



The Effect of Work Environment and Work Stress on Perumda Tirtawening Employees Performance Bandung

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Abstract. This study aims to describe the work environment and work stress on employee performance. The design of this study was cross-sectional using a descriptive approach through quantitative methods. The unit of analysis was the employees of Perumda Tirtawening Bandung as many as 133 respondents. A questionnaire was used as a research instrument to collect data from respondents. The results of the study showed the effect of the work environment and work stress on employee performance at PT. Perumda Tirtawening Bandung was in the high category.

Keywords: work environment · work stress · performance

1 Introduction

Human resources that have the potential to provide a competitive advantage are becoming more important in today's era of globalization [1]. Human resource management in the organization is needed to direct all parties to achieve one goal. Organizational goals can be achieved when the performance of human resources can be improved effectively and efficiently [2]. Basically, the performance of an employee is an individual matter because each employee has a different level of ability in doing his job [3].

Every organization is required to always be able to keep its employees in order to show good performance and maintain employees so that they can dedicate themselves to the organization where employees work [4]. Performance issues are still the focus of studies in various sectors in many countries, both in the private and public sectors, in health institutions, education, banking, and small companies to state-owned companies [3].

Meanwhile, research on performance issues in the public sector, especially in Indonesia, in general still faces unresolved problems in providing satisfactory services to the community [5]. Employees have tasks with high deadlines and pressure due to time pressure. This result caused decreasing employee performance employees in the public sector and does not allow many public institutions to act effectively [6, 7].

This also applies to PDAM employees in several regions whose performance is still not optimal [8]. There are two factors that can affect employee performance, namely external factors, which affect employee performance from the environment, leadership, actions of colleagues, types of training and supervision, the wage system, and social environment, and internal factors related to a person's traits, including attitudes, personality traits, physical traits, desires or motivations, age, gender, education, work experience, cultural background, and other personal variables [9].

The level of education of an employee can increase the company's competitiveness and improve company performance. Performance appraisal describes the measurement of work using scales and indices so that the results can measure the desired quantity and quality accurately, free from personal judgments and unclear evaluation criteria [10].

The performance indicators used to assess the performance of PDAM employees consist of 5 (five) aspects consisting effectiveness, appreciation, increasing knowledge, skills, and work attitudes aspects. According to the view of human resources, turnover has a negative effect on performance due to the loss of skills, knowledge, and abilities possessed and developed by employees through training and experience [11]. There are 3 (three) main factors that influence performance, namely individual (ability to work), work effort (desire to work), and organizational support (opportunity to work) [12].

One of the factors that can influence employee performance is work stress [13]. It is also mentioned that stress has a positive effect on employees of any organization, but to a certain extent until the employee can handle it. However, if it exceeds the tolerable limit, it will have negative results on employees. The work environment is one of the factors that can control and even reduce the stress received by employees. This statement is in accordance with the results of an interview with one of the staff of the human resources department at Perumda Tirtawening, Bandung City in March 2019. He mentioned that one of the factors that caused low employee performance was employee work stress with unfavorable working conditions.

The formulation of the problem in this study is how the description of the work environment, work stress, and employee performance at Perumda Tirtawening Bandung. The purpose of this study is to determine the description of the work environment, work stress, and employee performance at Perumda Tirtawening Bandung.

2 Methods

This research discusses the description of the work environment, work stress, and employee performance at Perumda Tirtawening Bandung. This research was conducted at Perumda Tirtawening, Bandung in March-July 2021. This study used three variables, namely the work environment (X_1) with the physical environment dimension, the non-physical environment variable (X_2) is work stress with work conditions, roles, intrapersonal factors, career development, and organizational structure dimensions. Another variable is employee performance (Y) which consists of effectiveness, appreciation, increased knowledge, skills, and work attitude. The data were collected by distributing online questionnaires using Google Forms which were filled out by respondents and processed by researchers.

This research is descriptive research using quantitative methods. The type of data in this study consisted of general data related to the work environment, work stress, and

employee performance of Perumda Tirtawening Bandung. There are two sources of data used, namely primary data and secondary data. Data collection techniques used were observation, interviews, and questionnaires.

The population in this study were employees of Perumda Tirtawening Bandung consisting of 200 people. Based on the Slovin formula used to calculate the sample, it was found that 133 respondents were involved in the study.

Descriptive analysis aims to turn data sets into information that is easy to understand. Descriptive data analysis is done by classifying and interpreting the data obtained, which then were analyzed in order to obtain an overview of the variables. The research tool used in this research was a questionnaire. It was compiled based on the variables contained in the study including a descriptive analysis of the work environment (X1) which consists of the physical environment and non-physical environment. Work stress variable (X2) which consists of work stress with dimensions of work conditions, roles, intrapersonal factors, career development, and organizational structure. Another variable is employee performance (Y) which consists of effectiveness, appreciation, increased knowledge, skills, and work attitude.

Descriptive analysis using a questionnaire in this study was assisted by the SPSS 25.0 for Windows. To categorize the calculation results, a percentage interpretation criterion was used which was taken from 0% to 100%. The interpretation of data processing was based on criteria ranging from 0% (no one) to 100% (all) as stated by Sugiyono [14].

A continuum line is a line used to analyze, measure, and show how big the level of power of the variable studied is according to the instrument used. The process of research activities requires instruments or tools used to collect data such as questionnaires. The questionnaire contains various statements submitted to respondents or samples in a research process. The number of statements contained in the research questionnaire is quite large, so scoring is needed to facilitate the assessment process and will assist in the process of analyzing the data that has been found. As in the scoring on the questionnaire, it must meet the conditions. There is a formula for finding the ideal score as follows [14].

Maximum Index Value = Highest Score \times Item Number \times Respondents Number

Minimum Index Value = Lowest Score \times Item Number \times Respondents Number

Variable Level = Maximum Index Value – Minimum Index Value

Interval Distance = $\frac{\text{Maximum Index Value} - \text{Minimum Index Value}}{\text{Interval Number}}$

Score Percentage = [(Score Total:Maximum Score) \times 100.

3 Results and Discussion

The results of the study through the distribution of questionnaires to 133 respondents show that the physical work environment sub-variable scores 2,544 from the ideal score of 3,325 or 76.5%, and the non-physical work sub-variable obtains a score of 2,080 from the ideal score of 2,660 or 78.1% (Table 1).

This indicates that the work environment has a very good assessment according to respondents' answers. Of the two dimensions, the one that gets the highest score is the non-physical work environment dimension with a score of 2,080 from the ideal score of

Table 1. Work environment results

No	Dimensions	Total Score	Ideal Score	%
1	Physical work environment	2,544	3,325	76.5%
2	Non-physical work environment	2,080	2,660	%
Total		4,624	5,985	77.3%

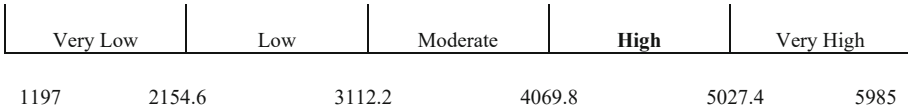


Fig. 1. Work environment continuum

2,660 or 78.1%. The description of the work environment as a whole obtains a score of 4,624 from an ideal score of 5,985 or 77.3%, meaning that most respondents said that the work environment is in the high category as illustrated in Fig. 1.

Based on the results of these scores, it is known that the work environment is in the high category.

The results of the study through the distribution of questionnaires to 133 respondents show that the work conditions sub-variable scores 1,511 from the ideal score of 1,995 or 75.7%, the role sub-variable obtains a score of 1,529 from the ideal score of 1,995 or 76.6%, the interpersonal sub variable obtains a score of 1,553 from the ideal score is 1,995 or 77.8%, the career development sub variable gets a score of 1,337 from the ideal score of 1,995 or 67%, and the organizational structure sub variable gets a score of 1,455 from the ideal score of 1,995 or 72.9% (Table 2).

This shows that work stress has a good assessment according to respondents' answers. Of the five dimensions, the one that gets the highest score is the interpersonal factor dimension with a score of 1,553 from the ideal score of 1,995 or 77.8%. The description of work stress as a whole obtains a score of 7,385 from the ideal score of 9975 or 74%, meaning that most respondents said that work stress is in the high category as illustrated in Fig. 2.

Table 2. Work stress results

No.	Dimensions	Total Score	Ideal Score	%
1	Working Conditions	1,511	1,995	75.7%
2	Roles	1,529	1,995	76.6%
3	Interpersonal Factors	1,553	1,995	77.8%
4	Career Development	1,337	1,995	67%
5	Organizational Structure	1,455	1,995	72.9%
Total		7,385	9,975	74%

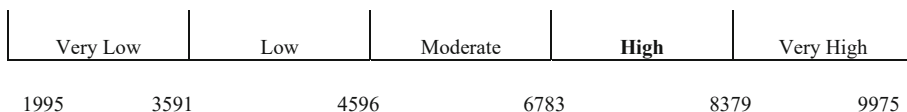


Fig. 2. Work stress continuum

Based on the results of the acquisition of these values, it is known that work stress is in the high category.

The results of the study through the distribution of questionnaires to 133 respondents show that the effectiveness sub-variable obtains a score of 1,344 from the ideal score of 1,995 or 67.3%, the appreciation sub-variable obtains a score of 1,075 from the ideal score of 1,995 or 53.8%, the knowledge sub-variable obtains a score of 1,663 from the score ideal 1,995 or 89.3%, the skills sub-variable gets a score of 1.337 from the ideal score of 1.995 or 67%, the work attitude sub-variable gets a score of 1.455 from the ideal score of 1.995 or 72.9% (Table 3).

This shows that employee performance has a good assessment according to the respondents' answers. Of the five dimensions, the one that obtains the highest score is the knowledge dimension with a score of 1,663 from the ideal score of 1,995 or 89.3%. An overview of employee performance as a whole obtains a score of 6,874 from an ideal score of 9,975 or 70%, meaning that most respondents said that employee performance is in the high category as illustrated in Fig. 3.

Based on the results of these scores, it is known that employee performance is in the high category.

Table 3. Performance results

No.	Dimensions	Total Score	Ideal Score	%
1	Effectiveness	1,344	1,995	67.3%
2	Appreciation	1,075	1,995	53.8%
3	Knowledge	1,663	1,995	89.3%
4	Skills	1,337	1,995	67%
5	Work Attitude	1,455	1,995	72,9%
Total		6,874	9975	70%

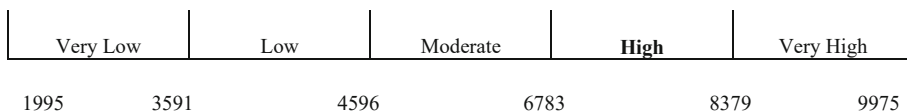


Fig. 3. Continuum Line of Employee Performance

4 Conclusions

The description of the work environment for the employees of Perumda Tirtawening Bandung was in the high category. For the description of work stress on employees of Perumda Tirtawening Bandung was also high. The performance of employees at the Perumda Tirtawening Bandung were in the high category, which shows that the employee performance according to most of the employees of Perumda Tirtawening Bandung has been going well, though it still needs to be improved.

This research is expected to assist future researchers in conducting research on the description of the work environment, work stress, and employee performance using either the same or different indicators from more diverse theoretical sources and on different objects. There are still many limitations in this study, especially those related to research methods and data collection techniques.

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