MODEL FOR IMPROVING EMPLOYEE PERFORMANCE THROUGH WORKLOAD AND WORK-LIFE BALANCE OF EMPLOYEES AT PT PLN (PERSERO) UP3 BALIKPAPAN

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Abstract

Employee performance in a company has an important factor, management must monitor the performance of all employees to ensure the best performance. An increase or decrease in employee performance can be influenced by various factors, including external factors including workload and work-life balance. Providing a workload that meets standards can support the achievement of optimal employee performance, and employee balance at work needs to be improved so that employees have optimal performance. The type of research used in this research is explanatory research. This research took place at PT PLN (Persero) UP3 Balikpapan with a research sample of 130 employees. The data collection technique uses a questionnaire. In this research, data analysis uses the SEM-PLS method with SmartPLS (Partial Least Squares) software. Research results 1) Workload has a negative and significant effect on employee performance. Based on the p-value of 0.004 < 0.05 plus the T-Statistics value (2.857) > 1.96, the original sample value is 0.258 (negative). 2) The workload has a negative and significant effect on work-life balance. Based on the P-Values value of 0.002 < 0.05 and the t-statistics value (3.226) > 1.96), the original sample value is 0.327 (negative). 3) Work-life balance has a positive and significant effect on employee performance. Based on the P-value of 0.000 <0.05 and the T-Statistics value (4.695)>1.96, the original sample value is 0.353 (positive). 4) Work-life balance is able to mediate the influence of workload on employee performance based on the P-values specific indirect effect value of 0.023 < 0.05 and t-statistic value (2.177) > 1.96).

Keywords: Model for Improving Employee Performance, Workload and Work-Life Balance, Employees of PT PLN (Persero) UP3 Balikpapan

INTRODUCTION

Human resources (HR) are the main assets of a company, occupying a very vital position. High-quality HR supports employee performance and becomes one of the main determinants of company progress (Prastiwi, Ningsih & Putrini, 2022). Employee performance is a measure that can be used to establish a comparison between the results of task implementation, the responsibilities assigned by the organization within a certain period, and can relatively be used to measure work achievement or organizational performance (Baihaqi & Paulus, 2020). Therefore, management must monitor the performance of all employees (Dahkoul, 2018) to ensure they deliver their best performance in order to support the achievement of company goals.

Workloads that are either too heavy or too light will affect work inefficiency. A workload that is too light for employees means the company cannot optimize existing resources and causes cost inefficiency. Assigning an appropriate (ideal) workload can support the achievement of optimal employee performance to enhance and improve the accomplishment of organizational goals (Luthan, 2023).

The performance gap phenomenon is one of the factors underlying this research. PT. PLN (Persero) is one of the State-Owned Enterprises (BUMN) oriented toward public service and entrusted with managing energy needs, particularly in the electricity sector. Everything related to electricity is regulated in Law of the Republic of Indonesia Number 30 of 2009 concerning Electricity (hereinafter referred to as the Electricity Law), which is complemented by several Government Regulations and Ministerial Regulations as references for regulating matters related to electricity in Indonesia.

In 2022, PT PLN (Persero) UP3 Balikpapan recorded 53,997 new customers who installed new electricity meters, equivalent to 19.3%. In 2023, there were 68,781 new installations, an increase of 20.6% compared to 2022. In 2024, the number decreased to 59,517 new installations, a decline of 14% compared to 2023. These data indicate that the number of new customers at PT PLN (Persero) UP3 Balikpapan declined from 2023 to 2024. The decrease in new customers may serve as an indication of a decline in employee performance.

PT PLN (Persero) UP3 Balikpapan must be able to predict and adapt to fluctuating environmental changes that could affect its existence. The demand for satisfactory public services has placed the performance of PT PLN (Persero) UP3 Balikpapan under public scrutiny. Therefore, PT PLN (Persero) UP3 Balikpapan must provide public services that are fast, accurate, effective, and efficient to the community as service recipients. However, on the other hand, researchers found that customer disturbances and complaints at PT PLN (Persero) UP3 Balikpapan still frequently occur.

In October 2024, the highest number of disturbances and customer complaints was recorded, reaching 6,924 disturbances and 842 complaints. The increasing number of disturbances and complaints adds to employees' workloads. Frequently, the large number of issues requires employees to complete tasks beyond regular working hours (overtime). This condition results in employees experiencing heavier workloads, which can disrupt their work-life balance.

In October 2024, the highest overtime intensity was also recorded, with an average of 35 hours. The construction and network divisions, as well as unit managers, were the

sections with the highest overtime intensity, averaging 64 hours. This indicates that employees sacrificed their personal time to complete tasks, potentially disrupting their work-life balance and raising concerns about its impact on performance.

LITERATURE REVIEW

Employee Performance

Employee performance is defined as the work results achieved by an employee in carrying out their duties in accordance with the responsibilities assigned to them (Syafrina, 2017). Employee performance can also be described as a form of individual productivity within an organization, as well as a representation of the alignment between work and the employee's abilities.

Workload

Workload is the number of processes or activities that must be completed by a worker within a certain period, consisting of physical workload and psychological workload (Widyawati, Saroh & Krisdianto, 2023). Workload can also be associated with the body's capacity to handle work.

Work-Life Balance

Work-life balance is defined as an effort made by individuals to balance two or more roles they undertake (Fisher, Bulger & Smith, 2009). According to Greenhaus, Collin & Shaw (2003), work-life balance refers to the extent to which an individual is equally engaged in work and family, and equally satisfied with both work and family roles.

RESEARCH METHOD

Type of Research

Based on the research objectives that have been set, this study is classified as explanatory research, which aims to demonstrate causal relationships and influences between two or more variables under study (Umar, 2019). The purpose of explanatory research is to test hypotheses and examine the influence of independent variables on dependent variables, specifically the model for improving employee performance through workload and work-life balance.

Time and Place of Research

This research was conducted in May 2025 at PT PLN (Persero) UP3 Balikpapan.

Population

The population is the entirety of all objects or individuals with specific, clear, and complete characteristics. In other words, the population is the collection of all measurements, objects, or individuals being studied (Sugiyono, 2016). The population in this study consists of all employees of PT PLN (Persero) UP3 Balikpapan in 2025, totaling 130 people.

Sample

The sample is a subset of the population, serving as the primary unit from which data are collected. Sampling is the process of selecting cases to represent the entire population (Sugiyono, 2016). The sampling technique used in this research is total sampling, also known as the census method. In other words, the number of the population equals the sample, amounting to 130 employees of PT PLN (Persero) UP3 Balikpapan in 2025.

RESULT AND DISCUSSION

Partial Least Squares Structural Equation Modeling (PLS-SEM) Analysis

Outer Model Testing

The outer model testing is used to describe the relationship between latent variables and their indicators. To ensure the accuracy of this model, two types of testing are required: validity and reliability tests.

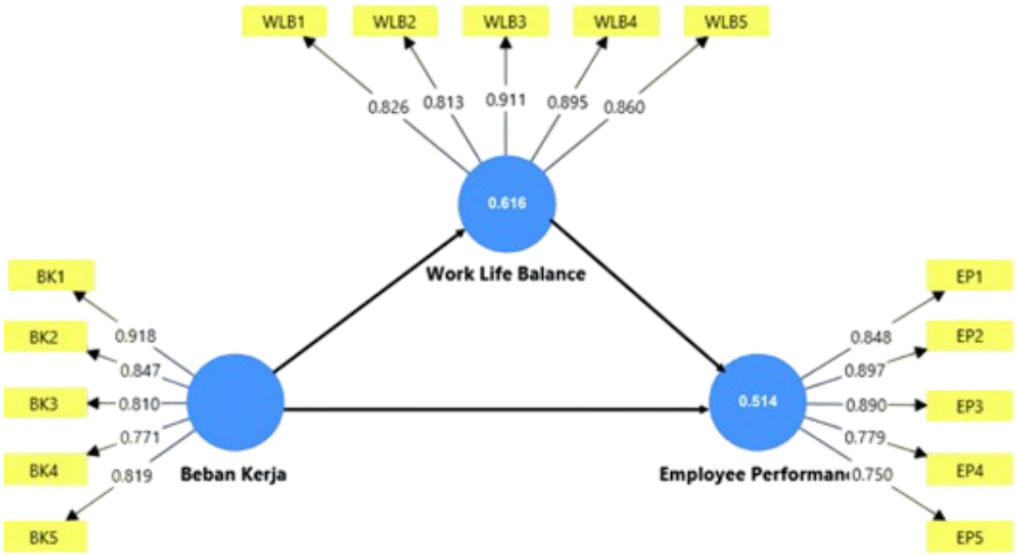

Figure 1.
Measurement Model (Outer Model)

Validity Testing

Convergent Validity

Convergent validity is determined using the outer loading values. An indicator is considered valid if its outer loading value is 0.7 or higher, indicating that the indicator has a strong correlation with the construct it measures and contributes significantly to explaining the construct. Conversely, if the outer loading value is below 0.7, the indicator is considered invalid, suggesting a weak correlation with its construct and may need to be removed.

Table 1.
Outer Loading Values

Variable	Indicator	Outer Loading	Description
Workload	BK1	0.918	Valid
	BK2	0.847	Valid
	BK3	0.810	Valid
	BK4	0.771	Valid
	BK5	0.819	Valid
Work-life Balance	WLB1	0.826	Valid
	WLB2	0.813	Valid
	WLB3	0.911	Valid
	WLB4	0.895	Valid
	WLB5	0.860	Valid

Variable	Indicator	Outer Loading	Description
Employee Performance	EP1	0.848	Valid
	EP2	0.897	Valid
	EP3	0.890	Valid
	EP4	0.779	Valid
	EP5	0.750	Valid

The results of the analysis in Table 1 show that all indicators of the workload, work-life balance, and employee performance variables have outer loading values greater than 0.7. This indicates that all indicators have good convergent validity in measuring the respective variables.

Discriminant Validity

Discriminant validity refers to the extent to which a construct is truly distinct from other constructs. Several methods are used to evaluate discriminant validity, including cross-loading, AVE (Average Variance Extracted), and the Fornell-Larcker Criterion.

Table 2.
Cross Loading Values

Indicator	Variable BK	EP	WLB	Decision
BK1	0.918	-0.381	-0.135	BK1 (BK > EP, WLB = valid)
BK2	0.847	-0.182	-0.120	BK2 (BK > EP, WLB = valid)
BK2	0.810	-0.224	-0.043	BK3 (BK > EP, WLB = valid)
BK3	0.771	-0.128	-0.020	BK4 (BK > EP, WLB = valid)
BK5	0.819	-0.219	-0.153	BK5 (BK > EP, WLB = valid)
EP1	-0.257	0.848	0.367	EP1 (EP > BK, WLB = valid)
EP2	-0.240	0.897	0.424	EP2 (EP > BK, WLB = valid)
EP3	-0.345	0.890	0.259	EP3 (EP > BK, WLB = valid)
EP4	-0.161	0.779	0.303	EP4 (EP > BK, WLB = valid)
EP5	-0.256	0.750	0.224	EP5 (EP > BK, WLB = valid)
WLB1	-0.018	0.203	0.826	WLB1 (WLB > BK, EP = valid)
WLB2	-0.102	0.267	0.813	WLB2 (WLB > BK, EP = valid)
WLB3	-0.176	0.459	0.911	WLB3 (WLB > BK, EP = valid)
WLB4	-0.093	0.354	0.895	WLB4 (WLB > BK, EP = valid)
WLB5	-0.090	0.262	0.860	WLB5 (WLB > BK, EP = valid)

Based on Table 2, it can be seen that construct indicators have higher correlations with their respective constructs compared to other indicators. In other words, all discriminant

validity tests for the indicators are valid. In addition to cross-loading values, discriminant validity can also be assessed using the Fornell-Larcker Criterion.

Table 3.
Fornell-Larcker Criterion

Variable	Workload	Employee Performance	Work-life Balance
Workload	0.835		
Employee Performance	-0.303	0.835	
Work-life Balance	-0.127	0.386	0.862

Based on Table 3, the loading values of each item indicator on its construct are greater than the cross-loading values. Thus, it can be concluded that all constructs or latent variables have good discriminant validity, where indicators load better on their respective constructs than on other constructs.

Table 4.
Average Variance Extracted (AVE)

No	Variable	AVE	Description
1	Workload	0.696	Valid
2	Employee Performance	0.697	Valid
3	Work-life Balance	0.743	Valid

From Table 4, it is shown that all constructs (workload, employee performance, and work-life balance) have AVE values above the threshold of 0.5. This is a positive indication that the measurement model has good convergent validity.

Reliability Testing

Reliability testing in PLS uses Composite Reliability (CR) and Cronbach's Alpha (CA). Composite reliability measures the internal consistency of the indicators of a construct. A CR value > 0.7 indicates that the indicators have high internal consistency, meaning they consistently measure the same construct. Cronbach's Alpha also measures internal consistency reliability. A CA value > 0.9 indicates very high reliability, between 0.8–0.9 indicates high reliability, and between 0.7–0.8 is generally considered acceptable as the minimum threshold in research.

Table 5.
Composite Reliability and Cronbach's Alpha

Variable	**Composite Reliability**	**Cronbach Alpha**	**Description**
Workload	0.988	0.894	Reliabel
Employee Performance	0.908	0.891	Reliabel
Work-life Balance	0.981	0.916	Reliabel

The reliability analysis results show that this research model has very good internal consistency. This is evident from the Composite Reliability (CR) and Cronbach's Alpha (CA) values. All latent variables in the model have CR values > 0.7, indicating high reliability. In other words, the indicators consistently represent their constructs. The CA values for workload (0.894), employee performance (0.891), and work-life balance (0.916) show high reliability within the range of 0.8–0.9, meaning these indicators are consistent in measuring their constructs.

Inner Model Testing

After evaluating the outer model and confirming that each construct meets the validity (convergent and discriminant) and reliability (Composite Reliability and Cronbach's Alpha) criteria, the next step is to evaluate the structural model. This includes model fit, R^2, F^2, and Q^2 testing.

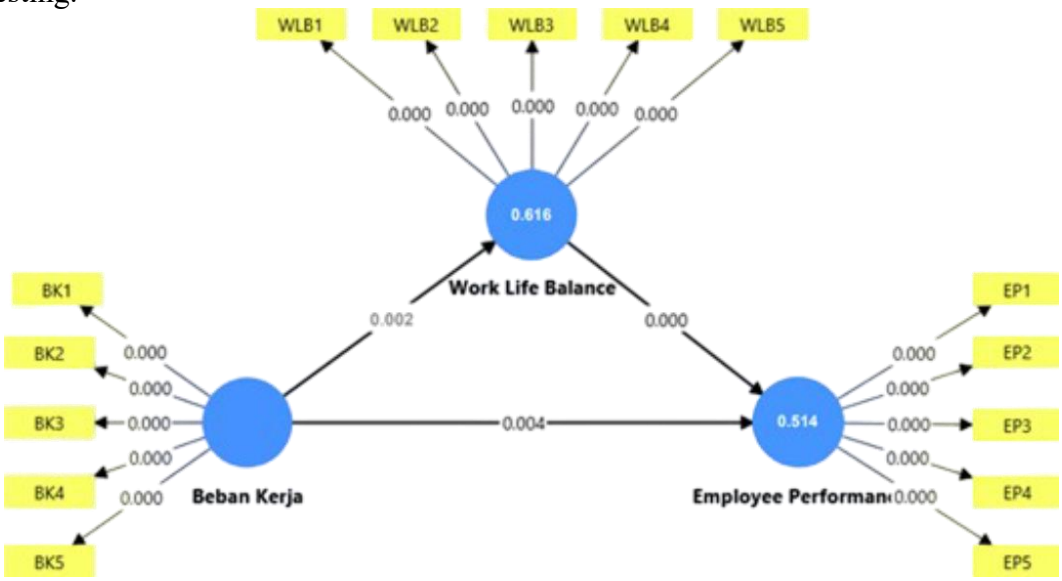

Figure 2.
Full Structural Model (Inner Model)

Model Fit Test

In this study, the model fit evaluation uses SRMR, d_ULS, d_G, Chi-square, and NFI, with the results as follows:

Table 6.
Goodness of Fit Results

No	Model Structural	Cut-Off Value	Estimated	Description
1	SRMR	< 0,10	0.077	Fit
2	d_ULS	> 0,05	0.715	Fit
3	d_G	> 0,05	0.292	Fit
4	Chi-Square	$>X^2_{tabel}$ ($df = 127$; $X^2_{tabel} = 101{,}971$)	169.951	Fit
5	NFI	Approaching 1	0.837	Fit

The analysis results show that the tested model demonstrates an acceptable fit. This indicates that the model has a good level of fit with the data, meaning the proposed model accurately represents the relationships among variables.

R-Square

The structural model is evaluated using R-square for dependent constructs. R^2 values are used to assess whether endogenous variables are substantively influenced by exogenous variables.

Table 7.
R-Square Values

No	Variable	R-Squares	Adjusted R-Square
1	Employee Performance	0.514	0,498
2	Work-life Balance	0.616	0.606

Based on Table 7, the Adjusted R-square for employee performance is 0.498, meaning that 49.8% of the variance in employee performance is explained by workload and work-life balance, while the remaining 50.2% is influenced by other variables not studied. The Adjusted R-square for work-life balance is 0.606, meaning that 60.6% of its variance is explained by workload, while the remaining 39.4% is explained by other variables not studied.

F-Square

F^2 values are categorized into three classifications: 0.02 (small/weak), 0.15 (medium/moderate), and 0.35 (large/strong) (Setiaman, 2023).

Table 8.
F-Square Values

Variable Relationship	f-Squares	Substantive Influence
Workload -> Employee Performance	0.183	Enough
Workload -> Work-life Balance	0.416	Large
Work-life Balance -> Employee Performance	0.356	Large

Based on the table above, a strong substantive effect is seen in the relationship between workload and work-life balance (0.416) and between work-life balance and employee performance (0.356). A moderate effect is observed in the relationship between workload and employee performance (0.183).

Q-Square

Q-square (Q^2) measures how well observed values are generated by the model along with its parameter estimates. A Q^2 value greater than 0 indicates that the model has predictive relevance, while Q^2 less than 0 indicates a lack of predictive relevance. The Q^2 value can be calculated as follows:

$$Q^2 = 1 – (1-R_1^2)\ (1-R_2^2)……..(1-R_p^2)$$
$$= 1 – (1 – 0{,}514)\ (1 – 0{,}616)$$
$$= 1 – 0{,}187$$

= 0,813

The calculation above shows that $Q^2 = 0.813 > 0.05$, indicating that the model is good and capable of explaining the studied variables.

Hypothesis Testing

Hypothesis testing in this context aims to validate or refute the researcher's initial assumptions about the relationships among variables. This is a crucial step in quantitative research to ensure that results are not due to chance but reflect actual relationships within the studied population.

Direct Effect Hypothesis Testing

To examine the structural relationships between latent variables, hypothesis testing is conducted on path coefficients by comparing p-values with alpha (0.05) or t-statistics (>1.96). P-values and t-statistics are obtained from SmartPLS output using the bootstrapping method.

Table 9.
Path Coefficients

	Hyphotesis	Original Sample (O)	T Statistics	P values	Decision
H_1	Workload -> Work-life Balance	-0.327	3.226	0.002	H_1 Accepted
H_2	Workload -> Employee Performance	-0.258	2.857	0.004	H_2 Accepted
H_3	Work-life Balance -> Employee Performance	0.353	4.695	0.000	H_3 Accepted

Based on Table 9, the following can be explained from the three proposed hypotheses:

a. Effect of Workload on Employee Performance

The hypothesis test shows that the p-value of the effect of workload on employee performance is 0.004 < 0.05, with a t-statistic of 2.857 > 1.96. The original sample value is –0.258 (negative). These results support the first hypothesis, meaning workload has a negative and significant effect on employee performance (H1 accepted).

b. Effect of Workload on Work-Life Balance

The hypothesis test shows that the p-value of the effect of workload on work-life balance is 0.002 < 0.05, with a t-statistic of 3.226 > 1.96. The original sample value is –0.327 (negative). These results support the second hypothesis, meaning workload has a negative and significant effect on work-life balance (H2 accepted).

c. Effect of Work-Life Balance on Employee Performance

The hypothesis test shows that the p-value of the effect of work-life balance on employee performance is 0.000 < 0.05, with a t-statistic of 4.695 > 1.96. The original sample value is 0.353 (positive). These results support the third hypothesis, meaning work-life balance has a positive and significant effect on employee performance (H3 accepted).

Indirect Effect Testing (Mediating Variable Effect)

To assess the mediating effect of work-life balance, the specific indirect effect results are examined.

Table 10.
Specific Indirect Effects

	Hyphotesis	Original Sample (O)	T Statistics	P values	Decision
H_4	Workload -> Work-life Balance -> Employee Performance	0.245	2.177	0.023	H_4 Accepted

Based on the data in the table, the p-value of the specific indirect effect is 0.023 < 0.05, with a t-statistic of 2.177 > 1.96. These results support the fourth hypothesis, meaning work-life balance mediates the effect of workload on employee performance (H4 accepted).

The Effect of Workload on Employee Performance

The results of hypothesis test 1 found that workload has a negative and significant effect on employee performance. This indicates that the heavier the workload, the lower the level of employee performance. Conversely, a lighter workload will increase employee performance. This finding implies that excessive workload perceived by employees, such as demanding targets, high levels of difficulty and risk, requirements to work overtime, extra tasks, and frustrating job burdens, will lead to a decline in employee performance. This is reflected in employees' inability to consistently meet work quality standards, job quantity targets, planned schedules, and compliance with existing SOPs and mechanisms, as well as the inability to complete tasks independently without relying on coworkers' assistance.

The Effect of Workload on Work-Life Balance

The results of hypothesis test 2 found that workload has a negative and significant effect on work-life balance. This indicates that the heavier the workload, the lower the level of work-life balance. Conversely, the lighter the workload, the better the work-life balance. This finding is consistent with previous studies conducted by Sari & Sahrah (2023); Halim & Heryjanto (2021); Fuadiputra & Novianti (2020); Kartika & Riana (2024), which state that workload has a negative and significant effect on work-life balance. This study can be analyzed to mean that the higher the workload assigned to employees, the lower their work-life balance, and vice versa.

The Effect of Work-Life Balance on Employee Performance

Work-life balance has a positive and significant effect on employee performance. This indicates that the higher the work-life balance, the higher the employee performance. Conversely, the lower the work-life balance, the lower the employee performance. This finding is consistent with previous studies conducted by Badrianto et al. (2021); Arifin et al. (2022); Asari (2022); Putri & Frianti (2023); Syaqiq, Nuromavita & Hakim (2024), which state that work-life balance has a positive and significant effect on employee performance.

The Effect of Workload on Employee Performance through Work-Life Balance

Work-life balance is able to mediate the effect of workload on employee performance. The results of this study indicate that work-life balance plays a mediating role in the relationship between workload and employee performance. This finding confirms that work-life balance is a strategic and significant component in improving employee performance within organizations. When work-life balance mediates the negative effect of workload on employee performance, it highlights the importance for companies to actively create working conditions that allow employees to maintain a balance between professional and personal

life. The gradual application of this balance is believed to contribute to achieving more optimal, superior, and productive employee performance.

This finding is consistent with previous studies conducted by Utari & Perdhana (2024); Syihabudhin et al. (2022); Putri & Primadineska (2023); Nurwahyuni (2019), which state that work-life balance mediates the relationship between workload and employee performance. The results can be analyzed to mean that the negative effect of workload on performance can be minimized through the presence of work-life balance. Even when workloads are high, if work-life balance is maintained, performance can still be sustained.

CONCLUSION

Based on several analyses and discussions, the following conclusions can be drawn:

1. Workload has a negative and significant effect on employee performance: the heavier the workload, the lower the employee performance.
2. Workload has a negative and significant effect on work-life balance: the heavier the workload, the lower the employees' work-life balance.
3. Work-life balance has a positive and significant effect on employee performance: the better the employees' work-life balance, the higher the employee performance.
4. Work-life balance is able to mediate the effect of workload on employee performance. Since work-life balance mediates between workload and employee performance, companies should gradually improve it by creating an environment that allows employees to balance work and personal life. This balance will lead to superior and more productive performance.
5. Work-life balance is the most dominant variable influencing employee performance.
6. The direct effect of workload on employee performance is greater than the indirect effect through work-life balance.

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