textile and engineering employees at Coimbatore District. Using interview schedule, data was collected through systematic random sample of 150 employees in textile and engineering industries at Coimbatore.

**Key Words:** Human Engineering, Interpersonal relationship, Self-behavior, Maladjustment, Interpersonal style, Working environment and Fringe benefits.

## INTRODUCTION

In current usage, Human Engineering or Engineering Psychology is a rather flexible term (Aluisi and Murgan, 1976, Chapanis, 1976, McCormick, 1976). The flexibility also characteristics other terms commonly employed to refer to the more comprehensive area such as Human Engineering, Human Factors, and Human Performance Engineering. The human factors problems to which engineering psychology address them typically draw upon many other sciences and profession. Present day engineering psychology differs in a numbers of ways from earlier work. The most conspicuous differences are in its magnitude. Since its formal beginnings in World War II. After the war most of the industries changed in Mechanization.

## INTERPERSONAL RELATIONSHIP

Self concept: What am I? Mankind is unique because only a human being has the capacity for thinking about his or her behavior and appearance. Each person has an attitude toward himself or herself and this attitude comprises the self or self-concept. The self-concept has three aspects: Beliefs, feeling and behaviors. The beliefs component represents the content of the self. This is illustrated by such thoughts as “I am intelligent, sociable, sincere, over weight” etc. The feeling component about one’s self is reflected in feelings of self-worth or in general as I am O.K. or I am not O.K. Finally the behaviors component is the tendency to act towards ones self in a self-deprecating or self-enhancing manner.

In order to maintain interpersonal environment and to maximize congruence or harmony (like any other individual) actively uses certain mechanisms to stabilize interactions.

1. Misperceptions, 2. Selective Interaction 3. Selective Evaluation of the other Person,
4. Selective Evaluation of self, 5. Response evocation.

## WORKING ENVIRONMENT

It has long been recognized that working efficiency depends in part upon the characteristic of the working environment. Engineers have been concerned with the establishment of illumination standards for different types of work, the maintenance of suitable temperature and other atmospheric conditions, the reduction of noise, and similar problems. Considerable interest has been aroused, too by the possible uses of music to relive monotony improve employee morale and facilitate certain kinds of work. It is apparent that such problems pertain not only to factories and officers but also to schools, libraries, homes, waiting rooms, and any other environments designed for prolonged human use. From a different angle, recent developments in space travel have stimulated intensive research on the effects of certain extreme environment conditions upon human performance.

## WORK PLACE DESCRIPTION

1. A worker with attributes of size, strength, range of motion, intellect, education expectations, and other physical/mental capacities.
2. A work setting comprised of parts, tools, furniture, control / display, panels, and other physical objectives.
3. A work environment created by climate, lighting, noise, vibration and other atmospheric qualities.

## DATA AND METHODS

### Objectives

1. To explore to interpersonal behavior of the workers.
2. To analyze the working environmental factors.
3. To find out the facilities of fringe benefits.

### Research Design and Sampling

Descriptive research design and systematic random sampling method were used. Coimbatore a highly industrialized district comprises of largely textile and engineering industries. The researcher selected Coimbatore district. There are 275 textile mills and 150 engineering industries situated in Coimbatore district. A list of textile mills was obtained from South India Mills Association (SIMA) and another list of engineering units was obtained from South Indian Engineering Manufacturing Association (SIEMA). By lottery method each one textile mill and engineering unit were selected for the study i.e. Thillai Nathan Textile (TNT) and KSB Pumps & Valves industry. In KSB there are 532 workers in that 300 were permanent workers and remaining were casual workers. In TNT among 640 workers only 375 were permanent workers. It was decided to interview each 75 permanent workers from each organisation. From both organisation pay rolls were obtained and through systematic random sampling method the respondents were selected. Thus a total of 150 respondents were interviewed.

## RESULTS AND DISCUSSION

As far as the personal profile of the respondents is concerned, majority (94 percent) of the respondents were in the age category of upto 40 years. The organizations prefer young age group to meet their target in productivity. Most (80.67 percent) of the respondents were male because the nature of work involves hard work, so men were selected for work. More than one third (40.67 percent) of the respondents had completed their high school education, it is due to the fact that the nature of work involves skilled work. More than two-third (73.33 percent) of the respondents were married. More than half (50.67 percent) of the respondents do not have previous working experience, the reason for it was that majority of them were young and also after their education joined in services. More than half (51.33 percent) of the respondents were with high level of interpersonal behavior, it source team spirit among the peer group members. 53.33 percent of the respondents had moderate level of environment factors. The management had an attitude to get high profit without concerning the work environment. More than half (52.67 percent) of the respondents level of job satisfaction was moderate. The findings shows that the expectations of the employees are high, but the organization failed to meet it, further the supervisor - employee's relationship was not cordial. So the young employees job satisfaction was less.

Table 1. Association between age and other variables.

Variables	X <sup>2</sup>	df	Significance
Self – behavior	1.014	2	Not significant
Maladjustment	8.682	4	Not significant
Interpersonal style	8.272	2	Not significant
Income	11.54	4	Significant
Environment	0.02	2	Not significant
Fringe benefits	4.836	2	Not significant
Work experience	5.988	2	Significant

There is a no significant association between age and self- behavior, maladjustment, interpersonal style, environment and fringe benefits. However age is significant associated with income and work experience. Age is not influencing the interpersonal relationship it is due to the culture prevails in the industry, team spirit among the employees and face to face interaction between employer and employee. There is significant association between age and income by the respondents. The reason is age increases the employees work experiences increases with high salary.

TABLE 2, Association between education and other variables

Variables	X <sup>2</sup>	df	Significance
Self – behavior	2.362	2	Significant
Maladjustment	2.064	4	Not significant
Interpersonal style	3.555	2	Significant
Income	4.438	4	Significant

Environment	1.09	2	Not significant
Fringe benefits	0.582	4	Not significant
Work experience	9.25	2	Not significant

There is a significant association between education and self-behavior, interpersonal style and income. The educated respondents have chance to get more income, and they will maintain good interpersonal relationship with others. There is no significant association between education and maladjustment, environment, fringe benefits and work experience. The work environment is decided by the management, hence the education determines the personal and psychological factors of the respondents.

## CONCLUSION

The researcher found that the human engineering factor was satisfactory. The following factors were taken for analyzes: social-economic conditions, status, working methods, interpersonal relationship, work environment, and so on. The result was more than half of the respondents were high level of interpersonal relationship. Its include the respondents self-behavior, maladjustment and interpersonal style. One-third of the respondents had moderate level of environment factors. The work environment factors not related to the respondents education. So it is clear from the study that interpersonal relationship, working environment and fringe benefits not influenced to the personal variables.

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