

The Influence of Work Environment and Workload on Stress Levels of PAM Tirta Mangkaluku Employees.

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Abstract

Study This was done to determine the influence of the work environment and workload on the stress level of PAM Tirta Mangkaluku employees. This research is quantitative research with the population being all employees at PAM Tirta Mangkaluku, totaling 316 employees and the research sample totaling 177 employees. The results of this research indicate that the work environment has an influence on employee stress levels. Workload has an influence on employee stress levels. The implications of research on the work environment influence work stress, namely that a physically uncomfortable work environment, such as inappropriate temperature, poor lighting, or inadequate facilities, can contribute to stress levels. PAM employees are in a situation where they have to work under constant and tight time pressure, this can increase stress levels. And regarding the workload variable, excessive workload can cause physical and mental fatigue, conflict between work life and personal life, as well as other mental and physical health problems. However, a workload that is balanced and in accordance with the abilities of PAM employees can trigger motivation and job satisfaction.

Keywords: Work environment, workload, employee stress.

1. Introduction

PAM (Drinking Water Company) is a company that distributes drinking water to the community. Every organization, both private and government, requires quality human resources as a workforce that produces ideal work according to job objectives. A person as an employee or employee is an important asset for a company because they have the talent, energy and creativity needed to achieve the goals of the organization or company. Various issues that can affect employee performance include the impact of social media use and work-family conflict. This research discusses this.

PAM Tirta Mangkaluku Palopo City is a regional organization that operates in the field of clean water management. PAM Tirta Mangkaluku Palopo City is an organization that has a mission to "create profits" and should provide the most ideal support because it cannot be denied that the way to achieve standards in dealing with other people and meeting their needs is by "giving support". The decline in organizational seriousness is one of the determining factors in how organizations provide great support in working with existing implementation. It is hoped that PAM Tirta Mangkaluku Palopo City will continue to strive for the

representation of its representatives to create a good atmosphere. its implementation will make it easier for every employee to do their work [1].

A company's success cannot be separated from its human resources. Human resources are an important factor that cannot be separated from an organization. With the help of human resources, companies can carry out their activities to achieve the same goals. Employees are an important element for an organization or company, without employees the company cannot function effectively and create plans, systems, processes and goals that can be achieved within the organization. So, it can be said that a company can develop quickly if it has personnel who are competent in their field

The workplace is one of the factors that influences employee stress levels. How employees perform a company's work is directly influenced by their work environment. Sedarmayanti (2017) in [2] said that "The work environment means all the tools and materials encountered, the surrounding environment where a worker is, his work methods, and his work arrangements both as individuals and in groups." Nuraini (2013:97) in (Rosminah, 2021) said that "the work environment is everything that is around a worker and can influence the performance of assigned tasks.

According to [3], there are five work environment indicators: lighting, air temperature, noise, spatial layout, and five. Employee relations Workload greatly influences employee stress, in addition to work environmental factors. Basically, workload is something that automatically exists and will be owned by someone as the holder of responsibility in a job. The burden received by each worker varies depending on the type of work and position held by the worker.

[4] define workload as a group or number of activities that must be completed by workers within a certain period of time. [5] explains workload as the average frequency of all work within a certain period of time, which includes physical and mental workload. Workload is defined as a collection of tasks that must be completed by an individual or group of individuals during a certain period of time in normal activities [6].

Factors known as stressors can influence the level of stress felt directly by employees. Irawati and Carrollina, in 2017 internal and external factors influence work. Internal factors consist of somatic and psychological factors, which are the body's reaction to external workloads. The severity of the strain can be assessed subjectively or objectively. Somative (gender, age, body size, nutritional status, and health condition) and psychological (motivation, perception, beliefs, desires, and satisfaction) are internal factors.

According to [7] there are 4 indicators of workload, namely:

Targets that must be achieved: Individual views regarding the size of the work targets given to complete their work. Views regarding work results that must be completed within a certain time period.

Working Conditions: Includes how individuals view their working conditions, for example making decisions quickly when working on goods, as well as dealing with unexpected events such as doing extra work outside the specified time.

Time Use: Work Time used in activities directly related to production (circle time, or standard or basic time).

Job Standards: The impression that an individual has regarding his or her work, for example the feelings that arise regarding the workload that must be completed within a certain time period.

According to [8], individuals feel stress when the resources they have cannot balance the demands they have to make. So, it can be said that psychological and physiological disorders in individuals can be said to be stress conditions in individuals. Not all individuals can cope with high task demands on themselves, and vice versa, there are some individuals who can overcome this. Subjective evaluation is the ability to deal with stressful events in an individual. Work stress can be interpreted as a source or work stressor that causes individual reactions in the form of physiological, psychological and behavioral reactions. Every aspect of work can cause stress. Workers can determine to what extent the situation they are facing is a stressful situation or not. A condition of tension that creates a physical and psychological imbalance that affects the emotions, thought processes and condition of workers can be said to be work stress [9]. Based on the definitions above, it can be concluded that the occurrence of work stress is due to an imbalance between the personality characteristics of workers and the characteristics of aspects of their work and can occur in all work conditions.

Job Stress Indicators According to [10], namely; (1) Task demands; (2) Role demands; (3) Interpersonal demands; (4) Organizational structure; (5) Organizational leadership. There are many problems that affect employee stress levels and this is a challenge for organizations or companies in managing quality human resources. One of the factors that influences employee stress levels is the work environment and workload. Therefore, companies must have an important role in dealing with employee stress.

The following are several studies that explain the differences in research results; According to research results [11] found that there is a significant influence between the work environment on employee stress. However, this is contrary to research [12] which found that there is no significant influence between the work environment on employee stress. Regarding the workload variable, according to previous research [13] [14] which found that workload influences employee work stress. However, this is contrary to research conducted by [15] which found that workload did not have a significant effect on employee work stress.

Based on the description above, it is shown that researchers have carried out updates so that the research carried out is more robust, because the content contained in each journal can be used as a reference. Of the several previous research journals, none discussed this ***The Influence of Work Environment and Workload on Stress Levels of PAM Tirta Mangkaluku Employees***. Thus, it can be concluded that the research that will be carried out is relatively new, not many previous researchers have done it and also judging from the research location, no one has researched the Tirta Mangkaluku PAM location.

Figure 1. Conceptual Framework

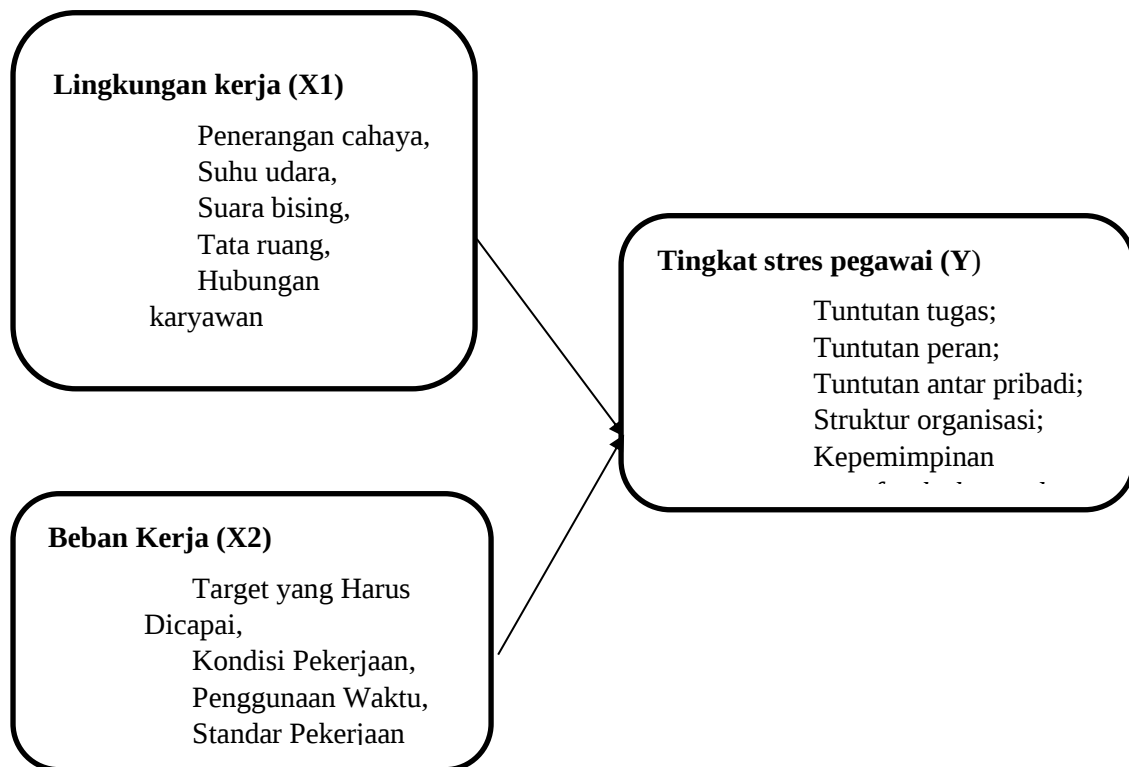


Figure 1. Conceptual Framework

Research Hypothesis

H1: It is suspected that the work environment influences employee stress levels

H2: It is suspected that the influence of workload has an influence on employee stress levels

H3: It is suspected that the influence of the work environment and workload simultaneously influences employee stress levels

2. Methodology

The type of research used is quantitative causality research, where this type of research looks for the relationship between one variable and another variable that has cause and effect (influence). The research was carried out at PAM Tirta Mangkaluku, Palopo City, which is located at Jl. Pongsimpin No. 14 Murante Village, Mungkajang District, Palopo City, South Sulawesi Province. This research was carried out from October to December 2023. The population is the entire data source required in this research, employees of PAM Tirta Mangkaluku, Palopo City, totaling 316 employees. The sample that will be used in this research is 177 employees of PAM Tirta Mangkaluku, Palopo City. The sample is part of the population studied. The sample chosen in the research was part of the employees of PAM Tirta Mangkaluku, Palopo City.

$$n = \frac{N}{1 + N Y_{es}^2}$$

$$n = \frac{316}{1 + 316(0,05)^2} \quad n = \frac{316}{1 + 316(0,0025)^2}$$

$$n = \frac{316}{1 + 0,79} \quad n = \frac{316}{1,79}$$

$$n = 177$$

The researcher's data collection techniques were carried out by means of observation, interviews and questionnaires. This research uses a combination of data collection techniques, namely a questionnaire in the form of a closed questionnaire, that is, the answers have been provided by the researcher and the respondent just has to choose the answer. The method used in this research is the instrument analysis method, namely validity test, reliability test, multiple linear regression test, T test and F test to determine the effect of the work environment (X1), workload (X2), on employee stress levels (Y). This method was tested using the SPSS 26 computer program. The influence of the independent variable on the dependent variable was tested using a confidence level of 95% or a of 5%.

3. Results and Discussion

3.1 Results

Validity test used to measure whether a questionnaire is valid or not. This test is carried out using *pearson correlation*, namely by calculating the correlation between the values obtained from the statements made. The guideline for a model is said to be valid if the calculated *r* is greater than the *r* table and the *r* value is positive. In this research, the correlation coefficient calculation was carried out using SPSS version 26 software.

Table 1. Compensation Variable Validity Test Results (X₁)

NO	Statement	r count	r table	Information
1	X1.1	0,935	0,148	Valid
2	X1.2	0,962	0,148	Valid
3	X1.3	0,936	0,148	Valid
4	X1.4	0,939	0,148	Valid
5	X1.5	0,414	0,148	Valid
6	X1.6	0,922	0,148	Valid
7	X1.7	0,928	0,148	Valid
8	X1.8	0,342	0,148	Valid

Source: SPSS 26 Data Processing Results for 2023

Table 2. Validity Test Results for the Workload Variable (X₂)

NO	Statement	r count	r table	Information
1	X2.1	0,360	0,148	Valid
2	X2.2	0,650	0,148	Valid
3	X2.3	0,834	0,148	Valid
4	X2.4	0,795	0,148	Valid
5	X2.5	0,390	0,148	Valid
6	X2.6	0,644	0,148	Valid

7	X2.7	0,819	0,148	Valid
8	X2.8	0,399	0,148	Valid

Source: SPSS 26 Data Processing Results, 2023

Table 3. Validity Test Results of the Job Stress Variable (Y)

NO	Statement	r count	r table	Information
1	Y.1	0,448	0,148	Valid
2	Y.2	0,669	0,148	Valid
3	Y.3	0,468	0,148	Valid
4	Y.4	0,678	0,148	Valid
5	Y.5	0,480	0,148	Valid
6	Y.6	0,482	0,148	Valid
7	Y.7	0,553	0,148	Valid
8	Y.8	0,412	0,148	Valid

Source: SPSS 26 Data Processing Results, 2023

Based on the results of the analysis, it shows that all statements from the independent and dependent variables are declared valid because they have a calculated r value (*corrected Item Total Correlation*) which is greater than the r-table value (0.148) obtained from looking at the r-table using the value $df = N-2$ and the level of significance used, so it can be concluded that the questionnaire indicators in this study can be declared valid and used as a variable measuring tool.

Reliability Test

Table 4. Reliability Test Results

Variable	Alpha Value Cronbach's	Status
Work Environment (X1)	0,883	Reliable
Workload (X2)	0,772	Reliable
Job Stress (Y)	0,617	Reliable

Source: SPSS version 26 output data (2023)

Mark *Cronbach's alpha* on the work environment variable is 0.883, workload is 0.772, while work stress is 0.617. Thus, it can be concluded that the statements in the questionnaire are reliable because they have a value *Cronbach's alpha* greater than 0.60.

T Test (Partial)

Table 5. T Test Results (Partial)

Model		Unstandardized Coefficients	Std. Error	Standardized Coefficients	t	Sig.
		B		Beta		
1	(Constant)					
	Work	13.595	1.352		10.058	.000
	environment	.182	.064	.271	2.862	.005
	Work load	.403	.077	.499	5.256	.000

Source: SPSS 26 data (Data processed in 2023)

Based on the results of the partial t test analysis, it can be seen by testing the significance of the independent variable regression coefficient. If the significant value is > 0.05 , then the null hypothesis is accepted (the regression coefficient is not significant). This

means that partially the independent variable does not have a significant influence on the dependent variable. Conversely, if the significant value is <0.05 then the null hypothesis is rejected (the regression coefficient is not significant). This means that partially the independent variable has a significant influence on the dependent variable. From t count it shows that:

1. The calculated t test results for the work environment = $2,862 > t$ table $1,653$, with a sign number of $0.004 < 0.05$. So this hypothesis is accepted, meaning that there is a significant influence between the work environment on employee stress levels.
2. The calculated t test results for workload = $5,256 > t$ table $1,653$, with a sign number of $0.000 < 0.05$. So this hypothesis is accepted where there is a significant influence between workload on employee stress levels.

Based on the table above, the multiple linear regression equation and its explanation can be taken as follows:

$$Y = a + b_1X_1 + b_2X_2 + \text{and}$$

$$Y = 13,595 + 0.182 (X_1) + 0.403 (X_2) + \text{and}$$

1. The constant value of 13.595 is the stress level of PDAM Tirta Mangkaluku employees when the variable (X_1) and (X_2) constant value (fixed)
2. Coefficient value (β_1) of 0.182 units, meaning that for every increase in the Work Environment variable (X_1) by one unit, the employee's stress level increases by 0.182 units assuming variable X_2 considered fixed or constant.
3. Coefficient value (β_2) of 0.403 units, meaning that for every increase in the Workload variable (X_2) by one unit, the employee's stress level increases by 0.403 units assuming variable X_1 considered fixed or constant.

Uji F

Table 6. F Test Results (Simultaneous)

Model		Sum of Square	df	Mean Square	f	Sig.
1	Regression	456.057	2	228.028	106.710	.000 ^b
	Residual	371.819	174	2.137		
	Total	827.876	176			

Based on the table above, it is found that the calculated f is 106,710 which is greater than the f table, namely 3.05. This shows that the calculated f value has exceeded the f table ($106.710 > 3.05$), it is also found that the significance value is 0.000 so that it does not exceed the specified probability value, namely 5% ($0.000 < 0.05$), which means that the independent variable is the environmental variable. The work and workload used by researchers together have an influence on the dependent variable, namely employee stress levels.

3.2 Discussion

The influence of the work environment (X_1) on employee stress levels (Y)

Based on the results of hypothesis testing that has been carried out, in this research it can be seen that partially the Work Environment (X_1) has a significant influence on Employee Stress Levels (Y). These results were obtained through the t test with a calculated t

value of 2.862 and a known t table of 1.653. Based on these values, it can be seen that $t \text{ count} > t \text{ table}$, namely $2.862 > 1.653$ and the sign value is $0.004 < 0.05$, so from the results of this comparison it can be concluded that the Work Environment (X1) partially has a significant effect on Employee Stress Levels (Y).

The work environment influences the stress level of PAM Tirta Mangkaluku employees. PAM employees who feel that they have too many tasks or responsibilities that they have to handle in a limited time can cause high levels of stress. A work environment that is less socially supportive, both from colleagues and superiors, can increase the level of isolation and stress for PAM employees. Experiences of injustice or discrimination in the workplace can also create an unhealthy environment and cause stress in employees. Physically uncomfortable work environments, such as inappropriate temperatures, poor lighting, or inadequate facilities, can contribute to stress levels. PAM employees are in a situation where they have to work under constant and tight time pressure, this can increase stress levels. This is in line with previous research conducted by [11] which found that there is a positive influence between the work environment and work stress.

Effect of Workload (X2) on Employee Stress Levels (Y)

Based on the results of hypothesis testing that has been carried out, in this research it can be seen that partially Work Load (X2) has a significant influence on Employee Stress Levels (Y). These results were obtained through the t test with a calculated t value of 5.256 and a known t table of 1.653. Based on these values, it can be seen that $t \text{ count} > t \text{ table}$, namely $5.256 > 1.653$ and the sign value is $0.000 < 0.05$, so from the results of this comparison it can be concluded that Work Load (X2) partially has a significant effect on Employee Stress Levels (Y).

Workload influences the stress level of PAM Tirta Mangkaluku employees. High workload basically tends to increase the stress level of PAM employees, and the impact tends to be negative. Excessive workload can cause physical and mental fatigue, conflict between work life and personal life, and other mental and physical health problems. However, a workload that is balanced and in accordance with the abilities of PAM employees can trigger motivation and job satisfaction. Challenging but manageable work can increase your sense of accomplishment and personal pride. This can have a positive impact on the motivation, engagement and productivity of PAM employees. If the workload exceeds the employee's abilities or resources, the impact is more likely to be negative and cause stress. Therefore, PAM Tirta Mangkaluku pays close attention to the workload of its employees, and employees have sufficient support to cope with the assigned tasks. This is in line with previous research conducted by [16] [13] [14] which found that workload influences employee work stress.

The Influence of Work Environment and Workload on Employee Stress Levels

Based on the results of hypothesis testing, it is known that the F-count value is 106,710 with a significance level of 0.000, while the F-table is 3.05 with a significance level of 0.05. Thus, $F\text{-count} > F\text{-table}$ is $106,710 > 3.05$, meaning that H_0 is rejected so it can be concluded that there is a significant influence between the work environment and workload on the stress of PAM Tirta Mangkaluku employees.

Thus, it can be concluded that there is a positive and significant influence of the work environment (X1) and workload (X2) on employee stress (Y), so these two factors can form

employee stress (Y). This means that there is a unidirectional and real influence or relationship between the independent variables (work environment and workload) on the dependent variable (employee stress) simultaneously or in other words, if the work environment (X1) and workload (X2) are increased then simultaneously -the same can also increase employee stress (Y). This shows that improving the work environment (X1) and workload (X2) will increase employee stress (Y) positively and significantly. This is in line with previous research (Zulmaidarleni et al., 2019) (Abdullah & Utomo, 2020) (Ananda et al., 2021) which states that workload and work environment partially or simultaneously have a significant effect on the work stress of PT KAI employees. Regional Division IV Tanjungkarang.

4. Conclusion

This research was conducted to find out whether the PAM Tirta Mangkaluku Work Environment and the Workload of PAM Tirta Mangkaluku employees have an impact on the Stress Level of PAM Tirta Mangkaluku Employees. Based on the calculation results, the following conclusions can be obtained:

Work Environment (X₁) has an influence on Employee Stress Levels (Y). So, PAM Tirta Mangkaluku must pay attention to the work environment, in other words the better the work environment at PAM Tirta Mangkaluku, the less stress levels for employees. Workload (X₂) Has an Influence on Employee Stress Levels (Y). So, PAM Tirta Mangkaluku must pay attention to the workload on employees, because if the workload is high then the stress level on employees will increase, and vice versa if the workload is low then the stress level on employees will decrease. Therefore, PAM Tirta Mangkaluku needs to balance the workload on its employees. The work environment and workload have an influence on employee stress levels. So, PAM Tirta Mangkaluku must pay more attention to the work environment and workload in order to reduce stress levels in employees.

Suggestion

Researchers are expected to improve this research by including other variables that influence work stress and developing theories about the variables and methodology used. Analyzing additional data for the meantime, it is hoped that PAM Tirta Mangkaluku will be able to improve strategies in an effort to improve the work environment and pay attention to workload so that employees do not experience work stress. The work environment can be improved by open communication, providing support, time flexibility, recognition and appreciation. Meanwhile, paying attention to workload can be done by organizing tasks wisely, prioritizing important work, and considering efficient resource allocation can help reduce stress caused by excessive work pressure.

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6. Reference

- [1] Syam, F., Haedar, H., & Dewi, S. R. (2023). Analysis of the Effect of Compensation and Work Discipline on Employee Performance at PAM Tirta Mangkulu, Palopo City. *SEIKO: Journal of Management & Business*, 6(1), 988–1000.
- [2] Afandi. (2018). Review of Human Resource Management literature. *Molucca Medica*, 11(April), 13–45. <http://ojs3.unpatti.ac.id/index.php/moluccamed>.
- [3] Yohanes B Windo Talibana. (2022). The Influence of Compensation, Work Environment and Work Stress on Work Productivity (Literature Review of Human Resource Management). *Initiative: Journal of Economics, Accounting and Management*, 1(4), 01–09. <https://doi.org/10.30640/inisiatif.v1i4.344>
- [4] Wahdaniah, & Gunardi, A. (2018). The Influence of Workload and Work Stress on Employee Performance at the Public Works Department of Majene Regency. *MANDAR: Management Development and Applied Research Journal*, 1(1), 51–65. <http://ojs.unsulbar.ac.id/index.php/mandar>
- [5] Fadilah, S. H. (2020). The Influence of the Work Environment, Work Stress, and Workload on Employee Performance at the Nganjuk Regency Manpower, Cooperatives and Micro Enterprises Department. *Applied Chemistry International Edition*, 6(11), 951–952., 5–24.
- [6] Setiawati, F. (2016). *The Influence of Workload and Individual Characteristics on Employee Performance at PT. Maybank Indonesia Tbk Samarinda Central Branch*.
- [7] Aksama, I. G. U., Heryanda, K. K., & Widiastini, N. M. A. (2020). The Effect of Workload on Sales Promotion Performance with Motivation as a Moderating Variable at Pt. World Innovative Telecommunication Singaraja branch. *Prospects: Journal of Management and Business*, 1(2), 67. <https://doi.org/10.23887/pjmb.v1i2.23156>
- [8] Ningrat, Q. S., & Mulyana, O. P. (2022). The relationship between job demands and work stress. *Journal of Psychological Research*, 9(3), 100–108. <https://ejournal.unesa.ac.id/index.php/character/article/view/46393>
- [9] Alvionita, R. (2016). *The Influence of Job Stress, Work Environment, and Organizational Culture on Employee Performance (Study in Offices)*.
- [10] Massie, R. N., Areros, W. A., & Wahelmina, R. (2018). The Effect of Work Stress on Employee Performance at the Manado It Center Management Office. *Journal of Business and Investment Research*, 3(2), 74–83.
- [11] Rizki, M., Hamid, D., & Mayowan, Y. (2019). The influence of the work

- environment on employee work stress (Study of PT PLN (Persero) Employees, East Java Distribution, Malang Service Area). *Journal of Business Administration*, 41(1), 9–15. <https://media.neliti.com/media/publications/71944-ID-pengaruh-motivasi-terhadap-kinerja-karya.pdf>
- [12] Nurdianti, C. N., & Rahardjo, T. H. (2018). The Influence of Work Environment, Workload and Work Conflict on Work Stress of Pt. Employees. *Inti Manunggal Sejahtera Abadi. Satya Mandiri Journal of Management and Business*, 4(1), 102–109. <https://doi.org/10.54964/satyamandiri.v4i1.317>
- [13] Ramadhani, M. S., Ramli, A., & Akbar, A. (2022). The Effect of Workload on Work Stress and Employee Performance of Pt. Mahalona's son. *Colleague Business Journal*, 8(2), 58–67. <https://doi.org/10.57249/jbk>
- [14] Nurhanifah, H., & Susanty, A. I. (2023). The Influence of Workload on Employee Work Stress at PT Xyz, Bandung Regency. *E-Proceeding of Management*, 10(1), 41–47.
- [15] Sari, V. N., Safitri, R., & Sulistyowati, E. (2022). The Effect of Workload and Work Environment on Employee Performance with Work Stress as an Intervening Variable at PT Batanghari Barisan Padang. *Maksipreneur Journal: Management, Cooperatives, and Entrepreneurship*, 12(1), 288. <https://doi.org/10.30588/jmp.v12i1.431>
- [16] Raharja, K., & Heryanda, K. K. (2021). The Effect of Workload on Work Stress of Buleleng Regency BPBD Employees with Work Environment as a Moderating Variable. *Bisma: Management Journal*, 7(2), 201. <https://doi.org/10.23887/bjm.v7i2.31936>