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Evaluation of ergonomic risk factors in human resources

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Article Information

Abstract

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Keywords ergonomic, risk factors, human resources, workplace. Introduction: Ergonomics as an efficient approach helps people to ensure the health of the workforce. Investigates the relationship between ergonomics and human resource management The research design in this research is descriptive-correlation.

Methods: The research design in this research is descriptive-correlation. In terms of research purpose, it is divided into applied, fundamental and developmental types. Applied research is research that seeks to find solutions to the statistical community. Developmental research seeks to add researcher knowledge and fundamental research seeks to expand theories in a scientific discipline. Due to the infinity of the statistical population, sampling was not performed. The volume of statistical sample according to the contents and according to the opinions of the supervisor to achieve reliable results, 310 questionnaires were distributed and 220 questionnaires were completed and collected. Sampling method is also available as sampling. In this study, to examine the relationships between the components of the model, the correlation coefficient with respect to the normality and abnormality of the data has been used. The statistical assumption is addressed by SPSS 16.

Results: The average management commitment of ergonomic indicators of employee well-being is 29.93, employee participation is 32.04, occupational risk analysis is 35.90 and training is 32.53. According to the structural equations, the amount of path coefficient between management commitment and organizational performance, which is rejected at the significance level of 0.05 null hypothesis, and considering the positive value of path coefficient shows a positive effect.

1. Introduction

This study investigates the relationship between ergonomics and human resource management. Ergonomics as an efficient approach helps people to ensure the health of the workforce. Ergonomics measures human capabilities and then organizes devices, work, and the work environment accordingly. As Haslam describe: Ergonomics seeks to make work fit man, not man fit work(Haslam & Waterson, 2013).

Along with the importance of productivity, job satisfaction, health and safety in the workplace, interest and attention to ergonomics has grown. Many universities now offer courses in ergonomics with disciplines such as industrial engineering, psychology, management and design(Górska &



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Kossobudzka-Górska, 2018; Słowikowski, 1998). Also in the industrial sector, industrial health professionals should be aware of the principles and foundations of ergonomics and by applying them, reduce occupational injuries in the workplace and improve occupational safety and health.

Lin et al. (2016) conducted a study entitled "Cultural Human facors" (Lin, Chen, Hsiao, & Lin, 2016). The aim of this study is to combine cultural ergonomics and interactive design to explore the interaction between man and culture. The results show that cultural ergonomics is an approach that considers interaction and experience-based changes across cultures. Designers need to better understand the development of cultural ergonomics not only for participating in cultural contexts but also for the interactive development of user experiences. Cultural ergonomics expands our understanding of cultural meaning and our ability to use such understanding to design and evaluate everyday products (Lin et al., 2016).

de Macedo Guimarães LB, Anzanello MJ, Ribeiro JLD and Saurin TA conducted a study entitled "Participatory Ergonomics in industries" (de Macedo Guimarães, Anzanello, Ribeiro, & Saurin, 2015). This study shows that the principles of human resource management increase welfare and productivity in the organization.

Dobson conducted a study entitled "ergonomics in transport" (Dobson, 2015). This research draws on recruitment and employment studies from work experience in the United Kingdom, the United States, Canada, and Japan, and observations on the evolution of human and ergonomic factors in railways. Practical areas for the use of human agents at specific points in rail signaling and control systems have been described. How these factors affect conscious attention, human error, and workload is difficult to assess and predict(Dobson, 2015).

Therefore, the main question in this research is what is the relationship between ergonomics and human resource management.

Hypotheses:

H₁: Management commitment affects the performance of the organization ergonomically.

2. Methods

The research design in this research is descriptive-correlation. In terms of research purpose, it is divided into applied, fundamental and developmental types. Applied research is research that seeks to find solutions to the statistical community. Developmental research seeks to add researcher knowledge and fundamental research seeks to expand theories in a scientific discipline. According to the above, it can be said that this research is practical from the point of view of purpose.

Due to the infinity of the statistical population, sampling was not performed. The volume of statistical sample according to the contents and according to the opinions of the supervisor to achieve reliable results, 310 questionnaires were distributed and 220 questionnaires were completed and collected. Sampling method is also available as sampling.

The most important tool for collecting information in this research is a questionnaire. We analyze the questions: The questionnaire used consists of two main parts.

The first part deals with the general characteristics and characteristics of the respondent. This section identifies the demographic variables of the individual completing the questionnaire. The items mentioned in this section are responsive to the specifications.

The results of this part of the questionnaire determine the demographic characteristics of the respondents.

The second part of the questionnaire is designed to examine the research hypotheses and evaluates the hypotheses from the point of view of the respondents. In order to design the questionnaire, a standard questionnaire was used. The initial questionnaire was distributed among a limited number with the opinion of the supervisor and its reliability was obtained, and after presenting the opinions of the supervisor, vague questions were identified and corrected and then the final questionnaire was developed. Cronbach's alpha for each of the scales is above 0.80, which indicates a good reliability. It is necessary to explain that the organization performance questions are 41 questions that have been omitted due to the low reliability of some questions to increase the reliability value. The omitted questions include (40-39-35-31-27-24-23-22- 14-13-3). Cronbach's alpha indicates that the questions are relatively well correlated and it can be said that the questions all measure a variable (an attribute). Another concept of Cronbach's alpha refers to the fact that if we once again use this questionnaire and using the same respondents (generally under similar conditions) to measure the trait of the research, there is a significant difference in the answers provided. We will not see. The reported alpha value also confirms the existence of this condition for the questionnaire under review.

Data analysis is a process in which the data provided through the use of collection tools in the statistical sample are summarized, coded, categorized and finally processed to establish a variety of analysis and communication between data to Provide a test for the hypotheses.

In this process, the data are refined both conceptually and empirically, and various statistical techniques play an important role in inferences and generalizations.

In this study, to examine the relationships between the components of the model, the correlation coefficient with respect to the normality and abnormality of the data has been used. The statistical assumption is addressed by Spss software

3. Results

In this study, 76% of male respondents are 23% female. It is observed that 3% of the respondents have a diploma, 21% have a master's degree, 64% have a bachelor's degree, 11% have a master's degree or higher. Also 35% of respondents to the study sample are aged 27 to 31 years, 8% between 32 to 36 years, 24% between 37 to 41 years, 23% between 42 to 46 years and 7% over 47 years.

The average management commitment of ergonomic indicators of employee well-being is 29.93, employee participation is 32.04, occupational risk analysis is 35.90 and training is 32.53(table 1). The average of most factors is above the cut-off point, which indicates that ergonomic factors related to employee well-being are above average. Only the average management commitment factor is close to the cutting point, which indicates that the management commitment is performed at a moderate level in terms of ergonomic factors of employee welfare.

	Average	Standard deviation	minimum	maximum	Number of questions	Cutting point
Management commitment	29.93	6.18	18	41	10	30
Employee participation	32.04	6.99	15	44	10	30
Occupational risk analysis	35.9	6.19	2	46	11	33
Education	32.53	6.34	15	45	10	30

Table 1: Mean and standard deviation of ergonomic factors related to employee welfare



Figure 1: Estimated value of each of the path coefficients of the employee welfare model after correction

4. Conclusion

Over the years, the vital role of ergonomics in increasing productivity, reducing musculoskeletal injuries, improving the quality, safety and overall efficiency of organizations has become clearer. Ergonomists have improved human efficiency and systems by optimizing the fit between humans and other components of work systems. At present, attention to ergonomics in organizations has gone beyond a tool. The experiences of industrialized countries show that addressing ergonomics and its

implementation can help many aspects of organizational performance. Today, ergonomics is considered as one of the important features in strategy formulation and its implementation process in order to achieve organizational goals. From this perspective, ergonomics can be designed as knowledge to improve system efficiency, create a suitable work environment, prevent accidents and work-related diseases, and improve human efficiency and performance. The most important issue in the implementation of ergonomics, training and awareness of ergonomics and convincing senior managers and decision makers about the benefits of ergonomics and its role in improving the quality, efficiency and productivity of the system, reducing work-related diseases and maintaining health It's work. The experience of industrialized countries shows that if there is an opportunity to implement ergonomics, not only can it achieve ergonomic goals, but with its synergistic effects, it can go beyond ergonomic issues, ie national productivity and economic growth. acquired.

Hypothesis: Management commitment affects the performance of the organization ergonomically.

According to the structural equations, the amount of path coefficient between management commitment and organizational performance, which is rejected at the significance level of 0.05 null hypothesis, and considering the positive value of path coefficient shows a positive effect. That is, by increasing the commitment of management, the performance of the organization improves. As a result, the researcher's claim is confirmed with 95% confidence and management commitment has an effect on the organization's performance ergonomically.

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