

Study on Work Output of Office Workers in Parbhani City of Maharashtra State

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ABSTRACT Office work is visually demanding and has always required good environment for maximum comfort and productivity. Work output of office workers depends on temperature, humidity and illumination. In an office when all environmental parameters are comfortably provided to office workers, these automatically increase the work output of office workers. Present investigation is undertaken with an objective to correlate independent variables with work output of office workers and to measure perception of office workers about work output. Present investigation is undertaken in Parbhani city of Maharashtra state during the year 2008-2009. Looking into the advantages of questionnaire and interview schedule, both methods were implemented for the collection of data. It can be concluded that area of workplace at center of room is significantly correlated with satisfaction towards work output in a day ($r = 0.19^*$), artificial light ($r = 0.22^*$) and provision of the fan ($r = 0.22^*$) while other aspects are found to be non-significant. The work output as agreed by higher percentage of respondents is affected by illumination, workstation, ventilation and provision of coolers.

INTRODUCTION

A suitable environment is needed if one wants to feel comfortable and efficient at work. The environment feels comfortable when you are barely aware of the climatic conditions. It is only when the temperature decreases or increases beyond ones comfort limits that one become aware of discomfort (Jorn Tofum 2002).

According to Engdatil (1998), proper ventilation in any structure plays a very important role for supporting the physical environmental factor and making it comfortable for a person. Temperature and humidity of a work place is directly related to the ventilation. Natural air contains 21 per cent of oxygen. Thus, the flow of fresh air and natural light gives psychological comfort to the worker and thus enhances efficiency.

The thermal comfort and illumination is of

utmost importance. The efficiency of the worker is affected by these factors which contribute to the mood of the worker. The discomfort levels of work place leads to many health problems which are normally not taken care off. Work output of office workers is dependent on temperature, humidity and illumination. In an office when all environmental parameters are comfortably provided to office workers these automatically increase the work output of office workers. Considering these aspects, it becomes essential to correlate independent variables with work output of office workers and to measure perception of office workers about work output.

METHODOLOGY

The study was conducted in Parbhani city of Marathwada region in Maharashtra state during the year 2008-2009. Twenty-five respondents each from the administrative office of Marathwada Agricultural University, Collectors office, Zila Parishad Office, District Welfare office and Municipal Council office were randomly selected. Thus, the total number of subjects were one hundred and twenty-five selected randomly.

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Development of Questionnaire cum Interview Schedule

In general, the word questionnaire refers to a device for procuring answers to questions by using a form which the respondent fills-in himself. A schedule is the form containing some questions or blank tables which are to be filled by the respondent. Rating schedules are used for sociological or psychological research. They are used in cases where attitude or opinion is to be measured (Barnaby 1980).

Looking into the advantages of questionnaire and interview schedule, both methods were implemented for the collection of data. The questionnaire cum interview schedule was prepared to elicit the general information and specific information. General information included the independent variable, that is, Age, Education, Sex, Income and Type of work etc.

The aspects covered under specific information were schedule of openings, number of light fixtures, fans and coolers were known by application of developed scale. Questionnaire was pretested for its clarity, ambiguity, additions and deletions of question and the finalized questionnaire cum interview schedule was used for recording the data.

Data Analysis: Frequency, percentage and correlation were calculated by SPSS software developed by Tata Institute of Social Sciences, Mumbai.

RESULT AND DISCUSSION

A study on office workstation with respect to work output of office workers was carried out, and the collected data and statistical analysis have yielded the following results.

Table 1 describes the general information of the office workers. It is clear from the table that 65.6 percent office workers belonged to the age group of 45 years and above. The remaining 34.4 percent belonged to the first age group.

With respect to the education level of the respondents it is seen that majority percent of them were undergraduates, 16 per cent were educated up-to higher secondary level, while 12 per cent respondents were post graduates.

Classification of type of work yielded resultant in two major groups: clerical (88.8 %) and administrative jobs (11.2 %). With a random sample, the classification of respondents under

Table 1: General information of the office workers

S.No.	Particulars	(N=125)
1.	<i>Age (years)</i>	
	Age Group-I (35-45 year)	43 (34.4%)
	Age Group-II (45-above)	82 (65.6%)
2.	<i>Education</i>	
	H.Sc. (12th standard)	20 (16%)
	U.G. (B.Sc./B.A./B.Com.)	90 (72%)
	P.G. (M.Sc./M.A.)	15 (12%)
3.	<i>Type of Work</i>	
	Clerical	111 (88.8%)
	Administration	14 (11.2%)
4.	<i>Sex</i>	
	Male	113 (90.4%)
	Female	12 (9.6%)
5.	<i>BMI</i>	
	Group-I (19-21)	85 (68%)
	Group-II (21 & above)	40 (32%)
6.	<i>Eye Sight</i>	
	Short sighted	40 (32%)
	Long sighted	43 (34.4%)
	Bifocal	28 (22.4%)
	Normal	14 (11.2%)
7.	<i>Income Per Month (Rs)</i>	
	9500-10500	23 (18.4%)
	10500-11500	39 (27.2%)
	11500 - above	68 (54.4%)

Note: Figures in parenthesis indicate percentages

gender depicts 90.4 per cent males and only 9.6 per cent females.

The Body Mass Index of respondents shows that 68 per cent had 19-21 Body Mass Index and 32 per cent respondents had a Body Mass Index of 21 and above. Concerning the workplace and visibility, the eye sight of the respondents was studied and the results show that 34.4 per cent employees wore glasses for long sight followed by 32 per cent employees with short sight, while 22.4 per cent respondents wore bifocal lenses and only 11.2 per cent had normal eye sight.

It is evident from the table that the income of 68 respondents was Rs.11500 and above followed by 34 employees with an income range of Rs. 10500-11500 while 23 respondents had income ranging between 9500-10500 rupees per month.

It can be concluded that majority of the respondents belonged to age group of 45 years and above. 12 per cent respondents were post graduates. Monthly income of 54.4 per cent subjects was Rs.11500 and above. Majority of the respondents belonged to the clerical community. 11.2 per cent were having normal eye sight. 68 per cent respondents were having 19-21 Body Mass Index and majority that is, 90.4 per cent respondents were male members

Table 2: Correlation of independent variables with satisfaction regarding work output

<i>Satisfaction regarding independent variable</i>	<i>Work output in a day</i>	<i>Workout put in artificial light</i>	<i>Workout put in natural light</i>	<i>Workout put in provision of cooler</i>	<i>Workout put in provision of fan</i>	<i>Workout put in provision of curtains of cooler</i>
<i>Age Group</i>						
Group-I (35-45 Yr)	0.19*	0.21*	0.19*	0.12 NS	0.21*	0.15 NS
Group-II (45 and above)	0.21*	0.20*	0.18 NS	0.09 NS	0.23*	0.17 NS
<i>Area of Work Place</i>						
Center of room	0.19*	0.22*	0.12 NS	0.13 NS	0.22*	0.17 NS
Side of room	0.18 NS	0.19*	0.17 NS	0.15 NS	0.18 NS	0.13 NS
Near the door	0.17 NS	0.18 NS	0.19*	0.12 NS	0.17 NS	0.15 NS
Near the window	0.20*	0.17 NS	0.21*	0.09 NS	0.18 NS	0.19*
<i>BMI</i>						
Group-I (Normal)	0.19*	0.21*	0.18 NS	0.12 NS	0.21*	0.18 NS
Group-II (above normal)	0.18 NS	0.19*	0.17 NS	0.15 NS	0.20*	0.16 NS

Correlation of independent variables with satisfaction regarding work output is revealed in Table 2. It is clear from the findings that age group-I is significantly correlated with satisfaction towards work output in a day ($r=0.19^*$), artificial light ($r=0.21^*$) while other aspects are found to be non- significant.

Whereas in the second age group, satisfaction regarding work output in a day ($r=0.21^*$), artificial light ($r=0.20^*$) and provision of the fan ($r=0.23^*$) was significantly correlated and the other factors were found to be non- significant.

With increase in age artificial light and provision of the fan need to be improved. Similar thoughts have been expressed by Bommel et al. (2002) in 'Industrial Lighting and Productivity', that age is an important criterion since lighting requirements increase with age. Older clerical workers however, did show stronger preferences for higher luminance than younger ones.

It is seen from the findings that area of workplace at center of room is significantly correlated with satisfaction towards work output in a day ($r=0.19^*$), artificial light ($r=0.22^*$) and provision of the fan ($r=0.22^*$) while other aspects are found to be non- significant.

Whereas the area of workplace at the side of room is significantly correlated ($r = 0.19^*$) and the other factors were found to be non- significant.

While the area of workplace near the door is significantly correlated with satisfaction towards natural light ($r = 0.19^*$) and the other factors were found to be non- significant. Whereas the area of workplace near the window is significantly correlated with satisfaction towards work output in a day ($r = 0.20^*$), natural light ($r = 0.21^*$),

provision of curtains ($r = 0.19^*$) and the other factors were found to be non- significant.

Perception regarding workout is disclosed in Table 3. Work output is a very vague term, the results of perception regarding over all work output in the day concerning their environment and decided work for the day was enquired hence the factors which may affect the work output were studied.

Table 3: Perception regarding work output (N = 125)

S. No.	Statement: Do you feel your work output is affected by:	Agree	Disagree
1.	Humidity?	85 (68%)	40 (32%)
2.	Temperature?	92 (73.6%)	33 (26.4%)
3.	Illumination?	112 (89.6%)	13 (10.4%)
4.	Room comfort	79 (63.2%)	46 (36.8%)
5.	Work station?	105 (84%)	20 (16%)
6.	Air flow in room?	71 (56.8%)	54 (43.2%)
7.	Provision of ventilation?	97 (77.6%)	28 (22.4%)
8.	Provision of cooler?	94 (75.2%)	31 (24.8%)
9.	Color of Office?	87 (69.6%)	38 (30.4%)
10.	Provision of fan?	68 (54.4%)	57 (45.6%)

It is clear from the table that 89.6 per cent office workers agreed that work output is affected by illumination, followed by 84 per cent who approved that workstation effect output, 77.6 per cent admitted that ventilation has an effect on work output and 72.5 per cent respondents accepted that provision of coolers at office workstation affects the work output. While lower percentage but not below 50 per cent admitted that provision of fans affect the work output.

The percentage for disagreement regarding perception of work output were lower than fifty per cent, the comparatively higher values' dis-

agreement about provision of the fan (45.6 %) effect of air flow on work output (43.2%) and affect the room comfort on work output (36.8 %) were seen, while least percentage of disagreement was observed for illumination at workstation (10.4%).

Therefore, it can be concluded that the work output as agreed by higher percentage of respondents is affected by illumination, workstation, ventilation and provision of coolers.

CONCLUSION

It can be concluded that majority of the respondents belonged to age group of 45 years and above. 12 per cent respondents were post graduates. 68 per cent respondents were having 19-21 Body Mass Index and majority, that is, 90.4 per cent respondents were male members. While the area of workplace near the door is significantly correlated with satisfaction towards na-

tural light ($r=0.19^*$) and the other factors were found to be non- significant. Whereas the area of workplace near the window is significantly correlated with satisfaction towards work output in a day ($r=0.20^*$), natural light ($r=0.21^*$), provision of curtains ($r=0.19^*$) and the other factors were found to be non- significant. The work output as agreed by higher percentage of respondents is affected by illumination, workstation, ventilation and provision of coolers.

REFERENCES

- Barnaby JF 1980. Lighting for productivity gain. *Energy and Buildings*, 10(2): 20-28.
- Bommel WT, Beld J, Ooyen MH 2002. *Industrial Lighting and Productivity*. Netherland: Philips Lighting International Publishers.
- Engdatil E 1998. Great importance to the indoor quality that the ventilation systems. *Buildings and Environment*, 33(4): 197-200.
- Jorn Toftum 2002. Human response to combined indoor environment exposures. *Energy and Buildings*, 34(6): 601-606.