The Role of Work Stress in Moderating Employee Performance

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Abstract
This study aims to analyze the effect of Workload and Role Conflict on Employee Performance with Work Stress as a moderating variable at the Representative Office of Bank Indonesia in Pematangsiantar. The research employs a quantitative approach using Structural Equation Modeling (SEM) analysis based on SmartPLS 3.0. The research sample consists of employees at the Representative Office of Bank Indonesia in Pematangsiantar, selected through purposive sampling. The results indicate that Workload and Role Conflict have a significant negative effect on Employee Performance, and Work Stress also negatively affects employee performance. However, Work Stress was not proven to moderate the relationship between Workload or Role Conflict and Employee Performance. These findings provide important implications for management at the Representative Office of Bank Indonesia in Pematangsiantar to effectively manage workload, role conflict, and employee stress levels to improve performance, productivity, and employee well-being.

Keywords: Workload, Role Conflict, Employee Performance, Work Stress, Moderation.

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Introduction

Organizations need to understand and manage various factors that can affect their employees' performance, both internal and external. One factor that often receives attention in human resource studies is workload. Workload is the amount of work that must be completed by an employee within a certain period. In practice, workload is not always balanced; some employees experience excessive workload (overload), while others may experience too little workload (underload). Excessive workload can cause physical and mental fatigue, decreased concentration, and ultimately lead to a decline in the quality and quantity of employee work output. Role conflict is also an important factor that can affect performance. Role conflict occurs when an employee faces conflicting, unclear, or personally incompatible role demands. In complex work environments, such as in state financial institutions, employees are often confronted with various roles and responsibilities that require high multitasking skills and flexibility. When employees are confused about the roles they must perform, this can cause stress, reduce job satisfaction, and directly impact their performance. To a certain degree, stress can motivate someone to work more focused and quickly; however, if excessive, stress can disrupt mental and physical health, reduce productivity, and cause work errors. High work pressure, multitasking roles, and public expectations for service quality make issues of workload, role conflict, and work stress very relevant to study. If these factors are not managed properly, they can decrease the quality of employee performance, which ultimately impacts the achievement of the organization's strategic goals. Therefore, it is important to conduct research that thoroughly examines how workload and role conflict affect employee performance, and how work stress moderates that relationship. In recent years, the Representative Office of Bank Indonesia in Pematangsiantar has faced challenges in human resource management, particularly related to increasing workload and role ambiguity among employees. Employees often have to handle tasks outside their job descriptions, work under time pressure, and face high expectations from leadership and the public. This situation has led to complaints regarding work stress, fatigue, and declining performance, reflected in the non-achievement of certain work targets and decreased internal job satisfaction.

Problem Formulation

1. Does workload have a negative effect on employee performance at the Representative Office of Bank Indonesia in Pematangsiantar?
2. Does role conflict have a negative effect on employee performance at the Representative Office of Bank Indonesia in Pematangsiantar?
3. Does work stress have a negative effect on employee performance at the Representative Office of Bank Indonesia in Pematangsiantar?
4. Does workload have a negative effect on employee performance moderated by work stress at the Representative Office of Bank Indonesia in Pematangsiantar?
5. Does role conflict have a negative effect on employee performance moderated by work stress at the Representative Office of Bank Indonesia in Pematangsiantar?

Research Objectives

1. To test and analyze the effect of workload on employee performance at the Representative Office of Bank Indonesia in Pematangsiantar.
2. To test and analyze the effect of role conflict on employee performance at the Representative Office of Bank Indonesia in Pematangsiantar.
3. To test and analyze the effect of work stress on employee performance at the Representative Office of Bank Indonesia in Pematangsiantar.
4. To test and analyze the effect of workload on employee performance moderated by work stress at the Representative Office of Bank Indonesia in Pematangsiantar.
5. To test and analyze the effect of role conflict on employee performance moderated by work stress at the Representative Office of Bank Indonesia in Pematangsiantar.

Employee Performance

According to Fahmi (2020), performance is the level of success of an individual in carrying out tasks and responsibilities based on indicators set by the organization. Wibowo (2016) states that employee performance is the work results achieved by individuals according to their role or responsibility in the organization.

Indicators of Employee Performance

Based on Fahmi (2020), indicators of employee performance include:

1. Quality of work
2. Quantity of work
3. Timeliness
4. Discipline
5. Ability to cooperate

Workload

According to Haryanti and Kusumawati (2018), workload is the intensity of work that must be borne by a person both physically and mentally in carrying out their work tasks. Siahaan & Marpaung (2020) state that workload is a number of tasks or responsibilities that must be completed by employees within a certain period, which can affect an individual's physical and psychological abilities.

Indicators of Workload

Referring to Haryanti and Kusumawati (2018), workload indicators consist of:

1. Physical workload
2. Mental workload
3. Time workload
4. Emotional workload

Role Conflict

According to Wijaya and Nugroho (2017), role conflict occurs when there is a discrepancy between role expectations in work and the reality or ability of the individual to carry them out. Rachmawati and Lestari (2020) state that role conflict is a condition where an individual experiences pressure due to conflicting role demands or demands that are incompatible with personal or organizational expectations.

Indicators of Role Conflict

According to Rachmawati and Lestari (2020), role conflict indicators consist of:

1. Role ambiguity
2. Role incompatibility
3. Conflicting role demands
4. Role imbalance

Work Stress

Handayani and Ardiansyah (2019) state that work stress is an individual's reaction to work pressure that arises due to workload, conflict, or role ambiguity. According to Susanti and Prabowo (2021), work stress is defined as a condition of emotional and physical tension experienced by employees due to excessive work pressure or pressure that does not match their abilities.

Indicators of Work Stress

Referring to Susanti and Prabowo (2021), work stress indicators include:

1. Physical symptoms
2. Psychological symptoms
3. Behavioral symptoms
4. Decreased job satisfaction

Conceptual Framework

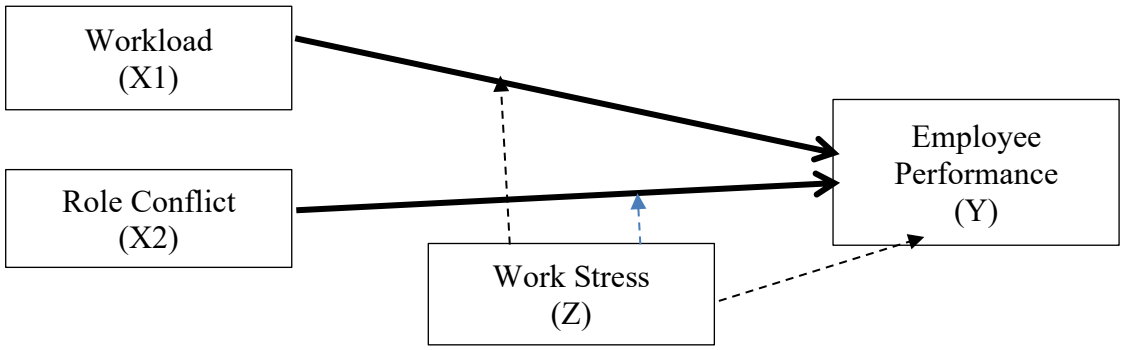

Figure 1. Conceptual Framework

Hypotheses

H1: Workload has a negative and significant effect on Employee Performance at the Representative Office of Bank Indonesia in Pematangsiantar.

H2:Role conflict has a negative and significant effect on Employee Performance at the Representative Office of Bank Indonesia in Pematangsiantar.

H3:Work stress has a negative and significant effect on Employee Performance at the Representative Office of Bank Indonesia in Pematangsiantar.

H4:Workload has a negative and significant effect on employee performance moderated by Work Stress at the Representative Office of Bank Indonesia in Pematangsiantar.

H5:Workload has a negative and significant effect on employee performance moderated by Work Stress at the Representative Office of Bank Indonesia in Pematangsiantar.

Research Method

Research Type

This study uses quantitative research. The approach and type of research used in this study is quantitative. According to Sinambela (2021), quantitative research is a type of research that uses numbers in processing data to produce structured information.

Research Time and Place

This research was conducted in stages, and the research period lasted for 3 months starting in November 2025. The research location was at the Representative Office of Bank Indonesia in Pematang Siantar, Jl. H. Adam Malik No. 1 Pematangsiantar.

Data Sources

This study uses primary data sources to support the research. The data source used in writing this thesis is primary data. According to Sanusi (2017), primary data is data that is first recorded and collected by the researcher.

Data Collection Technique

To collect data from respondents, the researchers used a questionnaire technique where the questionnaire will be distributed to respondents and filled out by them. Questionnaire According to Sanusi (2017), questionnaire data often does not require the presence of the researcher, but is represented by a list of questions that have been carefully prepared in advance.

Research Population

The population of this study were all employees of the Representative Office of Bank Indonesia in Pematangsiantar, totaling 38 employees. According to Sanusi (2017), a population is the entire collection of elements that show certain characteristics that can be used to draw conclusions.

Research Sample

The research sample used by the researchers were all respondents who served as the population, totaling 38 employees. According to Sugiyono (2017), a sample is a part of the number and characteristics possessed by the population. Thus, it can be said that the sample is a part that can represent the entire population.

Data Analysis Techniques

Partial Least Square (PLS)

The data analysis to be conducted to test this research is using the Partial Least Square (PLS) method. The PLS method was chosen based on previous research and it is considered that in this study there are two latent variables with formative indicators. The model used in this study is a causality or influence relationship model. To test the hypotheses proposed in this study, the analysis technique to be used is SEM or Structural Equation Modeling operated through the SMARTPLS program.

Outer Model Test (Measurement Model)

Evaluation of the outer model aims to see the form of the relationship between indicators and their latent variables. The outer test consists of:

1. Standard Loading Factor: An indicator is declared valid if it has a loading factor value above 0.5 for the intended construct. The higher the value obtained, the higher the validity of that indicator.
2. T-Statistics: The criterion point for T-Statistics is 1.96; which is the critical value in the T distribution at a 5% significance level. The higher the T value obtained, the higher the validity of that indicator.
3. AVE (Average Variance Extracted): AVE shows the variance value obtained from each latent variable. The minimum required value is 0.5. The higher the AVE value obtained, the better and indicates the greater information obtained and generated by that latent variable.
4. Composite Reliability and Cronbach's Alpha: Besides AVE, to find the reliability of each variable, Composite Reliability can be used. The threshold value used to assess an acceptable level of reliability is CR 0.7.
5. Cross-Loading: The criterion in Cross-Loading is that each indicator measuring its construct must correlate higher than with other constructs.

Inner Model Test (Structural Model)

1. T-Statistics To test the significance of the hypothesized path, the test tool used is T-Statistics. If using a 5% alpha level, then the critical value for T-Statistics is 1.96. If the value obtained is in the range -1.96 < T-Stat < 1.96, then the test is declared not significant. Conversely, if T- Statistics < -1.96 or > 1.96, then it is declared significant.
2. R-Square: The R-squared (R2) test is a way to measure the level of Goodness of Fit (GOF) of a structural model. The R-squared (R2) value is used to assess how much influence a particular independent latent variable has on the dependent latent variable. An R2 of 0.67 indicates that the model is categorized as good.

SEM Analysis With Moderation Effect

According to Baron & Kenny and Henseler & Fassott, in general, the moderation effect shows the interaction between exogenous variables (predictors) and moderator variables in

influencing endogenous variables (Ghozali, 2021). As is known, Moderated Regression Analysis (MRA) is one way that can be used to test the moderation effect using a program; it is a common method used in multiple linear regression analysis by including a third variable in the form of the multiplication between two independent variables as a moderating variable. This will cause a non-linear relationship so that the measurement error of the MRA estimation coefficient if using latent variables becomes inconsistent and biased. Therefore, the solution that can be done is to use a structural equation model where SEM can correct this measurement error by incorporating the interaction effect into the model (Ghozali, 2021).

Results and Discussion

Outer Model Analysis

Testing the measurement model (outer model) was conducted to assess the relationship between latent variables and their constituent indicators. This testing includes evaluation of convergent validity, discriminant validity, and construct reliability.

Convergent Validity

The convergent validity test is seen through the factor loading value, with a minimum limit of 0.70. In addition, the Average Variance Extracted (AVE) value must be above 0.50 for the construct to be declared valid. Thus, an indicator is considered suitable if it can represent the construct it measures with a loading value exceeding 0.70. The structural model used in this study is shown in the following figure.

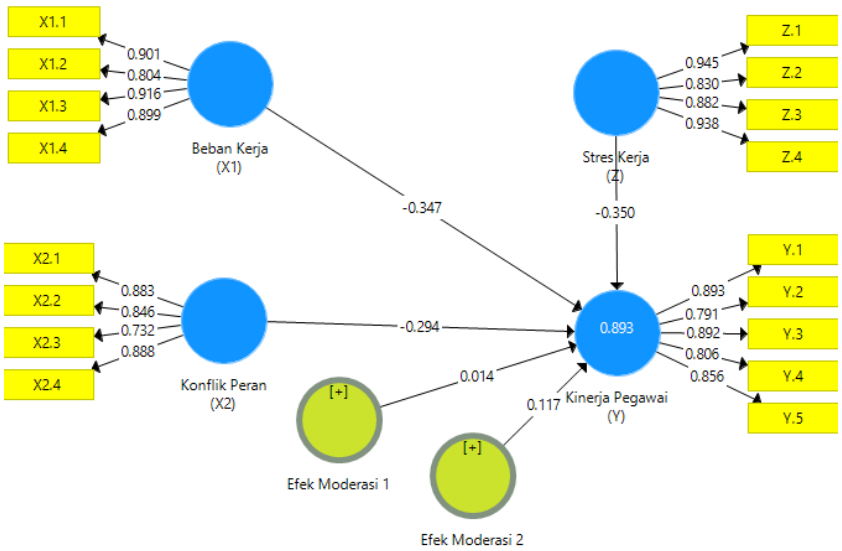

Figure 2. Outer Model

Source : Smart PLS3.3.3.

The Smart PLS output for loading factors provides results in the following table: Outer Loadings. In this study, there are equations and the equations consist of two equations.

Y = b1X1 + b2Z + b3X1Z e1
Y = -0.347 - 0.350 -- 0.014 + e1
Y = b2X2 + b3Z + b4X2Z+ e2
Y = 0.294 + 0.350 -- 0.189 + e2

Table 1. Outer Loadings

	Workload_(X1)	Moderation Effect 1	Moderation Effect 2	Employee Performance _(Y)	Role Conflict_(X2)	Work Stres

						s _(Z)
Workload_(X1) * Work Stress_(Z)		0,777				
Role Conflict_(X2) * Work Stress_(Z)			0,814			
X1.1	0,901					
X1.2	0,804					
X1.3	0,916					
X1.4	0,899					
X2.1					0,883	
X2.2					0,846	
X2.3					0,732	
X2.4					0,888	
Y.1				0,893		
Y.2				0,791		
Y.3				0,892		
Y.4				0,806		
Y.5				0,856		
Z.1						0,945
Z.2						0,830
Z.3						0,882
Z.4						0,938

Source : Smart PLS3.3.3.

Table 1 shows that all indicators for the variables Workload, Role Conflict, Employee Performance, and Work Stress have outer loading values above 0.70, thus meeting the convergent validity criteria. The moderation indicators WorkloadWork Stress and Role ConflictWork Stress also show values of 0.777 and 0.814, respectively, which means they are suitable for use in the research model. Therefore, all indicators are declared valid in measuring their constructs.

Discriminat Validity

The next step of the research is to determine data validity using Discriminant Validity, with the aim of knowing whether the cross-loading value is greater compared to other latent variables to identify indicators that have a strong connection with the concept. The following table presents the cross-loading findings from the validity test, as follows:

Table 2. Discriminant Validity

	Workload_(X1)	Moderation Effect 1	Moderation Effect 2	Employee Performance_(Y)	Role Conflict_(X2)	Work Stress_(Z)
Workload_(X1) * Work Stress_(Z)	0,219	1,000	0,796	-0,106	0,138	0,219

Role Conflict_(X 2) * Work Stress_(Z)	0,132	0,796	1,000	0,004	0,007	0,149
X1.1	0,901	0,230	0,089	-0,835	0,847	0,914
X1.2	0,804	-0,085	-0,160	-0,809	0,670	0,734
X1.3	0,916	0,297	0,266	-0,763	0,729	0,757
X1.4	0,899	0,349	0,298	-0,726	0,697	0,741
X2.1	0,761	0,155	0,074	-0,809	0,883	0,787
X2.2	0,639	0,093	-0,094	-0,682	0,846	0,616
X2.3	0,601	-0,077	-0,135	-0,637	0,732	0,631
X2.4	0,792	0,244	0,124	-0,860	0,888	0,943
Y.1	-0,806	0,046	0,045	0,893	-0,733	-0,758
Y.2	-0,750	-0,316	-0,330	0,791	-0,629	-0,738
Y.3	-0,796	-0,199	-0,061	0,892	-0,859	-0,945
Y.4	-0,650	0,186	0,272	0,806	-0,721	-0,598
Y.5	-0,780	-0,135	0,104	0,856	-0,848	-0,786
Z.1	0,792	0,221	0,122	-0,863	0,901	0,945
Z.2	0,847	0,396	0,352	-0,761	0,751	0,830
Z.3	0,779	-0,111	-0,151	-0,807	0,794	0,882
Z.4	0,821	0,289	0,222	-0,842	0,790	0,938

Source : Smart PLS3.3.3.

Table 2 shows that the correlation values between indicators are higher within the same construct compared to other constructs. This indicates that each indicator is able to distinguish its variable from other variables in the model. Therefore, all research variables—Workload, Role Conflict, Employee Performance, Work Stress, and the moderation effects—meet the discriminant validity criteria.

Composite reliability

In the composite reliability study, each variable is evaluated using its reliability value; if the variable value is greater than 0.60, the research is considered reliable; if between 0.60 and 0.7, then it is not reliable. The table below shows the Cronbach's alpha, composite reliability, and AVE values, which are used to determine whether the research is reliable and valid.

Table 3. Construct Reliability and Validity

	Cronbach's Alpha	**Composite Reliability**	**Average Variance Extracted (AVE)**
Workload_(X1)	**0,903**	**0,933**	**0,776**
Moderation Effect 1	**1,000**	**1,000**	**1,000**
Moderation Effect 2	**1,000**	**1,000**	**1,000**

Employee Performance_(Y)	**0,902**	**0,928**	**0,720**
Role Conflict_(X2)	**0,859**	**0,905**	**0,705**
Work Stress_(Z)	**0,921**	**0,944**	**0,810**

Source : Smart PLS3.3.3.

Table 3 shows that all variables have Cronbach's Alpha and composite reliability values above 0.70 and AVE above 0.50. This indicates that the constructs Workload, Role Conflict, Employee Performance, Work Stress, and both moderation effects have good reliability and convergent validity.

Analysis of Inner Model

Evaluation of the structural model (inner model) was conducted to ensure that the base model is accurate and well-constructed. The examination stages carried out in the primary model assessment can be seen from several markers, namely:

Coefficient of Determination (R2)

Based on data processing that has been carried out using the SmartPLS 3.0 program, the R Square value is obtained as follows:

Table 4. R Square Results

	R Square	**Adjusted R Square**
Employee Performance_(Y)	0,893	0,876

Source : Smart PLS3.3.3.

Table 4 shows the R Square value for Employee Performance is 0.893 with an Adjusted R Square of 0.876. This indicates that 87.6% of the variation in Employee Performance can be explained by the variables Workload, Role Conflict, Work Stress, and the moderation effects in the model, while the remainder is influenced by other factors outside the model.

Hypothesis Testing

After checking the inner model, the next step is to investigate the relationship between the constructs, as suggested in this review. In this review, hypothesis testing is done using T-Statistics and P-values. A hypothesis is accepted if the T-Statistics value is greater than 1.96 and the P-Value < 0.05. The following are the results of the direct effect path coefficients:

Table 5. Hypothesis and Moderation Effect

	Original Sample (O)	**T Statistik (| O/STDEV |)**	**P Values**	**Results**
Workload_(X1) -> Employee Performance_(Y)	-0,347	2,144	**0,016**	**Accepted**
Moderation Effect 1 -> Employee Performance_(Y)	0,014	0,101	**0,460**	**Rejected**
Moderation Effect 2 -> Employee Performance_(Y)	0,117	0,770	**0,221**	**Rejected**
Role Conflict_(X2) -> Employee Performance_(Y)	-0,294	1,797	**0,036**	**Accepted**

Work Stress_(Z) -> Employee Performance_(Y)	-0,350	2,087	**0,019**	**Accepted**

Source : Smart PLS3.3.3.

The explanation of the table above is as follows:

1. Workload (X1) has a negative and significant effect on Employee Performance (Y) (t = 2.144; p = 0.016). This means that the higher the workload perceived by employees, the more their performance tends to decline. This hypothesis is accepted.
2. Workload (X1) on Employee Performance (Y) with the moderation effect of Work Stress has a positive and not significant effect (t = 0.101; p = 0.460). This shows that it does not strengthen or weaken the influence of workload on employee performance. This hypothesis is rejected.
3. Role Conflict (X2) on Employee Performance (Y) is also not significant (t = 0.770; p = 0.221), which means work stress does not moderate the relationship between role conflict and employee performance. This hypothesis is rejected.
4. Role Conflict (X2) has a negative and significant effect on Employee Performance (Y) with the moderation effect of Work Stress (t = 1.797; p = 0.036), meaning the higher the role conflict experienced, the more employee performance tends to decline. This hypothesis is accepted.
5. Work Stress (Z) has a negative and significant effect on Employee Performance (Y) (t = 2.087; p = 0.019), showing that high stress levels impact the decrease in employee performance. This hypothesis is accepted.

Conclusion

1. Workload has a negative and significant effect on Employee Performance at the Representative Office of Bank Indonesia in Pematangsiantar.
2. Work Stress does not moderate the effect of Workload on Employee Performance at the Representative Office of Bank Indonesia in Pematangsiantar.
3. Work Stress does not moderate the effect of Role Conflict on Employee Performance at the Representative Office of Bank Indonesia in Pematangsiantar.
4. Role Conflict has a negative and significant effect on Employee Performance at the Representative Office of Bank Indonesia in Pematangsiantar → accepted.
5. Role Conflict has a negative and significant effect on Employee Performance at the Representative Office of Bank Indonesia in Pematangsiantar → accepted.

Suggestions

1. Management of the Representative Office of Bank Indonesia Pematangsiantar: needs to manage Workload and Role Conflict well, for example through balanced task distribution, time management training, and clear job role socialization, to maintain optimal employee performance.
2. Reducing Work Stress: the organization can provide counseling programs, stress management workshops, or employee well-being improvement activities so that stress levels do not lower performance.
3. Moderation System Evaluation: although work stress was not proven to moderate the relationship between Workload and Role Conflict with performance, it is still recommended to monitor workplace stress factors so they do not become obstacles to overall employee performance.
4. Moderation System Evaluation: although work stress was not proven to moderate the relationship between Workload and Role Conflict with performance, it is still recommended to monitor workplace stress factors so they do not become obstacles to overall employee performance.

References

[1] Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, 51(6), 1173–1182. https://doi.org/10.1037/0022-3514.51.6.1173

[2] Fahmi, I. (2020). *Manajemen Source daya manusia: Teori dan aplikasi*. Bandung: Alfabeta.

[3] Ghozali, I. (2021). *Partial Least Square (PLS): Konsep, teknik dan aplikasi menggunakan program SmartPLS 3.0 untuk penelitian empiris*. Semarang: Badan Penerbit Universitas Diponegoro.

[4] Handayani, R., & Ardiansyah, M. (2019). Pengaruh stres kerja terhadap kinerja karyawan. *Jurnal Ilmu Manajemen*, 7(1), 55–63.

[5] Haryanti, T., & Kusumawati, A. (2018). Beban kerja dan pengaruhnya terhadap stres kerja karyawan. *Jurnal Psikologi Industri dan Organisasi*, 4(2), 23–30.

[6] Henseler, J., & Fassott, G. (2010). Testing moderating effects in PLS path models: An illustration of available procedures. In V. Esposito Vinzi, W. W. Chin, J. Henseler, & H. Wang (Eds.), *Handbook of Partial Least Squares* (pp. 713–735). Berlin, Heidelberg: Springer.

[7] KF Ferine, R Aditia, MF Rahmadana (2021), *An empirical study of leadership, organizational culture, conflict, and work ethic in determining work performance in Indonesia's education authority*, Helyon

[8] MS Menganjur, ED Surya(2025) Analysis of Stress and Work Motivation on Employee Performance with Work Environment as a Mediation Variable at PT PLN Nusantara Power Generation Maintenance Unit (UPHK) Medan, Journal of Research in Social Science and Humanities, 2025

[9] Rachmawati, D., & Lestari, Y. (2020). Konflik peran dan pengaruhnya terhadap stres kerja. *Jurnal Ilmu Administrasi dan Organisasi*, 11(3), 76–85.

[10] Siahaan, S., & Marpaung, A. (2020). Beban kerja dan produktivitas karyawan. *Jurnal Manajemen dan Bisnis*, 10(2), 112–121.

[11] Susanti, L., & Prabowo, H. (2021). Stres kerja dan dampaknya terhadap kinerja pegawai. *Jurnal Psikologi Terapan*, 9(1), 14–22.

[12] Wibowo, A. (2016). *Manajemen kinerja*. Jakarta: Rajawali Pers.

[13] Wijaya, D., & Nugroho, S. (2017). Konflik peran dan pengaruhnya terhadap kinerja. *Jurnal Manajemen dan Kewirausahaan*, 5(2), 89–97.

[14] Y Anwar, KF Ferine, NS Sihombing (2020) *Competency of human resources and customer trust on customer satisfaction and its consequence on customer retention in the hospitality industry north sumatra*, Journal of Environmental Management & Tourism