

Research Paper :

Standardization of satisfaction scale with reference to environmental parameters and work output of office workers

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ABSTRACT

The present investigation was undertaken with an objective for construction and standardization of satisfaction scales with reference to environmental parameters and work output of office workers. The investigation was carried out in Parbhani city of Maharashtra state during the year 2008 – 2009. Procedure followed as the collection of items or statements, selection of items and analysis of items. Thirty satisfaction statements (ten from each part) regarding thermal comfort, illumination and work output were standardized. The reliability of attitude scale was highly significant for thermal comfort ($r=0.80$), illumination ($r=0.76$) and work output ($r=0.65$). The validity of items were ensured on the basis of significant 't' values.

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Key words : Thermal comfort, Illumination, Work output standardization of scales

Environmental parameters include thermal comfort and illumination. Work output of office workers depends on environmental parameters. When office workers are satisfied about thermal comfort and illumination that time it enhances the work output of office workers. That's why environmental parameters and work output is interrelated to each other (Jorn Tofum, 2002).

In social science research, satisfaction of person or group about social or any psychological object is of paramount importance. The success or failure of many social reforms would mainly depend upon the people's satisfaction about it. The study of satisfaction about environmental parameters and work output is not only important from purely psycho - sociological point of view, but also it has a great importance in other common matters of life.

According to Krench *et al.* (1962), satisfaction is an enduring system of positive and negative evaluations, emotional feelings pro and can action tendencies with respects to social objects. Edwards (1957) defined satisfaction as the degree of positive or negative effect associated with some psychological object. Keeping in view, an attempt was made to develop the scale to measure the satisfaction of office workers towards thermal comfort, illumination and work output.

Sabharwal and Verma (1997) have shown that the reliability of attitude scale was highly significant for learners ($r = 0.61$) and teachers ($r = 0.88$). The validity

of items were ensured on the basis of significant 't' values.

METHODOLOGY

Procedure for construction of statical scale:

Collection was made of items or statements of the first step in the construction of satisfaction scale to collect a good number of statements of thermal comfort, illumination and work output. Fifteen statements for thermal comfort and twenty one statements for work output were collected referring to different journals, magazines, special articles and in consultation with the functionaries of the Department of Psychology and Environmental Science to see the statements, also some opinions about the psychological objects under study. Likery (1932) technique of summated rating was adopted for construction of satisfaction scale for thermal comfort, illumination and work output.

FINDINGS AND DISCUSSION

The findings obtained from the present investigation are presented below:

Selection and analysis of items:

The statements comprised of content area which were derived from relevant literature and discussion with the environmental scientists, home scientists and ergonomists. These statements were scrutinized against the criteria of Edwards (1957) for statement construction.

All the statements of thermal comfort, illumination and work output for office workers were retained. They were presented to 30 judges and asked to examine the statement for its being appropriate, somewhat appropriate and not at all appropriate. Based on the judge's responses, some items were rejected from thermal comfort, illumination and workout and finalized 10 items from each

parameter. The statements were rewritten in the light of comments of the judges. The finally selected statements were administered to 20 office workers and 20 non-office workers. They were asked to give their reaction against each statement of five point ratings *viz.*, highly satisfied, satisfied, neutral, dissatisfied and highly dissatisfied and were assigned the weightage of 5,4,3,2 and 1 for positive

Table 1 : Satisfaction of office workers regarding thermal comfort in office

Sr. No.	Statements	't' Values
1.	How much satisfied are you about the provision of curtains to control the air flow?	2.92
2.	How much satisfied are you about the provision of AC?	2.87
3.	How much satisfied are you about the ventilation of office?	2.82
4.	How much satisfied are you about the exhaust fan for air circulation?	2.73
5.	How much satisfied are you about the plants near the windows?	2.62
6.	How much satisfied are you about the provision of cooler?	2.57
7.	How much satisfied are you about the humidity in office?	2.56
8.	How much satisfied are you about the location of fan?	2.32
9.	How much satisfied are you about drought control in office?	2.15
10.	How much satisfied are you about the temperature in office?	2.12

Table 2 : Satisfaction of office workers regarding illumination in office

Sr. No.	Statements	't' Values
1.	How much satisfied are you about placement of light fixtures?	2.98
2.	How much satisfied are you about wattage of lamp?	2.72
3.	How much satisfied are you about placement of light?	2.65
4.	How much satisfied are you regarding the colour contributing to reflectance of light in your room?	2.58
5.	How much satisfied are you about intensity of light?	2.52
6.	How much satisfied are you about type of light?	2.42
7.	How much satisfied are you about better visibility for work station?	2.36
8.	How much satisfied are you about curtains for avoiding glare?	2.21
9.	How much satisfied are you about reflectance of light on the work space?	2.17
10.	How much satisfied are you regarding control safety?	2.17

Table 3 : Satisfaction of office workers regarding work output in office

Sr. No.	Statements	't' Values
1.	How much satisfied are you about afternoon work output?	2.92
2.	How much satisfied are you about the work output during summer period?	2.87
3.	How much satisfied are you about the work output at the time of provision of fan?	2.62
4.	How much satisfied are you about the work output at the time of provision of coolers?	2.54
5.	How much satisfied are you about the work output during winter period?	2.52
6.	How much satisfied are you about the output of work in direct light?	2.44
7.	How much satisfied are with the work output while working with natural light?	2.39
8.	How much satisfied are you about the work output while working with artificial light?	2.33
9.	How much satisfied are you about morning work output	2.31
10.	How much satisfied are you about the work output during the rainy period	2.18

parameters and reverse for negative statements. The total score of each respondent was computed by summing the weights of individual items response. The scores were arranged in array (descending order). As suggested by Edwards (1957), 25 per cent of the subjects with highest and lowest total scores formed the criterion group for the evaluation of individual statement. The 't' values for each statement was calculated by using the formula as suggested by Edwards (1957). The statements having 't' values of 1.95 and above were selected for final satisfaction scale which consisted of 10 statements from thermal comfort, 10 statements from illumination and 10 statements for work output.

Reliability of the scale:

The reliability of satisfaction scale was tested by split half method for which correlative coefficient was found to be highly significant for the thermal comfort ($r=0.80$), illumination ($r=0.76$) and work output ($r=0.65$) (Table 1, 2 and 3).

Validation of the scale:

Validity of items were ensured on the basis of significant 't' values obtained earlier. This provided the scope of discrimination between statements, hence measured exactly what was intended to measure (Table 1, 2 and 3).

Conclusion:

As the scale was found to be reliable and valid, that's why standardized satisfaction scale will serve as a scientific tool for measurement of thermal comfort, illumination and work output of office workers.

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