

Effect of Perceived Work Environment on Employees' Job Behaviour and Organizational Effectiveness

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The study examined the effect of two constituents of work environment (i.e. physical and psychosocial) on employees' job satisfaction and performance, and organizational effectiveness in a sample of 360 technical supervisors and operating core personnel. The analyses revealed that participants who perceived their work environment as to be adequate and favourable scored comparatively higher on the measures of job satisfaction, performance, and perceived organizational effectiveness. The two constituents of work environment were also found causing significant variance in employees' job behaviour and their perception of organizational effectiveness. Regression analyses revealed that among the various components of work environment, working condition, welfare provisions, interpersonal relations, and trust and support predominantly contribute to employees' job behaviour and organizational effectiveness. The results also specified that psycho-social environment in work-place exert more impact on employees' job behaviour and organizational effectiveness than the physical environment does.

Keywords: Work Environment, Organizational Effectiveness, Job Behaviour

The effect of organizational structure and its environment on the behaviour of its members has been an important issue of discussion and analysis since long back. In industrial context, the problem of increasing production and making the work environment more pleasant have been approached through the introduction of durable changes in working environment. The environment in work organizations comprises several components of two major categories, namely, physical and psycho-social. During early days of development of industrial psychology only physical environment in work place was given importance and was considered as a predominant determinant of employees' productivity. Numerous earlier studies examined the effect of illumination, temperature, noise, and atmospheric conditions on productivity of the workers (Bennett, Chitlangia, & Pangnekar, 1977;

Berrien, 1940; Ferree & Rand, 1940; Ford, 1929; Leithead & Lind, 1964; McCormic & Sanders, 1982; Moreland & Barnes, 1970; Morgan, 1916; Peterson & Gross, 1978; Sleight & Tiffin, 1948; Vickroy, Shaw, & Fisher, 1982). However, no consistent relationship could be noted between these components of physical work environment and performance. After Hawthorne studies industrial psychologists started shifting their attention to the study of social and psychological environment and its effects on employees' job behaviour. The recognition of the significant role of psycho-social environment led to the emergence of organizational psychology, and further the concept of 'quality of work life'. The importance of physical work environment has now been again realized. The modern organizations are making all possible efforts to make work environment more comfortable,

safe and healthy, which resulted in emergence of a new branch of industrial/organizational psychology, namely 'occupational health psychology'. It is psychological method of looking holistically at the work environment and the health of the workers. Occupational health psychology looks at the health of the workers as well as the health of organization in a synergistic relationship, and tries to understand the dynamic interaction between the two.

Numerous studies have been done to examine the effect of physical work environment and organizational climate on workers' job satisfaction, performance, and health. The earlier studies in this regard examined the effect of objective magnitudes of illumination, noise, temperature and atmospheric conditions on workers' productivity (Barnaby, 1980; Fine & Kabrick, 1978; Finkleman & Glass, 1970; Leithead & Lind, 1964; McCormic & Sanders, 1982). Scott, Jusanne and Steven (2000) reported that working conditions associates with employees' job involvement and job satisfaction. Strong, Jeannerert, Blackley and McPhail (1999) in a study observed that social, organizational and physical context serve as the impetus for tasks and activities, and considerably influence workers' performance and work output. Researches on quality of work life have also established the importance of safe and healthy working conditions in determining employees' job behaviour (Ahmad & Mehta, 1999; Patnayak, 1997).

The influence of organizational climate, which is mostly composed of several organizational, social and psychological factors, has been extensively examined in past two decades. In a number of studies employees' motivation, job satisfaction, job involvement, job performance, and health have been found to be markedly influenced by psycho-social environment of work organization (Anantharaman & Subha, 1980; Benjamin, 1975; Dugdill, 2000; Jean &

Randall, 1975; Lenuart, 1978; Mehta, 1977; Mishra, 1986; Muchinsky, 1977; Schneider & Syder, 1975; Tetric & Larocoo, 1987; Tumuly, Jernigan & Kohut, 1994).

Most of the above mentioned studies examined the molecular effect of different components of two constituents of work environment on employees' job behaviour. But, in fact, the various components of work environment influence workers' job behaviour as a whole made out of dynamic interactions among them. Taking this fact into consideration, the present study aimed at examining independent as well as interactional effect of perceived physical and psycho-social work environment on job satisfaction, job performance, and perceived organizational effectiveness in a sample of industrial personnel.

Method

Participants:

The sample for the present study comprised 360 technical supervisors and operating core personnel randomly selected from 4 industrial organizations. The participants, all males, were in the age range of 28 to 50 years, having work experience from 8 to 24 years.

Measures:

Physico-Legal Work Environment Questionnaire (Mohapatra & Srivastava, 2003) was administered to assess the extent of perceived adequacy and favourability of the various components of physical work environment. The questionnaire consisting of 27 items, to be rated on 5-point scale, includes the items relating to working conditions, safety and security, legally prescribed provisions of employees' welfare, external atmospheric condition and employees' awareness about these prescribed provisions. Validity of the tool was established by computing correlation between the score on this questionnaire and on the measures of job involvement ($r=.221$,

N=350) and job satisfaction ($r=.272$, N=350). Retest reliability of the tool was found to be 0.91 (N=88). High score on the measure indicates the adequacy of the work environment.

Motivational Aspect of Organization (Climate) (Pareek, 1975) was employed to assess the extent of motivational orientation in various dimensions of psycho-social climate of the organizations. The five dimensions taken up for the present investigation were orientation of the organization, interpersonal relationships, modes of managing conflicts, reward system and trust and support. The items in the questionnaire were to be rated on 4-point scale to indicate the extent of adequacy and congeniality of the psycho-social climate in the organization.

Validity of measure was established by running factor analysis. Test-retest reliability of the tool have been psychometrically established, and has been widely used by the researchers in the area of organizational behaviour and management.

Performance Appraisal Scale (Srivastava, 1997) The measure consists of 20 items to be rated on 5-point scale by the subject himself about the extent of objective and psychological characteristics of efficient performance of their own. The validity of the scale was established by examining its correlation with the measures of job involvement ($r=0.78$), job satisfaction ($r=0.602$), and organizational effectiveness ($r = 0.43$).

Job Attitude Scale (Srivastava, 1997). The scale comprising 15 items, to be rated by the respondent on 4-points, assess the extent of employees' positive attitudes and liking for various aspects of their job, such as job activities, working conditions, interpersonal relations, job security, compensation system, etc. Homogeneity index of the items ranged from .38 to .58. the

score on the scale significantly correlated with job performance ($r=.201$, N=300) and occupational stress ($r = -.42$, N=300). Split-Half of the scale was found to be .72.

Organizational Effectiveness Scale (Srivastava & Banerjee, 1997). A short version of the scale of the original scale was employed. The 11 items, to be rated by the respondent on 5-point scale, assess the efficacy and effectiveness of the organization. Homogeneity index of the items ranged from 0.4 to 0.67. Retest reliability of the test was found to be 0.95.

Results

The obtained data were analyzed in terms of t-ratio, F-ratio (ANOVA), and F-ratio (Step-Wise Multiple Regression) in order to examine the effect of perceived work-environment on employees' job satisfaction and performance, and organizational effectiveness. The obtained results are recorded in the following tables (1 to 5).

The results (Table 1) showing the comparisons of high and low scorers on the measures of perceived work environment (physico-legal, psycho-social) with regard to their job behaviour make it apparent that the participants who reported to perceive their physical and psycho-social work environment as more (Mdn+) adequate, favourable, healthy, and congenial scored markedly higher on the measures of job satisfaction and job performance in comparison to those who rated the two dimensions of their work environment as to be less adequate and favourable. The results also indicate that the employees who scored higher (positive) on the measure of two dimensions of work environment, scored higher also on the measure of organizational effectiveness in comparison to those who scored lower (negative) on the measures of work environment.

Table 1. Comparison of Job Satisfaction, Job Performance and Perceived Organizational Effectiveness of High and Low Raters of Work Environment

Work Environment	Job Satisfaction		Job Performance		Orgl. Effectiveness	
	Mean	t	Mean	t	Mean	t
Physico-Legal						
Work-Environment High ⁺	43.87	3.29**	57.48	2.79**	44.56	2.00*
(n=174)	(σ=5.45)		(σ=7.67)		(σ=5.32)	
Low ⁻	41.92		55.45		43.32	
(n=186)	(σ=6.43)		(σ=8.16)		(σ=6.56)	
Psycho-Social						
Work- Environment High ⁺	43.54	3.70**	57.24	3.31**	47.55	10.59**
(n=182)	(σ=5.51)		(σ=7.99)		(σ=4.66)	
Low ⁻	41.24		54.46		41.09	
(n=178)	(σ=6.25)		(σ=7.90)		(σ=6.62)	

*Adequate/Favourable (Mdn+); ⁻Inadequate/unfavourable (Mdn-)

**p < 0.01, *p < 0.05

Table 2. Results of 2´2 ANOVA in Job Satisfaction, Job Performance and Perceived Organizational Effectiveness Caused from Physical and Psycho-Social Work Environment

Work-Environment	Job Satisfaction		Job Performance	Org. Effectiveness
	df	F	F	F
Physico-Legal	1	1.54*	3.68**	2.91**
Psycho-Social	1	2.28**	3.08**	7.62**
Physical ´ Psycho-Social	357	1.58*	2.27**	3.27**
Error		25.004	30.525	12.949

**p < 0.01, *p < 0.05

In order to further confirm the effect of perceived work environment on employees' job behaviour and organizational effectiveness analysis of variance was done. The obtained results are depicted in Table2.

The analyses revealed that the extent of perceived adequacy and congeniality of physical and psycho-social work environment independently and as well as in interaction with each other caused significant variance in the levels of job satisfaction and job performance of the participants of the study. The results also indicate that physical and psycho-social constituents of work

environment independently as well as jointly caused noticeable variance in participants' perception of organizational effectiveness. The results further confirm the significant effect of perceived work environment on employees' job behaviour and appraisal of organizational effectiveness.

Finally, to analyze the independent and combined contributions of various components of the two major constituents of work environment to employees' job satisfaction, job performance and organizational effectiveness multiple regression analyses was run (Table 3 to 5).

Table 3. Regression of Job Satisfaction onto Physical and Psycho-Social Work Environment

Predictors	R	R ²	R ² (Step-wise)	F
Physico-Legal Environment				
Working Conditions	.187	.035	.035	3.28**
Welfare Provisions	.241	.058	.023	2.74**
Psycho-Social Environment				
Interpersonal Relations	.158	.025	.025	3.03**
Reward System	.206	.042	.017	2.55**
Trust & Support	.245	.060	.018	2.57**

**p < 0.01

Regression of job satisfaction (criterion) onto physical and psycho-social work environment (predictors) revealed that among the components of physico-legal environment taken into consideration herein 'working conditions' and 'welfare provisions' significantly predicted the employees' job satisfaction level. Rest of the components of physico-legal work environment, such as safety and security, employees' awareness, and external atmospheric conditions, were

found to be ineffective in predicting participants' job satisfaction to a noticeably extent. While 'interpersonal relations', 'reward system' and 'trust and support' components of psycho-social work environment were found significantly predicting (2.5%, 1.7%, and 1.8%, respectively) employees' job satisfaction. The results also specify that working conditions and interpersonal relations at work were dominant predictors of employees' job satisfaction.

Table 4. Regression of Job Performance onto Physical and Psycho-Social Work Environment

Predictors	R	R ²	R ² (Step-wise)	F
Physico-Legal Environment				
Welfare Provisions	.149	.022	.022	2.85**
Psycho-Social Environment				
Trust & Support	.120	.015	.015	2.31**
Interpersonal Relations	.192	.037	.022	3.33**
Specified Orientation	.234	.055	.018	2.04**

**p < 0.01

The results presented in Table 4 indicate that only one component of physical environment, i.e. welfare provisions, significantly predicted (2.2%) participants' job performance. On the other hand, trust and support, interpersonal relationships, specified orientation of the organization representing psycho-social climate of work-place were found to markedly contribute (1.5%, 2.2%, and 1.8% respectively) to participants' job performance. The results also enable us to

conclude that psycho-social environment predicts employees' performance relatively larger than the physical work environment does.

The analysis of prediction of organizational effectiveness by two dimensions of work environment revealed that work environment largely determines organizational effectiveness. The results of the multiple regression analysis are presented in Table 5.

Table 5. Regression of Perceived Organizational Effectiveness onto Physical and Psycho-Social Work Environment

Predictors	R	R ²	R ² (Step-wise)	F
Physico-Legal Environment				
Working Condit.	.167	.028	.028	3.23**
Welfare Provisions	.268	.072	.043	4.07**
Safety	.288	.083	.011	2.10*
Psycho-Social Environment				
Specified Orientation	.467	.218	.218	10.04**
Trust & Support	.500	.250	.032	3.86**
Reward System	.542	.293	.043	4.62**
Interpersonal Relations	.551	.303	.010	2.25**

**p < 0.01, * p < 0.05

The obtained results make it apparent that 'welfare-provisions', 'working conditions', and 'safety' in physical work environment significantly predicted (4.3%, 2.8%, and 1.1%, respectively) employees' perception of organizational effectiveness. The three components altogether contributed 8.30% to perceived organizational effectiveness. On the other hand, the four components of psycho-social environment of work place, namely, 'specified orientation', 'reward system', 'trust and support', and 'interpersonal relations' significantly predicted (21.8%, 4.3%, 3.2%, and 1.0%, respectively) organizational effectiveness as perceived by the participants. These dimensions of work environment altogether were found predicting 30.30% of the perceived organizational effectiveness. The results also made it apparent that psycho-social environment has been more effective in predicting organizational effectiveness in comparison to physical environment at work.

Discussion

The results of the study enable us to conclude that physico-legal as well as psycho-social environment of work organizations extend significant effect on job satisfaction and job performance of its members and also on effectiveness of the organization perceived by the employees. The results also specified that among other components of two constituents

of work environment, working conditions, welfare provisions, interpersonal relations, and trust and support prevailing in the work organizations play dominant role in determining the level of employees' job satisfaction and performance, and the extent of organizational effectiveness. The results also specify that psycho-social environment, in comparison to physical environment of workplace, exert greater impact on employees' job behaviour and organizational effectiveness.

The results of study demonstrated that perceived adequacy or inadequacy of work environment, both physical and psycho-social, extends noticeable effect on employees' job satisfaction and performance, and perception of effectiveness of an organization. The effect of work environment on job satisfaction may be attributed to the employees' job attitudes formed out of cognitive appraisal of various components of work environment. Job satisfaction is considered as the feeling resulted from employees' positive attitude towards various components or factors of job life. The employees who perceive and feel the work environment as to be adequate, safe and congenial, develop positive attitude towards various job components, which ultimately results in higher job satisfaction and job involvement among these employees. Some earlier studies also reported positive

relationship between adequate and comfortable work environment and job satisfaction, though the relationship between the two has not been extensively investigated. Most of the studies examined the effect of inadequate environment on job performance. However, certain correlates of job satisfaction, such as job involvement, job performance, absenteeism and turnover have been found to be affected by physical work environment. In "two-factor" theory of job satisfaction propounded by Herzberg and his colleagues (1959), working condition was identified as 'hygiene' factor, which leads to job dissatisfaction only, if it is inadequate. But adequate and comfortable working condition does not significantly enhance employees' job satisfaction. The findings of the present study disaccord the Herzberg's theory of job satisfaction. In the present study the effect of physical work environment was found to be bi-directional in its effect on employees' job satisfaction and performance. The study concluded that adequate work environment (physical) enhances employees' job satisfaction, while perceived inadequacy in work environment adversely affect job satisfaction of the employees. Significant difference was noted in job satisfaction level of the two groups of participants perceiving work environment differently (as to be adequate and inadequate). A recent HRD-concept, "Quality of Work Life", also emphasizes the role of physical and psycho-social environment of workplace in determining employees' job satisfaction morale, job performance and organizational commitment. Sayeed and Mehta (1981) reported positive correlation between Q.W.L. and employees' job satisfaction. Improvement in Q.W.L. has been found resulting in increased production. In his two studies De (1984a, 1984b) noted that high Q.W.L. improves productivity and affective state of the employees.

The positive relationship between adequate and favorable work environment and performance noted in the present study may be attributed to the physical convenience, facilities and comfort, feeling of safety and security, and congenial and motivating climate prevailing in the work environment. The employees' job satisfaction which is generated from these desirable features of work environment also might have resulted in improvement in job performance of the participants. Moreover, in inadequate and unsafe work environment the employees spend considerable amount of their time and energy in adapting to or coping with the stress caused from inadequate and unfavourable factors in work environment. This job stress adversely affects employees' performance. After pioneer formulations of Frederik Taylor in second decade of twentieth century numerous empirical investigations revealed that adequacy or appropriateness of various features of physical condition at work, such as, illumination, temperature, noise and atmospheric conditions help in enhancing industrial productivity. Fine and Kobrik (1978) noted negative effect of high temperature on performance of mental as well as physical task. Increasing illumination level has also been found to result in some improvement in performance (Barnaby, 1980; McCormic & Sanders, 1982). The findings of the present study are also in conformity with the observations of earlier studies on the relationship between psycho-social environment (organizational climate) and employees' job satisfaction (Pratap & Srivastava, 1983; Padaki, 1983a). The study has also demonstrated positive relationship between perceived work environment and organizational effectiveness. The observation may be attributed to the fact that adequate and favourable features of physical and social environment of the organization are major constituents and as well as determinants of overall effectiveness of the organization.

Conclusion

In contrast to earlier findings of inconsistent relationship between physical features of work environment and performance, the present study, wherein work environment was taken as a whole, revealed clear-cut and significant relationship between two sets of variables. On the other hand, the molecular contribution of the components of work environment to employees' job behaviour was found to be statistically significant but not markedly large. In fact, the work environment affects employees' job attitudes and job behaviour as an integrated whole, not through its different components independently. The evaluation of the extent of adequacy and favourability of a component of work environment and its effect on employees' job behaviour is determined by the state of other components and their interaction with each other and other personal and contextual factors. The present study, instead of analyzing molecular, examined the molar effect of work environment on employees' job behaviour and organizational effectiveness, which may be considered as a distinct feature of the study.

References

- Ahmad, S., & Mehta, P. (1997). Role stress, quality of work life and alienation. In : D.M. Pestonjee and U. Pareek (Eds.) *Organizational role stress and coping*. New Delhi : Rawat Publications.
- Anantharaman, R. N., & Subha, V. (1980). Job involvement, need satisfaction and organizational climate. *Indian Journal of Applied Psychology*, 17, 56-59.
- Barnaby, J. F. (1980). Lighting for productivity gains. *Lighting Design and Application*, Feb. 20-28.
- Benjamin, S. (1975). Organizational climate. An essay. *Personnel Psychology*, 28, 447-479.
- Bennett, C., Chitlangia, A., & Pangnekar (1977). Illumination level and performance of practical visual tasks. Proceeding of the Human Factors Society. Annual Meeting, Santa Monica, Calif. *Human Factor Society*.
- Berrien, F. K. (1940). The effect of noise. *Psychological Bulletin*, 43, 141-161.
- De, N. R. (1984a). Toward an appreciation of the quality of life and quality of work life. *Economic and Political Weekly*, 19, 46-52.
- De, N. R. (1984b). *Alternative designs of human organizations*. New Delhi: Sage Publications.
- Dugdill, L. (2000). Developing a holistic understanding of work place. *Health and Ergonomics* (England), 43, 1738-1749.
- Ferree, C. E., & Rand, G. (1940). Work and its illumination. *Personnel Journal*, 19, 55-64.
- Fine, B. J., & Kobrick, J. L. (1978). Effects of attitude and heat on complex cognitive tasks. *Human Factors*, 20, 115-122.
- Finkleman, J. M., & Glass, D. C. (1970). Reappraisal of the relationship between noise and human performance by means of a subsidiary task measure. *Journal of Applied Psychology*, 54, 211-213.
- Ford, A. (1929). Attention-automatization, an investigation of the transitional nature of mind. *American Journal of Psychology*, 41, 1-32.
- Herzberg, F., Mausner, B., & Snyderman, B. (1959). *The motivation to work*. N.Y. : John Wiley.
- Jean, H., & Randall, B. O. (1975). Organizational structure, demographic characteristics and employees response. *Organizational Behaviour and Human Performance*, 13, 206-232.
- Leithead, C. S., & Lind, A. R. (1964). *Heat stress and heat disorders*. London : Cassell and Co.
- Lenuart, L.(1978). Quality of work environment protection and promotion of occupational mental health. *Report from the Laboratory for Clinical Stress Research*, 88, 25.
- McCormick, E. J., & Sanders, M. S. (1982). *Human factors in engineering and design*. New York : McGraw-Hill.
- Mehta, P. (1977a). Employee motivation and work satisfaction in a public enterprise. *Vikalpa*, 2, 223-236.
- Mishra, P. C. (1986). Strenuous working conditions as a moderator variable of the job satisfaction

- job involvement relationship. *Indian Psychological Review*, 3, 4-9.
- Mohapatra, B. K. , & Srivastava, A. K. (2003). A study of the relationship of perceived work environment with job attitude, performance and health. Unpublished PhD. Dissertation, Department of Psychology, Banaras Hindu University.
- Morgan, J. J. B. (1916). The overcoming of distraction and other resistances. *Archives of Psychology*, 35.
- Mroeland, S., & Barnes, J. A. (1970). Exploratory study of pilot performance during high ambient temperature humidity. USA HEL Technical Memorandum No.. 6-70. Aberdem Proving Ground.
- Muchinsky, P. M. (1977). Organizational communication: Relationship to organizational climate and job satisfaction. *Academy of Management*, 20.
- Padaki, R. (1983a). Organizational climate in nationalized textile mills. *Management Digest*, 1, 11-16.
- Pareek, U. (1975). Motivational Climate Questionnaire, Monographed Report Indian Institute of Management, Ahmedabad.
- Patnayak, B. (1997). Stress and quality of work life. In :D. M. Pestonjee and U. Pareek (Eds.). *Organizational role stress and coping*. New Delhi, Rawat Publications.
- Peterson, A. P., & Gross, F. E. (1978). *Handbook of noise measurement*. New Concord, Mass: Genrad.
- Pratap, S., & Srivastava, S. K. (1983). Relationship between the organizational climate and job satisfaction – A study of sugar industries. *Indian Journal of Labour Economics*, 25, 73-77.
- Sayeed, O. B., & Mehta, P. (1981). Managerial values orientation, leadership style and organizational health: A work group analysis. *Indian Journal of Industrial Relations*, 16, 531-544.
- Schneider, B., & Syder, R. (1975). Some relationship between job satisfaction and organizational climate. *Journal of Applied Psychology*, 60.
- Scott, K. D., Jusanne, M., & Steven, M. E. (2000). Factors influencing employee benefits beliefs that, pay is tied to performance. *Journal of Business and Psychology*, 14, 553-562.
- Sleight, R. B., & Tiffin, J. (1948). Industrial noise and hearing. *Journal of Applied Psychology*, 32, 476-489.
- Srivastava, A. K. (1997a). *Job Attitude Scale* (unpublished), Department of Psychology, Banaras Hindu University.
- Srivastava, A. K. (1997b). *Performance Appraisal Scale* (unpublished), Department of Psychology, Banaras Hindu University.
- Srivastava, A. K., & Banerjee, R. (1997). *Organizational Effectiveness Scale*. In D. M. Pestonjee (Ed.) *Third handbook of psychological and social instruments*. New Delhi: Concept Publishing House..
- Strong, M. H., Jeanneret, P. R., McPhail, S. M., & Blackley, B. R. (1999). Work context, taxonomy and measurement of the work environment. *American Psychological Association* (Houston TX), 86 : 12767.
- Tetrick, L., & Larocco, J. M. (1987). Understanding prediction and control as moderators of the relationship between perceived stress, satisfaction and psychological well-being. *Journal of Applied Psychology*, 72, 538-543.
- Tumulty, G., Jernigan, I. E., & Kohut, G. F. (1994). The impact of perceived work environment on job satisfaction of hospital staff nurses, College of Nursing, University of North Carolina, *Medline*, 7, 84-90.
- Vickroy, S. C., Shaw, J. B., & Fisher, C. D. (1982). Effects of temperature, clothing and task complexity on task performance and satisfaction. *Journal of Applied Psychology*, Feb. 97-102.

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