

## A Study of The Influence of Physical Work Environments on Employee Performance

Roziana Shaari, Azlineer Sarip, Syalsa Ramadhinda

School of Human Resource Development and Psychology, Faculty of Social Sciences and Humanities, Universiti Teknologi Malaysia, 81310 UTM Johor Bahru, Johor, Malaysia

### Abstract

In order to remain competitive within a particular industry, companies need to pay more attention to the performance of their employees and provide them with an environment in which they can perform at their best. Having a workplace that is unsafe or unhealthy has a detrimental effect on performance at work. In this study, it is our major objective to examine whether there is a relationship between the physical work environment in Indonesian manufacturing companies and employee performance. The data for this study was collected through the use of a quantitative survey. There were 187 employees who participated in the study at a company operating in Batam, Indonesia. In order to analyze the data and determine the relationship between variables, a Pearson Correlation Analysis was used. The results of this research indicate that there is a significant relationship between the performance of employees and the physical environment in which they work. There is, however, a small correlation between these two variables. Employees can work comfortably in a work environment which is conducive to their ability to complete their tasks in order to do their jobs effectively. There are, however, other aspects that need to be taken into account, such as improving communication between colleagues, providing employees with a supervisor to assist them in completing their tasks, and taking time to consider employees' working hours, which may also play a significant role in improving employee performance.

**Keywords:** Physical Work Environments, Employee Performance

### Introduction

Organizations today face many challenges from globalization and recent changes, including establishing an environment that captures, nurtures and motivates their employees. In the past decades, the workplace environment has changed due to various factors including the social environment, technology, as well as the adaptability of handling work processes (Yohe & Tole, 2002; Griffin & Parker, 2007). Additionally, competition within the sector requires employees to work faster, smarter, and more innovatively. As economic conditions and competition become more stringent, organizations can no longer squander the value in their employees. In order to survive, a business needs to pay attention to the performance of its employees and create a work environment that allows them to utilize their best talents (Block, 2016).

Many organizations consider lifestyle, work-life balance, health and fitness when hiring prospective employees (Kim, 2014). As a result, the organization considers and relates it to

employee performance. Furthermore, the work environment can also influence the performance of employees (Davidescu et al., 2020; Ali et al., 2015). Chandrasekar (2001) asserts that the working environment greatly impacts employees' performance either negatively or positively. Physical work environment plays a decisive role in determining employees' performance as it affects their job satisfaction, according to (Tayfun & Oneren, 2021). As Rahmi et al (2018) reported in their previous study, physical working conditions have a significant effect on the employees' work performance, which affects employee productivity in Central Java and the Special Region of Yogyakarta, Indonesia. An effective and conducive work environment is necessary for employee performance to be at its best. Employees can then effectively perform their duties and tasks. In another study, Naharuddin and Sadegi (2013) investigated the factors affecting the performance of employees at Miyazu Malaysia and found that supervisors' support is not an important contributor to the employees' performance. Employee performance is strongly influenced by job aids and physical working environments. There is no doubt that the physical work environment greatly influences employee performance. As a result, it is vital to conduct research into physical work environments specifically in manufacturing companies that assist workers to perform better.

## **Literature Review**

### ***Employees Performance***

According to Borman (2004), performance is the most important dependent variable in industrial psychology. Employees' performance is a result of their ability, efforts, and ways of viewing tasks, according to (Diamantidis & Chatzoglou, 2018). As further explained by Al Mehrzi and Singh (2016), performance is defined as a person's success in achieving goals and standards of work in a certain period of time with mutual agreement. Performance is also defined as employees' effort in completing tasks set by the company or organization (Razak et al., 2018).

Koopman et al (2011) developed a heuristic conceptual framework for the individual's work performance, illustrated in figure 1. Work performance includes task performance, contextual performance, adaptive performance, and counterproductive work behavior (CWB). According to the first dimension, task performance refers to how quickly the main tasks are completed, which indicates whether employees are performing their job responsibilities, keeping their knowledge updated, and working accurately and neatly. Contextual performance, as the second dimension, refers to activities that may contribute to organizational success due to the social and psychological environment in which they operate. The third dimension is adaptive performance, which describes how an employee adapts to changes in work systems and regulations. Finally, CWB represents activities that are detrimental to the organization's success.

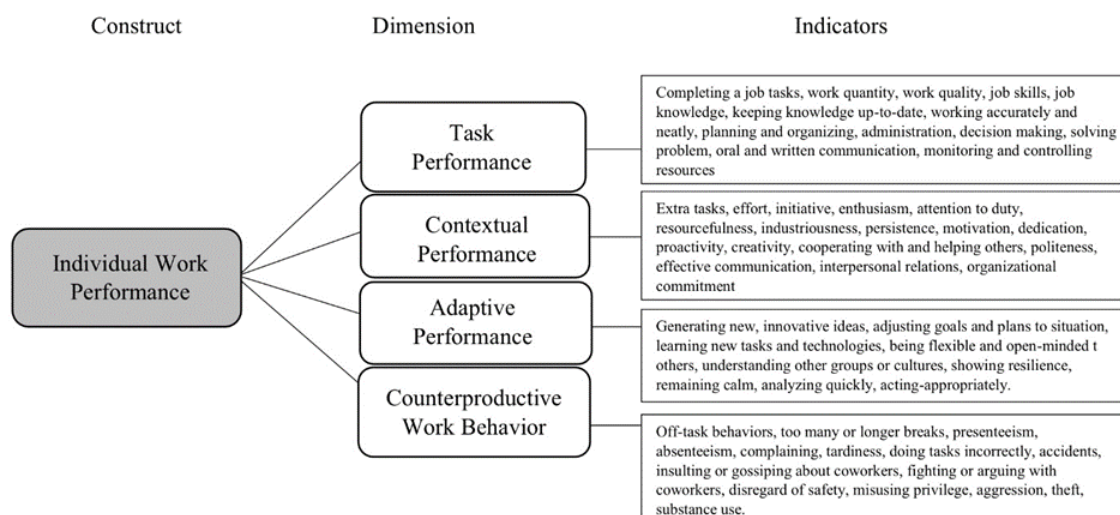


Figure 1: Heuristic Framework of Individual Work Performance (Koopman et al. (2011))

According to Widyastuti and Hidayat (2018), this dimension entails faultless behavior that might harm the organization, in contrast to the prior two dimensions, which comprise of behaviors that may influence a company to succeed. Koopmans et al (2011) further stated that indicators of this dimension include absenteeism, complaining, purposefully underperforming, or misusing authority.

**Physical Work Environment**

In a working environment, physical surroundings are an important factor. Rorong (2016) distinguishes two types of physical work environment i.e., internal and external office setting, temperature, workspace, and office arrangements. Physical work environments are also areas within the organization that are being laid out or organized, enabling the organization to reach its objectives. A person's physical work environment can also determine whether he or she is suited to the working environment (Pusparani et al., 2021). Joseph (2016) added that a physical work environment involves both the setup of the workplace environment and how it impacts employees. The employee may experience hazards, dangers, or risks such as hazardous substances, radiation, and noise in the workplace, and the shape and length of those effects.

The Two Factor Theory of Frederick Herzberg includes the working environment as one of the factors that can affect employees' performance (Dartey-Baah & Amoako, 2011). There are two factors that influence employee working behavior and performance in this theory. The intrinsic factor that may influence employee job satisfaction is motivation, whereas the extrinsic factor that might alleviate employees' dissatisfaction at their workplace is hygiene. Motivation factors such as achievement, recognition, responsibilities, the work or tasks, advancement, and personal development influence job satisfaction. A factor which can influence job dissatisfaction is hygiene, and one such factor is the work environment. These two factors may lead to four common situations according to this theory. Employees with high motivation and high hygiene of work environment will be at the ideal situation wherein employees will be satisfied with the surroundings and feel motivated. A second scenario could arise if employees are energetic and passionate about their work, but their workplace environment has many other aspects that have made them complain. It occurs when employees have high motivation but poor workplace hygiene. Having low motivation and an unhygienic work environment is another condition that might occur. As a result, employees

may be weary and unable to focus on their work. According to Herzberg's theory, dejected and unmotivated employees are likely to occur as a result of low motivation and poor hygiene. As a result, employees need a high level of hygiene at work (Atalic et al., 2016).

### **Relationship Between Physical Work Environment and Employees' Performance**

Dewe & Cooper (2007) argue that the physical working environment results from an individual's fit or misfit in their workplace. The physical working environment is also called an ergonomic work environment (Husin & Paino, 2012). Improved physical work environments will lead to improved employee safety and prevent nerve injuries. In addition, the aspects of a conducive and appropriate working environment are equally important so that employees' stress is reduced while performing their tasks and duties. Further, the physical work environment plays a significant role in helping employees to build relationships and networks in the workplace, which helps them to perform better (McCoy & Evans, 2005). Employee dedication and turnover rate in the organization are associated with the working environment. Providing employees with a sufficient, supportive, and suitable working environment will lead to high levels of employee satisfaction and thus increase their performance. Roelofsen (2002) also claims that focusing and improving the working environment enables employees to have fewer objections, criticism, and absenteeism rates, thereby increasing the level of employees' performance and productivity. Accordingly, it can be concluded that putting a greater emphasis on the physical working environment will increase employee motivation and productivity.

There have been several studies (Ali et al. 2015; Nzewi et al., 2018; Rorong, 2016) that have shown that employees do not perceive the level of light in the workplace to be unpleasant when compared to the office temperature, which implies that the office temperature is more important than the level of light. A low office temperature contributes to health-related issues such as fatigue and inability to concentrate.

H1: There is positive and significant relationship between physical work environment and employees' performance.

### **Methodology**

Data for this study were collected and analyzed using quantitative research methods through descriptive and correlational research designs. This study used a set of questionnaires to examine the independent and dependent variables. For this study, the questionnaire was adopted from Nanzushi (2015) with a total of 4 questions and Manu (2015) with a total of 8 questions for the physical work environments and Koopmans et al (2011) for the employees' performance. In this questionnaire, there are three dimensions: task performance, contextual performance, and counterproductive work behavior. The respondents were asked to answer each question using the Likert-Scale ranging from strongly disagree to strongly agree. The total population of this study was 422 employees, and the sample size was 201 on the basis of a random sampling method. A total of 187 questionnaires were returned from employees of the selected company in Batam, Indonesia. A descriptive statistic was used to report each variable's mean. In order to measure the relationship between two variables, Pearson's Correlation Analysis was used.

### **Result**

The majority of respondents were male workers between the ages of 21 and 25. In addition, most respondents have completed a bachelor's degree. The length of work

experience ranges between 1 and 3 years.

Table 1 shows the overall results of employee performance. Results show that employees' performance is rated as moderate by the mean score of (M = 3.56; SD = 0.369). According to the first dimension of employee performance, which is task performance, the overall mean of Task Performance is high (M=4.26, SD=0.450). Almost three-quarters (f=175, %=93.6) of the respondents agreed that they were able to complete their work on time if they could manage their plan. A high level of performance was also shown in the second dimension, Contextual Performance (M=4.06, SD=0.474). Nevertheless, some respondents (f=56, %=30) were unsure whether they would be able to handle challenging tasks when they had more free time. CWB, on the other hand, was low among respondents, which indicated that the company's goals and interests were being pursued. The results were consistent with other dimensions, as well - task and contextual performance were high. However, about half (94, 50%) of the respondents still complain about small issues at work and about a third (61, 33%) share negative aspects from their workplace with their colleagues.

Table 2 shows that there was a significant relationship between independent and dependent variables in this study based on the p-value for both variables which was less than 0.01. Furthermore, Pearson's correlation coefficient demonstrates a positive but weak relationship between physical work environment and employees' performance. A weak positive correlation indirectly implies that employees performing better at work may be influenced by the workplace's physical environment. The results of this study support the hypothesis that employees' performance is positively related to their physical work environment.

Table 1

*Level of Physical Work Environment and Employees' Performance*

Variables	Mean	Std. Deviation	Level
Physical Work Environment	3.62	0.384	Moderate
Task Performance	4.26	0.450	High
Contextual Performance	4.06	0.474	High
Counterproductive Work Behavior	2.07	0.756	Low
Total of Employees' performance	3.56	0.369	Moderate

Mean value (Low = 1.00 - 2.33; Moderate = 2.34 - 3.67; High = 3.68 - 5.00)

Table 2

*Coefficient Correlation between Physical Work Environment and Employees' performance*

	r	Sig.	N
Physical Work Environment and Employees' performance	0.265	.000	187

\* Correlation is significant at the 0.01 level

### Discussion and Recommendation

The outcomes of the study revealed that employees' performance can be enhanced by improving their behavior at work (CWB). Pre-employment tests can aid employers in determining whether an individual is more prone to engaging in CWB, and employers should aim to hire individuals who are less likely to engage in CWB. By assessing



conscientiousness, for instance, behavioral tests can help employers mitigate the risk of CWB (Karina, 2021). While this study proved that the physical work environment has significant relationships with overall employee performance despite low strength, however, the work environment can be arranged and designed to enhance employee satisfaction or enjoyment at work. According to Bruursema et al (2011), job boredom has a significant correlation with CWB, thus it is important to investigate how employees feel at work, which is significant to their emotional well-being, and can either be positive or negative and may influence their job performance (Obrenovic *et al.*, 2020).

### **Conclusion**

In a nutshell, we can conclude that respondents in the chosen company had positive perceptions about the physical work environment in their workplace which indirectly proves that the company provides them with a comfortable workplace to work in, which results in better performance. In this study, it was proven that the physical work environment in an organization has a significant effect on its employees. Consequently, organizations should ensure that employees have a comfortable and suitable physical work environment. However, companies should also pay attention to other matters that can affect employee performance, such as enhancing the co-worker relationship, having supervisors support employees in completing their tasks, and considering employees' working hours.

### **Acknowledgement**

The authors thank the Ministry of Higher Education (MOHE) Malaysia, Universiti Teknologi Malaysia for sponsoring this paper under Vot. No Q.J130000.3853.18J97. We would also like to express our gratitude to Mr. Poltak Mardianto S. for his generous support of this study.

### **References**

- Al Mehrzi, N., & Singh, S. K. (2016). Competing through employee engagement: a proposed framework. *International Journal of Productivity and Performance Management*, 65(6), 831-843.
- Ali, A. S., Chua, S. J. L., & Lim, M. E. L. (2015). The effect of physical environment comfort on employees' performance in office buildings: A case study of three public universities in Malaysia. *Structural Survey*.
- Ataliç, H., Can, A., & Canturk, N. (2016). Herzberg's motivation-hygiene theory applied to high school teachers in Turkey. *European Journal of Multidisciplinary Studies*, 1(4), 90-97.
- Block, P. (2016). *The empowered manager: Positive political skills at work*. New Jersey: John Wiley & Sons.
- Borman, W. C., & Motowidlo, S. J. (1993). Expanding the criterion domain to include elements of contextual performance. In: N. Schmitt, and W. C. Borman, (Eds.), *Personnel selection in organizations*. New York: Jossey-Bass, pp. 71-98.
- Bruursema, K., Kessler, S. R., & Spector, P. E. (2011). Bored employees misbehaving: The relationship between boredom and counterproductive work behaviour. *Work & Stress*, 25(2), 93-107.
- Chandrasekar, K. (2011). Workplace environment and its impact on organisational performance in public sector organisations. *International Journal Of Enterprise Computing And Business Systems*, 1(1), 1-19.
- Dartey-Baah, K., & Amoako, G. K. (2011). Application of Frederick Herzberg's Two-Factor

- theory in assessing and understanding employee motivation at work: a Ghanaian Perspective. *European Journal of Business and Management*, 3(9), 1-8.
- Davidescu, A. A., Apostu, S. A., Paul, A., & Casuneanu, I. (2020). Work flexibility, job satisfaction, and job performance among Romanian employees—Implications for sustainable human resource management. *Sustainability*, 12(15), 6086.
- Dewe, P., & Cooper, C. (2007) Coping research and measurement in the context of work related stress. In G. P. Hodgkinson, & J. K. Ford (Eds.), *International review of industrial and organizational psychology*, 22, 141–191). Chichester, UK: Wiley
- Diamantidis, A. D., & Chatzoglou, P. (2018). Factors affecting employee performance: an empirical approach. *International Journal of Productivity and Performance Management*. *International Journal of Productivity and Performance Management*, 68(1), 171-193.
- Griffin, M. A., Neal, A., & Parker, S. K. (2007). A new model of work role performance: Positive behavior in uncertain and interdependent contexts. *Academy Of Management Journal*, 50(2), 327-347.
- Hussin, A., & Paino, H. (2012). The importance of work environment facilities. *International Journal of Learning and Development*, 2(1), 289-298.
- Hussin, A., & Paino, H. (2012). The importance of work environment facilities. *International Journal of Learning and Development*, 2(1), 289-298.
- Joseph, I. (2016). Analysis the Influence of Physical Work Environment and Non-Physical Work Environment on Employee Productivity in General Hospital Gmim Kalooran Amurang South Minahasa Regency. *Jurnal Berkala Ilmiah Efisiensi*, 16(4).
- Karina, S. (2021). Counterproductive Work Behavior in Russian Nanotechnology Organizations. *Psychology in Russia: State of the art*, 14(1), 49-68.
- Kim, H. K. (2014). Work-life balance and employees' performance: The mediating role of affective commitment. *Global Business And Management Research: An International Journal*, 6(1).
- Koopmans, L., Bernaards, C. M., Hildebrandt, V. H., Schaufeli, W. B., De Vet, H. C., & Van Der Beek, A. J. (2011). Conceptual frameworks of individual work performance: A systematic review. *Journal Of Occupational And Environmental Medicine*, 856-866.
- Manu, A. (2015). The Effects of Work Environment on Employees Productivity in Government Organizations. A Case Study of Obuasi Municipal Assembly. Unpublished MBA Thesis, Kwame Nkrumah University of Science and Technology. Retrieved from Academia.edu.
- McCoy, J. M., & Evans, G. W. (2005). Physical work environment. In: J. Barling, E. K. Kelloway & M. R. Frone (Eds.), *Handbook of work stress*. Thousand Oaks, CA: Sage Publication pp. 219–245
- Naharuddin, N. M., & Sadegi, M. (2013). Factors of workplace environment that affect employees' performance: A Case Study of Miyazu Malaysia. *International Journal of Independent Research and Studies*, 2(2), 66-78.
- Nanzushi, C. (2015). The Effect of Workplace Environment on Employee Performance in the Mobile Telecommunication Firms In Nairobi City County. *Journal of Global Economics, Management and Business Research*, 7(1).
- Nzewi, H. N., Augustine, A., Mohammed, I., & Godson, O. (2018). Physical work environment and employee performance in selected brewing firms in Anambra State, Nigeria. *Journal of Good Governance and Sustainable Development in Africa*, 4(2), 131-145.

- Obrenovic, B., Jianguo, D., Khudaykulov, A., & Khan, M. A. S. (2020). Work-family conflict impact on psychological safety and psychological well-being: A job performance model. *Frontiers in psychology*, 11, 475.
- Pusparani, M., Amin, S., & Ali, H. (2021). The effect of work environment and job satisfaction on employee performance with organizational commitment as an intervening variable at the department of population control and family planning Sarolangun Regency. *Dinasti International Journal of Management Science*, 3(2), 202-219.
- Rahmi, T. E., Wibowo, S., & Mukti, M. A. (2018). The effect of physical work environment, work safety, occupational health and work discipline on employee productivity. *Journal of Research in Management*, 1(4), 33–41.
- Razak, A., Sarpan, S., & Ramlan, R. (2018). Effect of leadership style, motivation and work discipline on employee performance in PT. ABC Makassar. *International Review of Management and Marketing*, 8(6), 67.
- Roelofsen, P. (2002). The impact of office environments on employee performance: the design of the workplace as a strategy for productivity enhancement, *Journal of Facilities Management*. 1(3), 247-264.
- Rorong, S. V. (2016). The impact of physical work environment toward employee performance at PT. Bank Negara Indonesia Manado Regional Office. *Jurnal EMBA: Jurnal Riset Ekonomi, Manajemen, Bisnis dan Akuntansi*, 4(1).
- Tayfun, A. R. A. R., & Oneren, M. (2021). Role of Emotional Intelligence and Work-Life Balance in Relationship between Workplace Happiness and Perceived Performance in Academic Setting. *Ege Academic Review*, 21(4), 391-406.
- Widyastuti, T., & Hidayat, R. (2018). Adaptation of individual work performance questionnaire (IWPPQ) into Bahasa Indonesia. *International Journal of Research Studies in Psychology*, 7(2), 101-112.
- Yohe, G., & Tol, R. S. (2002). Indicators for social and economic coping capacity—moving toward a working definition of adaptive capacity. *Global Environmental Change*, 12(1), 25-40.