

#### How to Cite

Fitriandi, T., Widiyanti, M., Hadjri, M. I., & Yusuf, M. (2024). The influence of work motivation on employee performance after mutation at PT PLN (PERSERO) UIK SBS. *International Journal of Social Sciences*, 7(3), 54-61.  
<https://doi.org/10.21744/ijss.v7n3.2295>

# The Influence of Work Motivation on Employee Performance after Mutation at PT PLN (PERSERO) UIK SBS

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**Abstract---** This study aims to analyze the effect of work motivation on employee performance after mutation at PT PLN (Persero) South Sumatra Generating Unit (UIK SBS). The method used in this research is a quantitative method with a causality approach. The data used is primary data obtained through a questionnaire with a Likert scale distributed to all employees of PT PLN (Persero) UIK SBS. Data analysis was carried out using multiple linear regression to determine the effect of the independent variable (work motivation) on the dependent variable (employee performance). The results showed that work motivation has a positive and significant influence on employee performance. This finding indicates that increasing work motivation can improve employee performance, so companies are expected to formulate effective strategies to increase work motivation to achieve optimal performance.

**Keywords---** effective strategies, employee performance, management, work motivation.

## Introduction

In organizational dynamics, employee mutation is one of the policies often applied by companies to meet workforce needs, improve employee competence, and maintain operational continuity. PT PLN (Persero) as one of the largest State-Owned Enterprises (SOEs) in Indonesia, often mutates employees both horizontally and vertically. This mutation is expected to have a positive impact, both for the employees themselves and for the company (Tampubolon & Sibuea, 2023). However, in reality, employee mutations often pose various challenges, both in terms of adaptation, adjustment to new jobs, and the psychological impact experienced by employees (Saifuddin & Kamaruddin, 2022).

Work motivation is a key factor in determining how employees face and respond to changes that occur due to mutations (Afianto & Wuisan, 2023). High work motivation can help employees to adapt more quickly, improve performance, and achieve company goals. Conversely, low work motivation can lead to decreased performance, dissatisfaction, and even increased turnover rates (Syarief et al., 2024).

Employee performance achievement is strongly influenced by the quality of human resources available. Human resources are the main focus in the implementation of government related to readiness, amount of education, and professionalism (Marsita et al., 2024). Therefore, human resource management is the key to achieving goals, so to produce quality human resources it is necessary to adjust employee competencies to the job description given and provide work motivation to employees (Wahyunto et al., 2023).

Employee Performance Objectives consist of a series of activities that must be carried out by employees to achieve PLN's performance targets through the fulfilment of cascading KPIs. Cascading KPIs is a decrease in KPIs carried out in stages from a higher level of organisation/position to a lower or equivalent level, but functionally complementary to each other. After one year of organisational restructuring at PT PLN (Persero) UIK SBS, a sampling assessment was conducted on 32 employees to study changes in the achievement of pre- and post-movement talent criteria due to organisational restructuring, with the following results:

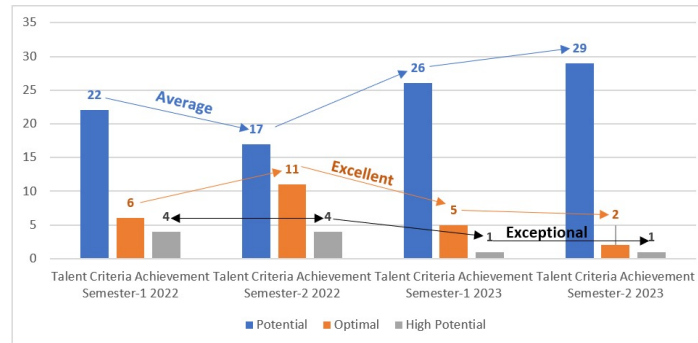


Figure 1. Achievement of Talent Criteria Semester 1 and 2 Year 2022-2023 Employees of PT PLN (Persero) UIK SBS

Source: Data processed by the author, 2024

Based on the data in Figure 1, it shows the achievement of the talent criteria of PT PLN (Persero) UIK SBS employees in semesters 1 and 2 of 2022-2023. In the potential criteria, the highest value occurs in semester 2 of 2023, while the lowest value occurs in semester 2 of 2022. In the optimal criteria, shows the highest value in semester 2 of 2022, while the lowest value occurs in semester 2 of 2023. In the very potential criteria, the highest value occurred in semesters 1 and 2 of 2022, while the lowest value occurred in semesters 1 and 2 of 2023. It can be said that there is an increase. Work motivation is the basis for an organization to develop both government agencies and private agencies, none other than because of the desire to achieve goals and efforts carried out jointly, systematically, and planned (Nadzilah & Adji, 2023). Work motivation can be said to be a driver or encouragement that can trigger a sense of enthusiasm and also be able to change individual behavior for the better. Work motivation includes efforts to encourage or encourage employees to work (Frimayasa et al., 2021). According to McClelland, (1961), motivation is a potential energy reserve that a person has to be used and released which depends on the strength of the drive and the opportunities that exist where this energy will be utilised by employees due to the strength of motives and basic needs, expectations and incentive values (Adinegara et al., 2023).

This study aims to analyze the effect of work motivation on employee performance after mutation at PT PLN (Persero). By understanding the factors that influence work motivation and its relationship with performance, it is hoped that companies can formulate effective strategies to improve employee performance after mutation (Lam & Gurland, 2008; Stoeber et al., 2013).

## Method

This research was conducted at the office of PT PLN (Persero) South Sumatra Generating Unit, located at Jalan Demang Lebar Daun No. 375, Demang Lebar Daun, Ilir Barat I District, Palembang City, South Sumatra 30151. The focus of this research is limited to variables related to human resource management, specifically the competence and work motivation of PT PLN (Persero) UIK SBS employees, which directly affect employee performance (Eliyana & Ma'arif, 2019; De Ruyter et al., 2001).

This research is quantitative research that is causal in nature. This study uses qualitative data in the form of questionnaire statements which are quantified using a Likert scale (Sugiyono, 2013). The data source used in this

research is primary data. The population in this study were all employees who worked at PT PLN (Persero) UIK SBS in 2023 as many as 149 employees. Determination of the number of samples used by the author in this study is by the census method (saturated sampling) which is a sampling technique when all members of the population are used as samples (Sanusi, 2011).

## Result and Discussion

### *Normality test results*

The normality test is carried out to determine whether the sample data comes from a normally distributed population or not. Data that is suitable for use in this study is normally distributed data, in this study researchers used a normality test. The following are the results of the normality test can be seen from the Figure.

Based on the normal P-P Plot of the Regression test, it can be explained that the diagonal line in this graph describes the ideal state of the data that follows the normal distribution. Because the points around the line are the state of the data being tested. The picture above shows that most of the points are very close to the line or even stick to the line, so it can be concluded that the data obtained follows a normal distribution or normally distributed data. Another step that can be taken to perform a normality test is to use the Kolmogorov-Smirnov Test. The basis for making the Kolmogorov-Smirnov Test decision is as follows:

- 1) If the significance value (Sig.) is greater than 0.05 then the research data is normally distributed.
- 2) If the significance value (Sig.) is smaller than 0.05 then the research data is not normally distributed.

Table 1  
Kolmogorov-Smirnov test

One-Sample Kolmogorov-Smirnov Test		
		Unstandardized Residual
N		149
Normal Parameters	Mean	.0000000
	Std. Deviation	.58885771
Most Extreme Difference	Absolute	.102
	Positive	.062
	Negative	-.102
Kolmogorov-Smirnov Z		.102
Asymp. Sig. (2-tailed)		.137

Data Source: Processed from Questionnaire, 2024

Based on the normality test results in the table, show that the data is normally distributed. This is indicated by the Kolmogorov-Smirnov test which shows results that have a significance level of 0.137 which is above 0.05.

### *Multicollinearity test results*

The multicollinearity test aims to test whether the regression model found a correlation between independent variables. To find out whether multicollinearity occurs, it can be seen from the VIF and *tolerance* values contained in each variable as in the table below:

Table 2  
Multicollinearity test results table

Test Of Multikolinierity	VIF	Cutt Off	Description
Competence	1,390	< 10	No Multicollinearity
Work Motivation	1,428	< 10	No Multicollinearity

Data Source: Processed from Questionnaire, 2024

Based on the results from the table, shows that there is no multicollinearity between the independent variables because it shows the VIF value is less than 10. Thus in this model, there is no multicollinearity problem.

#### *Heteroscedasticity test results*

In this study, researchers in testing whether heteroscedasticity occurs or not are using the Glejser test. In this heteroscedasticity test with the Glejser test, if the Sig. (significance) of all explanatory variables is not statistically significant ( $p > 0.05$ ), it can be said that the regression equation model does not experience heteroscedasticity.

Table 3  
Heteroscedasticity test results

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	.669	.128		5.214	.000
Competence (X.1)	.074	.038	.182	3.950	.453
Work Motivation (X.2)	-.134	.037	-.337	-3.602	.210

Data Source: Processed from Questionnaire, 2024

Based on the results of the heteroscedasticity test in the table, it can be seen that the Sig. value of each variable is 0.453 for the competency variable and 0.210 for the work motivation variable. From these results, it can be concluded that the regression equation model does not experience heteroscedasticity. This is because the value of each variable is not significant, or the Sig. value is greater than 0.05.

#### *Multiple Linear Regression analysis results*

Multiple linear regression analysis was conducted to determine the effect of competency variables (X1) and work motivation (X2) on employee performance (Y). Based on the test results obtained as follows:

Table 4  
Multiple Linear Regression analysis results

Model	Coefficients		
	Unstandardized Coefficients	Std. Error	Standardized Coefficients
1	B		Beta
Constant	.789	.208	
Work Motivation (X.2)	.456	.060	.470

Data Source: Processed from Questionnaire, 2024

Based on the table, the results of multiple linear regression analysis can be expressed by the following equation + e

- 1) The constant value shows a positive value with a value of 0.789. This shows that the level of employee performance is considered without the influence of competence and work motivation, the magnitude of the employee performance variable is 0.789 If the work motivation variable (X1) is 0 (zero).
- 2) The regression coefficient value of the work motivation variable is 0.456 with an account value of 7.579, which means that if the work motivation is given by 1 unit, it will further improve employee performance at PT PLN (Persero) UIK SBS by 0.456. With this value and the regression coefficient value of 0.456, this shows that there is a positive influence between work motivation on employee performance at PT PLN (Persero) UIK SBS.

### Results of Correlation Coefficient ( $r$ ) and Coefficient of Determination ( $R^2$ )

Based on the research that has been done, the results of the correlation coefficient ( $r$ ) and the coefficient of determination obtained ( $R^2$ ) in this study can be seen in the table as follows:

Table 5  
Test Results of Correlation Coefficient ( $r$ ) and Coefficient of Determination ( $R^2$ )  
**Model Summary<sup>b</sup>**

Model	$r$	R Square	Adjusted R Square	Std. Error of the Estimate
1	.773	.597	.591	.592877

Data Source: Processed from Questionnaire, 2024

Based on table above, it can be seen that the correlation coefficient ( $r$ ) between the independent variable and the dependent variable is 0.773 or 77.3%. This shows that the correlation or relationship between the independent variable and the dependent variable has a strong level of relationship (included in the range of 0.60 - 0.79) which can be seen in the table above. The coefficient of determination ( $R^2$ ) of 0.597 indicates that the independent variables, namely competence (X1) and work motivation (X2) can explain the dependent variable, namely employee performance (Y) by 59.7%, while the remaining 40.3% is explained by other factors that are not included in this study.

### F-Test results

The F test in this study was conducted to identify whether the regression equation model was feasible or not feasible to use to explain the effect of the independent variables on the dependent variable. Based on the test results and data processing, the test results are as follows:

Table 6  
F-Test results

ANNOVA <sup>b</sup>						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	75.967	2	37.983	108.060	.000
	Residual	51.320	146	.352		
	Total	127.286	148			

Data Source: Processed from Questionnaire, 2024

Based on the results in the table, a significance value of 0.000 is obtained because the significance value of 0.000 < 0.05, it can be said that the linear regression model obtained is feasible to be used to explain the effect of competence and work motivation on employee performance at PT PLN (Persero) UIK SBS. The t-test aims to determine how far the influence of the independent variables individually on the dependent variable. This study with a significance of 5% or  $\alpha = 0.05$ . The t-test results can be seen in the table as follows:

Table 7  
t- test results

<b>Coefficients</b>					
Model	Variables	B	$t_{\text{tabel}}$	$t_{\text{hitung}}$	Sig.
1	Work Motivation	.456	1.976	7.579	.000

Data Source: Processed from Questionnaire, 2024

Based on the table, the value of the *degree of freedom* ( $df$ ) =  $n-k = 149-3 = 146$  and 0.05, and the  $t$  table value for this research data is 1.976. The analysis results can be explained as follows:

- 1) The calculated  $t$  value of the competency variable ( $X_1$ ) is 6.672 and the significance value is 0.000, the calculated  $t$  value >  $t$  table, namely ( $6.672 > 1.976$ ) or the value (Sig.)  $0.000 < 0.05$ . This means that competence has a significant effect on employee performance at PT PLN (Persero) UIK SBS. This proves that the first hypothesis of competence has a positive and significant effect can be accepted.
- 2) The calculated  $t$  value of the work motivation variable ( $X_2$ ) is 7.579 and the significance value is 0.000, so the calculated  $t$  value >  $t$  table, namely ( $7.579 > 1.976$ ) or the value (Sig.)  $0.000 < 0.05$ . This means that work motivation has a significant effect on employee performance at PT PLN (Persero) UIK SBS. This proves that the second hypothesis of work motivation has a positive and significant effect can be accepted.

#### *The effect of work motivation on employee performance at PT PLN (Persero) UIK SBS*

The analysis results obtained in this study indicate that work motivation has a positive and significant effect on employee performance so the second hypothesis can be accepted (Dwivedula & Bredillet, 2010; Lundberg et al., 2009). Based on respondents' responses to the indicator I have responsibility for making decisions, it shows the lowest value. This shows that employees at PT PLN (Persero) UIK SBS have not been allowed to make decisions. Where this decision-making can only be done in certain positions (Eraku et al., 2023). Employees who are still considered junior cannot get the opportunity to make decisions. The role of superiors has also not been able to provide opportunities for junior employees to be able to provide criticism, suggestions and input (Perkasa et al., 2023).

The analysis results obtained in this study show that work motivation has a positive and significant effect on employee performance so the second hypothesis can be accepted (Kuzu & Özilhan, 2014; Sadikoglu & Zehir, 2010). According to McClelland (1961), motivation is a potential energy reserve that a person has to use release which depends on the strength of the drive and the opportunities that exist where the energy will be utilised by employees due to the strength of motives and basic needs, expectations and incentive values (Susanto et al., 2023). The right motivation will spur the driving force to create a person's work enthusiasm so that they want to work together effectively and integrate with all their efforts to achieve performance, besides motivation can cause and support a person's behaviour so that the person wants to work hard and enthusiastically to achieve optimal results (Fajri et al., 2023). Respondents' responses are discussed based on McClelland's theory:

##### 1. The Need to Achieve (nAch)

Based on the questionnaire results, it can be concluded that PT PLN (Persero) UIK SBS employees have a high need for achievement. This is evidenced by high scores on statements related to performance and self-development, such as:

- X2.2: I will strive to be able to provide achievements for my career path on average: 3.95, Interpretation: Good)
- X2.3: I am always consistent in carrying out tasks with the rules set by the company on average: 4.12, Interpretation: Good)
- X2.4: I will provide good work results according to average company expectations: 4.12, Interpretation: Good)
- X2.7: I will deliver better work than my colleagues on average: 4.10, Interpretation: Good)

This shows that employees are highly motivated to achieve high standards in their work, want to continue learning and developing, and want to make a significant contribution to the company.

##### 2. The Need to Affiliate (nAff)

Based on the results of the questionnaire, it can be concluded that employees of PT PLN (Persero) UIK SBS have a very high need for affiliation. This is evidenced by the average score on statements related to cooperation and self-development, such as:

- X2.5: I enjoy cooperating with others rather than working alone on average: 4.31, Interpretation: Very Good)
- X2.8: My colleagues and I have a good relationship and support each other, average: 4.26, Interpretation: Very Good)
- X2.9: Relationships with superiors are well-established and harmonious, average: 4.24, Interpretation: Very Good)
- X2.10: I feel comfortable with my co-workers, average: 4.25, Interpretation: Very Good)

This shows that employees have a desire to establish close and warm relationships with others, feel comfortable working with others, and value good relationships with superiors and co-workers.

### 3. The Need for Power (nPow)

- Based on the results of the questionnaire, it can be concluded that employees of PT PLN (Persero) UIK SBS have a high need for power. This is evidenced by the average score on statements related to responsibility and leadership, such as:
- X2.6: I believe that I can make a significant contribution to the company, on average: 4.10, Interpretation: Good)
- X2.11: I enjoy helping others in completing their work, average: 4.15, Interpretation: Good)
- X2.12: I want to be a leader in my team, average: 3.98, Interpretation: Good)

This shows that employees have a desire to take responsibility, want to help others, and want to be a leaders in their team. However, the high but lower average scores of the desire for achievement and affiliation indicate that employees do not have a very high need for power.

Based on the analysis of the questionnaire results and McClelland's (1961), it can be concluded that: PT PLN (Persero) UIK SBS employees have a high motivation to achieve, want to achieve high standards in their work, want to continue to learn and develop, and want to make a significant contribution to the company. Employees have a desire to establish close and warm relationships with others, feel comfortable working with others, and value good relationships with superiors and co-workers (Collings & Mellahi, 2009; Werner, 2002). Employees have a desire to take responsibility, want to help others, and want to be a leader in their team.

## Conclusion

Based on the results of research and analysis that has been done, it can be concluded. Work motivation has a positive and significant effect on employee performance at PT PLN (Persero) UIK SBS.

## Acknowledgements

Thank you to those who have helped so that this manuscript is suitable for publication in an international journal.

## References

- Adinegara, D. A. R., Perizade, B., Zunaidah, Z., & Widiyanti, M. (2023). The influence of work motivation and job satisfaction on employee performance in the regional office of the directorate general of customs and excise of east Kalimantan. *International Journal of Social Sciences*, 6(4), 200-205. <https://doi.org/10.21744/ijss.v6n4.2201>
- Afianto, D., & Wuisan, D. S. S. (2023). The Influence of Organizational Culture, Work Environment and Work Motivation on Nurses Performance with Job Satisfaction as a Mediation Variable In Public Health Center XYZ. *Asian Journal of Social and Humanities*, 2(03), 543-559.
- Collings, D. G., & Mellahi, K. (2009). Strategic talent management: A review and research agenda. *Human resource management review*, 19(4), 304-313. <https://doi.org/10.1016/j.hrmr.2009.04.001>
- De Ruyter, K. O., Wetzels, M., & Feinberg, R. (2001). Role stress in call centers: Its effects on employee performance and satisfaction. *Journal of interactive marketing*, 15(2), 23-35. <https://doi.org/10.1002/dir.1008>
- Dwivedula, R., & Bredillet, C. N. (2010). Profiling work motivation of project workers. *International Journal of Project Management*, 28(2), 158-165. <https://doi.org/10.1016/j.ijproman.2009.09.001>
- Eliyana, A., & Ma'arif, S. (2019). Job satisfaction and organizational commitment effect in the transformational leadership towards employee performance. *European Research on Management and Business Economics*, 25(3), 144-150. <https://doi.org/10.1016/j.jedeen.2019.05.001>
- Eraku, R. T. A., Ilato, R., & Hasiru, R. (2023). Pengaruh Mutasi Terhadap Kinerja Pegawai Negeri Sipil Pada Dinas Kesehatan Provinsi Gorontalo. *Journal of Economic and Business Education*, 1(1), 45-52.
- Fajri, M., Oemar, F., & Seswandi, A. (2023). Pengaruh Mutasi, Promosi dan Kompensasi Terhadap Kinerja Karyawan Dengan Kepuasan Kerja Sebagai Variabel Mediasi (Studi Kasus Pada PT. Bank Riau Kepri Syariah (Perseroda) Cabang Pasir Pengaraian). *Jurnal Komunitas Sains Manajemen*, 2(1), 107-120.
- Frimayasa, A., Windayanti, W., Fathiani, F., Rahmat, R., & Febrian, W. D. (2021). Effect Of Reward And Punishment On Employee Performance. *International Journal of Social and Management Studies*, 2(3), 179-186.



- Kuzu, Ö. H., & Özilhan, D. (2014). The effect of employee relationships and knowledge sharing on employees' performance: An empirical research on service industry. *Procedia-Social and Behavioral Sciences*, 109, 1370-1374. <https://doi.org/10.1016/j.sbspro.2013.12.639>
- Lam, C. F., & Gurland, S. T. (2008). Self-determined work motivation predicts job outcomes, but what predicts self-determined work motivation?. *Journal of research in personality*, 42(4), 1109-1115. <https://doi.org/10.1016/j.jrp.2008.02.002>
- Lundberg, C., Gudmundson, A., & Andersson, T. D. (2009). Herzberg's Two-Factor Theory of work motivation tested empirically on seasonal workers in hospitality and tourism. *Tourism management*, 30(6), 890-899. <https://doi.org/10.1016/j.tourman.2008.12.003>
- Marsita, D. N., Perkasa, D. H., & Abdulillah, M. A. F. (2024). Pengaruh Kepemimpinan, Kompensasi, dan Motivasi terhadap Kinerja Karyawan. *AGILITY: Lentera Manajemen Sumber Daya Manusia*, 2(02), 56-67.
- McClelland, D. C. (1961). *The Achieving Society*. In Free Press.
- Nadzilah, N., & Adji, W. H. (2023). Pengaruh Mutasi Dan Rotasi Kerja Terhadap Kinerja Pegawai BPJS Ketenagakerjaan Cabang Cimahi. *Management Studies and Entrepreneurship Journal (MSEJ)*, 4(5), 6595-6604.
- Perkasa, D. H., Susiang, M. I. N., Parashakti, R. D., & Rostina, C. N. (2023). The Influence of the Physical Work Environment, Work Motivation, and Work Discipline on Employee Performance. *KnE Social Sciences*, 286-295.
- Sadikoglu, E., & Zehir, C. (2010). Investigating the effects of innovation and employee performance on the relationship between total quality management practices and firm performance: An empirical study of Turkish firms. *International journal of production economics*, 127(1), 13-26. <https://doi.org/10.1016/j.ijpe.2010.02.013>
- Saifuddin, S., & Kamaruddin, K. (2022). Pengaruh Rotasi Kerja, Motivasi Kerja Dan Semangat Kerja Terhadap Kinerja Pegawai Komisi Independen Pemilihan (KIP) Aceh.
- Sanusi, A. (2011). Metodologi Penelitian Bisnis, Salemba Empat. *Jakarta Selatan*.
- Stoeber, J., Davis, C. R., & Townley, J. (2013). Perfectionism and workaholism in employees: The role of work motivation. *Personality and Individual Differences*, 55(7), 733-738. <https://doi.org/10.1016/j.paid.2013.06.001>
- Sugiyono, D. (2013). Metode penelitian pendidikan pendekatan kuantitatif, kualitatif dan R&D.
- Susanto, P. C., Syailendra, S., & Suryawan, R. F. (2023). Determination of motivation and performance: Analysis of job satisfaction, employee engagement and leadership. *International Journal of Business and Applied Economics*, 2(2), 59-68.
- Syarief, R. R., Kamaluddin, M., & Sabilalo, M. A. (2024). Peran Motivasi Kerja Dalam Memediasi Pengaruh Promosi Jabatan Dan Pengalaman Kerja Terhadap Kinerja Pegawai Organisasi Perangkat Daerah Kabupaten Kolaka. *MANOR: JURNAL MANAJEMEN DAN ORGANISASI REVIEW*, 6(1), 24-36.
- Tampubolon, K., & Sibuea, N. (2023). The Influence Of Supervisory Work Motivation And Competence On The Performance Of School Superintendents In Padangsidempuan City Education Office. *International Journal of Educational Review, Law And Social Sciences (IJERLAS)*, 3(1), 249-261.
- Wahyunto, E., & Marwan, K. G. (2023). The Impact of Digital Leadership, Compensation and Work Motivation on Educator Performance at Sekolah Tinggi Multimedia" MMTC" Yogyakarta. *Remittances Review*, 8(4).
- Werner, S. (2002). Recent developments in international management research: A review of 20 top management journals. *Journal of management*, 28(3), 277-305. [https://doi.org/10.1016/S0149-2063\(02\)00129-0](https://doi.org/10.1016/S0149-2063(02)00129-0)