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Management

ORGANIZATIONAL ERGONOMICS A TOOL KIT FOR EVALUATION OF EMPLOYEES OF SOFTWARE INDUSTRIES IN PUDUCHERRY REGION.

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ABSTRACT As rightly quoted by Steve Jobs "Ergonomics is not just what it looks like ergonomics is how it works". In the present scenario ergonomics is no longer a buzz work and it now becomes necessity to connect a fit with the legitimate concern of the work with the human. Hence the researcher captioned the article on the title organizational ergonomics which mean a physical fit of the human at work place. The study capsules the article on analyzing the present working conditions the causes of ergonomics in the work place. The outcome of the study found that employees feel comfort with workplace layout, job responsibilities & empowerment. The organization needs to improve on creating awareness on the principle of ergonomics which in turn will make the employee to lead a healthier and happy life and this serve as an optimal tool for maximizing the productivity. Thus the research concludes that applying ergonomics in the workplace motivates to reach the optimal level but not overwhelm us".

KEYWORDS : Ergonomics, working conditions, culture, empowerment

INTRODUCTION

As Human assets are the back bone of the company it is getting more priority among the organization to create a positive attitude in the minds of the employees. Ergonomics is not just what it looks like ergonomics is how it works-The goal of ergonomics is to fit the task to the individual, not the individual to the task. Practicing good ergonomics achieves increased productivity, improved health and safety of workers, higher job satisfaction and better compliance with government regulations

MEANING

Ergonomics is the study of designing equipment and devices that fit the human body, its movements, and its cognitive abilities.

DEFINITION

ERGONOMICS

The International Ergonomics Association has adopted this technical definition: ergonomics (or human factors) is the scientific discipline concerned with the understanding of interactions among humans and other elements of a system, and the profession that applies theory, principles, data and methods to design in order to optimize human well-being and overall system performance.

REVIEW OF LITERATURE

Jeffrey E. Fernandez (1994) discussed several important components of ergonomics including anthropometry, seat design, manual materials handling, and focuses on most common musculoskeletal disorders (MSDs) such as cumulative trauma disorders and lower back injuries.

Hal W. Hendrick (2010) conducted the research on historical development of ergonomics in organizational design and management is reviewed. Basic concepts of organizational design and of sociotechnical systems are discussed. The emergence of an organizational-machine interface technology and related concepts of macro ergonomics are presented, including sociotechnical system considerations in organizational and work systems design.

DE Treaster & D Burr (2011) studied the Gender differences in prevalence of upper extremity musculoskeletal disorders. Two factors such as age and physical work factors were undertaken. The purpose of this study was to examine the type of gender that faces the higher amount of UEMDs. It was found that women do have higher prevalence than men for many types of UEMDs even after controlling age and work factors.

Helena Jahncke (2017) The article describe the occurrence and desired number of alternations between mental and physical tasks in industrial and non-industrial blue-collar work, and determine to which extent selected personal and occupational factors influence these conditions. The author addressed attitudes among blue-collar workers to alternations between physically and mentally demanding tasks. Alternating physical and mental tasks could, thus, be a viable option in job rotation. The results of the present study indicated that alternations between productive physical and mental tasks could be a viable option in future job rotation. The researcher concludes that understanding the effects of different task alternation schemes on individual preferences, well-being and health, as well as research devoted to individual and work-related factors that may predict these effects.

Problems in Organisational Ergonomics

- Employee's perception at all times is not same.
- People find difficult to prioritizing and follow.
- People may not have proper knowledge towards ergonomics principles.

Objectives of the Study

- To elicit the prevailing culture of the organization
- To ascertain the causes of ergonomics and the impact of it in work environment.
- To assess the factors favoring employee's involvement towards the team.

Scope of the Study

- It showcases the potential contribution of employees towards the work and it helps the management to upgrade their ergonomics techniques in future time period.
- It serves as a tool to bring out the optimal solutions for the peaceful working of the organization.

Research methodology

The present study is the outcome of primary data collected from employees working in software industries in Pondicherry region. The secondary data was collected with the help books, magazines, and websites of company records.

Data Analysis and Interpretations

FACTOR ANALYSIS

Application of factor analysis

S.No	FACTORS	Initial	Extraction
1.	Work place layout	1.000	.957
2.	Furniture	1.000	.870
3.	location of the equipment	1.000	.911
4.	Room Lighting	1.000	.935
5.	working posture	1.000	.482
6.	Repetitive Work	1.000	.954
7.	Nature of job	1.000	.222
8.	job responsibilities	1.000	.936
9.	work allocation	1.000	.870
10.	supervision	1.000	.953

11.	**Empowerment**	1.000	.926
12	**Employees Participation**	1.000	.875
13	**welfare related measures**	1.000	.821

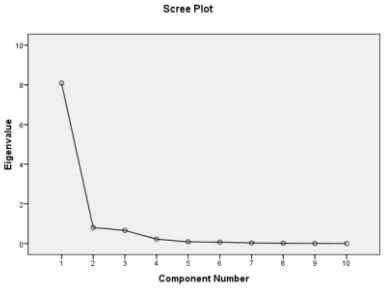
The communalities in this table are all high. This indicates that the extracted component represents the variables well.

The variance explained by the initial solution, extracted components and rotated components is displayed. The first section of the table shows the initial Eigen values. The total column gives the Eigen value or amount of variance in the original variable accounted for by each component.

Table 2

Extraction sums of squared loadings		
Total	% of variance	% of cumulative
8.090	80.896	80.896

This table indicates the extracted components. It explain nearly 81%of the variablity in the original variables,so the complexity of the data set can be consideerably reduced by using this component with 20% loss of information.



The screen plot enables to determine the optimal number of components. The components on the shallow slope contribute little to the solution. The last big drop indicates the gap between the second and eight components.

ROTATATED COMPONENT MATRIX

Work place layout	1.000	.957
Furniture	1.000	.870
location of the equipment	1.000	.911
Room Lighting	1.000	.935
working posture	1.000	.482
Repetitive Work	1.000	.356
Nature of job	1.000	.222
job responsibilities	1.000	.936
work allocation	1.000	.870
supervision	1.000	.953
Empowerment	1.000	.926

INFERENCE:
The fifth and seventh factors are most highly correlated and it needs more improvement and rest of the factors seems to be excellent in the organization.

2 Weighted Average Method: The weighted average method can be calculated by the following formula. This tool is used to find the ranks given by the respondents about the various types of postures in which they perform their job.

Factors	**Weight (W)**	**Not at all**	**Rarely**	**Sometimes**	**Often**	**Very Often**	**Total**	**Rank**
		1	2	3	4	5		
Awkward posture	X1	1	9	74	16	25		
	X1W	1	18	222	64	125	430	III
Repetitive motion task	X2	4	7	63	25	26		
	X2W	4	14	189	100	130	437	I1
Stress at work place	X3	1	2	32	29	61		
	X3W	1	4	96	116	305	522	I
Forceful movement	X4	36	52	24	4	9		
	X4W	36	104	72	16	45	273	V
Sitting in the same posture	X5	2	3	72	19	29	345	VI
	X5W	2	6	216	76	145		

Source: Primary Data

Inference :
From the Table No.1, it is clear that the respondents normally work in all the above mentioned postures. Among them, majority of jobs are stress and follows repetitive motion tasks, many respondents work in an awkward postures and perform jobs with forceful movements and few perform by sitting in same and static postures for a long duration.

Suggestions and Recommendations
- It is noted that interpersonal skills among the employees are moderate. Hence it is suggested to the organization to take necessary steps to inbuilt team related activities among the employees which in turn improve the smooth relationship with coworkers and make employees to work with unity to achieve the targets.
- From the Research, it is lighted that the organization stands a step behind in the aspect of working posture for achieving their goals due to some ergonomics problems. Therefore, it is suggested to the management to create awareness on the basic principles of ergonomics which in turn will make the employee to lead a healthier and happy life and this serve as an optimal tool for maximizing the productivity.
- From this study, the researcher pore-over that the employees are carrying out the repetitive motion task which makes the employees to feel fatigue. Hence, it is suggested to the organization to allot different department works to enhance their skills and knowledge of employees.

Conclusion
In the present scenario ergonomics is no longer a buzz work and it now becomes necessity to connect a fit with the legitimate concern of the work with the human. Hence the researcher captioned the article on the title organizational ergonomics which mean a physical fit of the human at work place. The study capsules the article on analyzing the present working conditions the causes of ergonomics in the work place. The outcome of the study found that employees feel comfort with workplace layout, job responsibilities & empowerment. The organization needs to improve on creating awareness on the principle of ergonomics which in turn will make the employee to lead a healthier and happy life and this serve as an optimal tool for maximizing the productivity. Thus the research concludes that applying ergonomics in the workplace motivates to reach the optimal level but not overwhelm us".

References
1) Chaffm, D.B. and Anderson, G.B.1., Occupational Biomechanics (2nd ed.), Wiley-Interscience, New York, NY, 1991. Curwin, S. and Stanish, W.D., Tendinitis: Its Etiology and Treatment, Collamore Press, Lexington, MA, 1984.
2) Fernandez, lE. and Marley, R.1., "Monitoring and screening tests for carpal tunnel syndrome", in Lovesey, E.1. (Ed.), Contemporary Ergonomics 1990, Taylor and Francis, London, 1990
3) Hiltz, R., "Fighting work-related injuries", National Underwriter. Vol. 89 No. 13, 1985, p. 15.
4) Jurgens, H.W., Aune, LA. and Pieper, U., International Data on Anthropometry, Occupational Safety and Health Studies, International Labour Office, Geneva, 1990.
5) Kroemer, K.H.E., "Cumulative trauma disorders: their recognition and ergonomic measures to avoid them", Applied Ergonomics. Vol. 20 No. 4, 1989.