

**THE INFLUENCE OF WORK ENVIRONMENT, WORK EXPERIENCE,
OCCUPATIONAL HEALTH AND SAFETY (K3) ON THE WORK PRODUCTIVITY
OF PT EMPLOYEES. PLN TEGAL TRANSMISSION AND MAIN SUBSTATION
SERVICE UNIT (ULTG).**

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ABSTRACT

This research aims to determine the influence of the work environment, work experience, work health and safety (K3) on the work productivity of PT employees. PLN Tegal Transmission and Main Substation Service Unit. The population in this study was 57 employees. The sample was determined using a saturated sampling technique, namely by taking a total of 57 respondents from the entire population. The analytical tools used are validity and reliability tests, using classical assumption test data analysis methods, multiple linear regression, hypothesis testing, and R² coefficient of determination tests and using IBM SPSS Version 25. The results of the research show that (t test) the work environment has an influence on employee work productivity, work experience has an influence on employee work productivity, occupational health and safety has no influence on employee work productivity, (F test) work environment, work experience, work health and safety have a simultaneous influence on employee work productivity.

Keywords: *Work Environment, Work Experience, Occupational Health and Safety, Work Productivity*

ABSTRACT

This study aims to determine the influence of the work environment, work experience, occupational health and safety (K3) on the work productivity of employees of PT. PLN Transmission Service Unit and Tegal Substation. The population in this study is 57 employees. The sample was determined using a saturated sampling technique, namely by taking a number from the entire population of 57 respondents. The analysis tools used were validity tests and reliability tests, using the data analysis methods of classical assumption tests, multiple linear regressions, hypothesis tests, and determination coefficient tests R^2 and using IBM SPSS

Version 25. The results of the study showed that (Test t) the work environment had an influence on employee work productivity, work experience had an influence on employee work productivity, occupational health and safety (K3) had no effect on employee work productivity, (Test F) work environment, work experience, occupational health and safety (K3) had a simultaneous influence on employee work productivity.

Keywords: Work Environment, Work Experience, Occupational Health and Safety (K3), Work Productivity

INTRODUCTION

As time goes by and advances in technology, humans are required to have quality skills to meet a better standard of living, therefore if human resources can be used effectively and efficiently it will be useful to support sustainable economic growth. The problem that exists now is how to create human resources that can produce optimal productivity, so that company goals can be achieved.

According to Wibowo, (2017:115), Conceptually, productivity is defined as a comparison between the totality of expenditure at a certain time divided by the totality of input during a certain period. Apart from that, factors that influence employee work productivity can be seen from the work environment. Providing safe and comfortable work environment facilities of course makes employees feel safe when working in the company, because the environment in which employees work is one of the factors that must be considered to increase employee productivity..

According to Budihardjo in Putri & Irfani, (2020:84) A good work environment

can make employees enthusiastic when working and have a sense of responsibility in increasing employee work productivity." However, in creating a good work environment for employees, this must also be supported by sufficient work experience or competence for each employee, because when carrying out the assignments given, employees must understand well what they are doing.

According to Tamaka et al., (2022:441) Work experience is a basis/reference for an employee to be able to place themselves in the right conditions, dare to take risks, be able to face challenges with full responsibility and be able to communicate well with various parties to maintain productivity, performance and produce individuals who are competent in their field.. According to Erwin & Rosnaida, (2021:2) Work experience is a condition that provides an indication that an employee has competence and knowledge of a field of work either at one or several companies that the employee has worked for. If the work environment is adequate and the employee's work experience is always taken into

account, then employees also need to get their rights, so that when they work they always feel safe and protected by the company by providing guarantees for the safety and health of each employee..

According to Sinambela, (2016:362) Safety is an effort to prevent any unsafe actions or conditions that can result in accidents, while occupational health is the prevention of diseases that might arise after starting work, this aims to reduce and avoid the risk of work accidents which of course will be detrimental to employees and the company so that can interfere with work productivity.

This is also related to the State Electricity Company or what we usually know as PLN, which is tasked with supplying and managing electricity supply in Indonesia, and is the only government-owned company that provides electricity services, PT. PLN (Persero) in electricity distribution services, divides the functions of its parent unit into several parent units, namely generation, transmission and

distribution. Due to the wide coverage of its work area, PT. PLN (Persero) has units throughout Indonesia and each has its own function according to its parent unit.

This research was conducted at PT. PLN (Persero) Tegal Transmission Service Unit and Main Substation (ULTG), located on Jalan Raya II Slawi, Jl Kebasen, Talang, Tegal Regency. Has the main function of carrying out maintenance of assets in the form of 150KV substations, 150KV SUTT, 500KV SUTET, and 500KV GITET and other electrical equipment, such as time based maintenance, condition based maintenance, and emergency maintenance. ULTG Tegal also oversees several main substations (GI), which are spread across several locations from Tegal Regency, Brebes, Pemalang, Pekalongan, to Batang, with a total of 9 main substations.

Below is a table of routine maintenance plans for substations carried out by PT employees. PLN (Persero) ULTG Tegal during 2022:

Table 1
PT. Routine Maintenance Plan PLN ULTG Tegal in 2022

Substation	Plan/ Realization	Moon												Total
		1	2	3	4	5	6	7	8	9	10	11	12	
GI 150KV	Plan							9						9
KEBASEN	Realization	1	1	0	0	0	1	2	4	0	0	0	0	9
GI 150KV	Plan							7						7
BALAPULANG	Realization	0	0	3	0	0	0	1	2	1	0	0	0	7
GI 150KV	Plan							4						4
BUMIAYU	Realization	0	0	0	0	0	1	1	1	1	0	0	0	4
GI 150KV	Plan							5						5
BREBES	Realization	0	0	0	0	1	1	3	0	0	0	0	0	5
GI 150KV	Plan							7						7
PEMALANG	Realization	1	0	1	0	0	0	4	0	1	0	0	0	7
GITET 500KV	Plan							14						14
PEMALANG	Realization	0	0	8	0	2	1	1	0	0	0	0	0	12
GI 150KV	Plan							4						4
PEKALONGAN	Realization	1	0	0	0	0	1	0	0	2	0	0	0	4
GI 150KV ROD	Plan							4						4
GI 150KV	Realization	0	0	0	0	0	0	0	2	2	0	0	0	4
NEW BATANG	Plan							9						9
NEW BATANG	Realization	1	2	0	0	0	3	0	2	1	0	0	0	9

Source: PT. PLN (Persero) UPT Purwokerto

Based on table 1 above, it can be concluded that PT. PLN (Persero) ULTG Tegal experienced a decline in work productivity, this was proven by the maintenance of GITET 500KV Pemalang, because the realization had not yet reached the target set by the company, namely 14 times in 2022, therefore by not achieving the target, the company bears the risk of significant losses. requires them to carry out GITET maintenance again in 2024. By looking at the explanation above and the factors suspected to be the cause of the decline in work productivity, researchers want to conduct research on the work environment, work experience, work health and safety (K3) and how much influence it

has on the work productivity of PT employees. PLN (Persero) Tegal Transmission Service Unit and Substation.

LITERATURE REVIEW

A. Work Productivity

According to Marwansyah in Iqramawati & Kusumayadi, (2022:61) Work productivity is a work measurement tool that focuses on how long assignments can be completed and is the most important input in human resource planning, with cost estimation, employee work scheduling, aimed at encouraging employees to take action for company goals. According to Hasibuan (in Chaerudin et al., 2020:50) Productivity is a comparison of output (results) with input. According to Paul Mali

(in Wibowo, 2017:115) Productivity is related to how to increase the output of goods and services as high as possible by utilizing resources efficiently.

B. Work Environment

According to Sedarmayanthi (in Darmayanti, 2017:65) The work environment is a place where employees work and carry out all activities every day, by creating a conducive work environment it can provide a sense of security that can make employees work optimally, and can influence employees' emotions. According to Sedarmayanthi (in Hidayat & Wahyuni, 2018:3) The work environment includes all the tools and materials encountered, the surrounding environment where individuals work, the way they work, and work arrangements, both individual and group. The work environment includes work relationships formed between fellow employees, both superiors and subordinates and vice versa, as well as the physical work environment where employees work, Musdalifah & Rika, (2021:217).

C. Work Experience

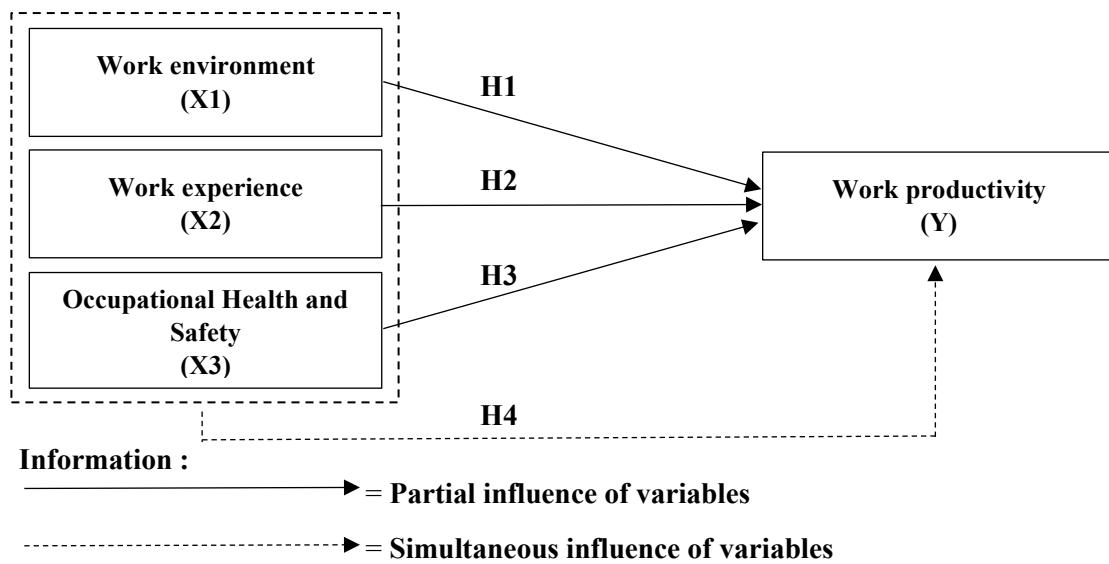
Work experience is a process of developing insight and expertise about a workforce profession in carrying out their duties, Fadhila, (2021:122). According to Tamaka et al., (2022:441) Work experience is a basis and reference for employees to be able to place themselves in the right conditions, dare to take risks, be able to face

challenges responsibly and be able to communicate well, to maintain productivity performance and produce individuals who are competent in their field..

D. Occupational Health and Safety

According to Fitriyani et al., (2022:2) Occupational safety and health is a program system created for workers and employers as an effort to prevent accidents and illnesses in the work environment, by identifying actions and anticipating things that have the potential to occur at work. According to Apriliyani, (2022:321) Occupational health and safety are all forms of protection efforts from the company to its employees which are useful for reducing the risk of work accidents and are expected to increase employee work productivity.

HYPOTHESIS



Picture 1
Conceptual Thinking Framework

H₁: The work environment influences the work productivity of PT employees. PLN (Persero) Tegal Transmission Service Unit and Substation.

H₂: Work Experience influences the Work Productivity of PT Employees. PLN (Persero) Tegal Transmission Service Unit and Substation.

H₃: Occupational Safety and Health influences the work productivity of PT employees. PLN (Persero) Tegal Transmission Service Unit and Substation.

H₄: Work Environment, Work Experience and Occupational Safety and Health (K3) simultaneously influence the Work Productivity of PT Employees. PLN (Persero) Tegal Transmission Service Unit and Substation.

RESEARCH METHODS

This research uses quantitative research methods. The population in this study was 57 employees, in determining the sample in the study using a saturated sampling technique, namely by taking samples from all employees who work at PT. PLN (Persero) Tegal Transmission Service Unit and Substation. The analytical tools used are validity and reliability tests, using classical assumption test data analysis methods, multiple linear regression, hypothesis testing, and the R² coefficient of determination test. Then the data obtained was processed using IBM SPSS Version 25 software.

RESULTS AND DISCUSSION

A. Validity and Reliability Test Results

This test was carried out to measure the validity of a questionnaire statement item, and was carried out on 30 respondents who had the same characteristics. With the criterion that the calculated r value $>$ r table.

Table 2
Validity Test Results

No Item	r count				r Table	Info
	Y	X1	X2	X3		
1	0.754	0.584	0.454	0.392	0.361	Valid
2	0.681	0.606	0.465	0.753	0.361	Valid
3	0.837	0.638	0.695	0.776	0.361	Valid
4	0.716	0.742	0.617	0.784	0.361	Valid
5	0.764	0.515	0.711	0.830	0.361	Valid
6	0.678	0.794	0.857	0.785	0.361	Valid
7	0.648	0.740	0.559	0.416	0.361	Valid
8	0.651	0.647	0.696	0.402	0.361	Valid
9	0.638	0.501	0.772	0.478	0.361	Valid
10	0.646	0.535	0.823	0.438	0.361	Valid

Source: Data Processing SPSS 25 (2023)

Based on table 2 above, it can be concluded that all statement items on variables X1,X2,X3,Y.

Table 3
Reliability Test Results

Variables	Cronbach's Alpha value	Standard	Information
X1	0,833	0,60	Reliable
X2	0,859	0,60	Reliable
X3	0,829	0,60	Reliable
Y	0,869	0,60	Reliable

Source: Data Processing SPSS 25 (2023)

Based on table 3 above, all variables have positive Cronbach's Alpha values and the standard alpha coefficient is 0.60. So it can be concluded that the data tested in this research is reliable or consistent.

B. Classic Assumption Test Results

Table 4
Normality Test Results

One-Sample Kolmogorov-Smirnov Test		Unstandardized Residual
N		57
Normal	Mean	,0000000
Parameters,a	Std. Deviation	4,52639981
Most Extreme Differences	Absolute	,063
	Positive	,055
	Negative	-,063
Test Statistic		,063
Asymp. Sig. (2-tailed)		,200c,d

Source: SPSS 25 (2023) Processing Data

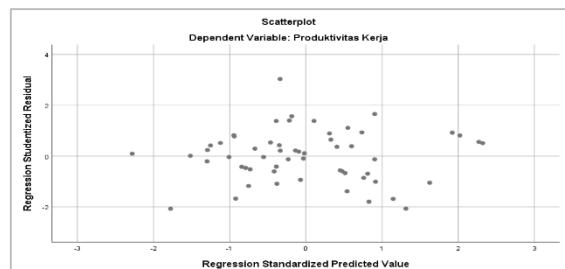
From table 4 above, the Asymp value. Sig 0.200 $>$ 0.05, it can be concluded that the data is normally distributed.

Table 5
Multicollinearity Test Results

Type	Coefficientsa	
	Collinearity Statistics	
Type	Tolerance	VIF
1 (Constant)		
X1	,622	1,607
X2	,592	1,690
X3	,881	1,136

Source: Data Processing SPSS 25 (2023)

The test results show that the tolerance value is >0.01 and the VIF value is <10 , Ghozali, (2018). So there is no indication of multicollinearity between variables.



Picture 2
Heteroscedasticity Test Results

Based on the Scatterplot graph of the distribution of points above and below zero on the Y axis, the data is homoscedastic.

C. Results of Multiple Linear Regression Analysis

Table 6
Multiple Linear Regression Test Results

Type	Unstandardized Coefficients			Sig.
	B	Std. Error	t	
1 (Constant)	2,983	4,857	,614	,542
X1	,479	,140	3,416	,001
X2	,232	,115	2,021	,048
X3	,218	,133	1,643	,106

Source: Data Processing SPSS 25 (2023)

Based on table 6 above, it can be written in the regression equation formula as follows:

$$Y = 2,983 + 0,479X_1 + 0,232X_2 + 0,218X_3 + e$$

D. Hypothesis Test Results

Table 7
t Test Results (Partial Test)

Type	t	Sig.
1 (Constant)	,614	,542
X1	3,416	,001
X2	2,021	,048
X3	1,643	,106

Source: Data Processing SPSS 25 (2023)

1. The Work Environment variable (X1) has a t-test value of $3.416 > t$ table 2.006 with a significance level of $0.001 < 0.050$. This means that the Work Environment (X1) has a significant effect on Work Productivity (Y), so that H_0 is rejected and H_1 is accepted.
2. The work experience variable (X2) has a t-test value of $2.021 > t$ table 2.006 with a significance level of $0.048 < 0.050$. This means that work experience (X2) has a significant effect on work productivity (Y), so that H_0 is rejected and H_2 is accepted.

3. The Occupational Health and Safety (K3) variable has a t-test value of $1.643 < t$ table 2.006 with a significance level of $0.106 > 0.050$. This means that Occupational Health and Safety K3 (X3) has no effect on Work Productivity (Y), so H_0 is accepted and H_3 is rejected.

Table 8
F Test Results (Simultaneous Test)

Type	ANOVAa				
	Sum of Squares	Df	Mean Square	F	Sig.
1 Regression	1076,375	3	358,792	16,574	,000B
Residual	1147,345	53	21,648		
Total	2223,719	56			

a. Dependent Variable: Work productivity
b. Predictors: (Constant), X3, X2, X1

Source: Data processing SPSS 25 (2023)

The calculated F value was $16.574 > F$ table 2.779 and the significance was $0.000 < 0.050$. So it can be concluded that the regression model of all independent variables (Work Environment, Work Experience, Work Health and Safety) has a simultaneous effect on Work Productivity.

E. Coefficient of Determination Results R2

Table 9
Coefficient of Determination Test Results

Type	Model Summaryb			
	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,696a	,484	,455	4,653

a. Predictors: (Constant), K3, Work Environment, Work Experience
b. Dependent Variable: Work Productivity

Source: Data processing SPSS 25 (2023)

Based on table 9 above, the Adjusted R Square column obtains a value of 0.455, when calculated using the coefficient of determination formula it is obtained $0.455 \times 100\% = 45.5\%$. So it can be concluded that work productivity can be influenced by work environment variables, work experience, work health and safety (K3) by 45.5% while the remaining 54.5% is influenced by other variables not examined in this research.

F. Discussion

1. With the results of the regression coefficient value on the Work Environment (X1) which is 0.479, and has a positive sign, the significance value is $0.001 < 0.050$, and the calculated t value is $3.416 >$ from t table 2.006, meaning that there is an influence of the Work Environment variable on the Work Productivity of PT Employees. PLN (Persero) Tegal Transmission Service Unit and Substation. So that the proposed hypothesis is accepted as true, and is supported by previous research (Putri & Irfani, 2020).
2. With the results of the regression coefficient value on Work Experience (X2) which is 0.232, and has a positive sign, the significance value is $0.048 < 0.050$, and the calculated t value is $2.021 >$ from t table 2.006, meaning that there is an influence of the Work Experience variable on the Work Productivity of PT

Employees. PLN (Persero) Tegal Transmission Service Unit and Substation. So that the proposed hypothesis is accepted as true. This research is supported by research conducted by Kristianti & Sunarsi, (2020).

3. The results of the regression coefficient value on Occupational Health and Safety (X3) are 0.218, and have a positive sign, the significance value is $0.106 > 0.050$, and the calculated t value is $1.643 <$ from t table 2.006, meaning there is no influence of the Occupational Health and Safety (K3) variable. on the Work Productivity of PT Employees. PLN (Persero) Tegal Transmission Service Unit and Substation. So the hypothesis proposed by H3 is rejected. The research results agree with research conducted by Apriliyani, (2022) which states that occupational health and safety has no effect on employee work productivity.
4. Based on the results of simultaneous testing, the calculated F value is 16.574 with a significance value of 0.000, meaning the significance value is <0.050 , it is concluded that the variables Work Environment, Work Experience, Work Health and Safety (K3) together have a significant and influential effect on employee work productivity.

CONCLUSIONS AND RECOMMENDATIONS

A. Conclusion

1. The work environment influences the work productivity of PT employees. PLN (Persero) Tegal Transmission Service Unit and Substation.
2. Work experience influences the work productivity of PT employees. PLN (Persero) Tegal Transmission Service Unit and Substation.
3. Occupational Health and Safety has no effect on the work productivity of PT employees. PLN (Persero) Tegal Transmission Service Unit and Substation.
4. Work Environment, Work Experience, Work Health and Safety all influence PT Work Productivity. PLN (Persero) Tegal Transmission Service Unit and Substation

B. Suggestions

1. It is hoped that companies in increasing the work productivity of their employees need to pay attention to several indicators as follows, including that companies can create employees to always think optimistically and never give up, remain enthusiastic in working, provide opportunities for each employee to mobilize all their competencies, have a diligent attitude in working, High responsibility, always serious in improving work results.
2. It is hoped that the Company will improve the quality of the work environment by creating a professional and fair management system, building harmonious relationships with each employee, always paying attention to comfort in working such as proper facilities, adequate work equipment, a safe and comfortable office layout, and implement religious values.
3. It is hoped that the company, in improving employee work experience, will pay more attention to the competence of each employee so that they can understand each task given and employees are able to adapt well, and can optimize the use of technology and equipment that supports efficiency..
4. It is hoped that the Company in improving K3 occupational health and safety will take more into account the arrangement of dangerous goods, a comfortable work space that is not too crowded or cramped, good air management such as clean air ventilation, room temperature that is not too cold or hot, a clean work space that is not dirty or dusty, the work space lighting is not too bright or dark, and always pay attention to the physical and mental condition of employees before working.

BIBLIOGRAPHY

Apriliyani, R. (2022). The effect of occupational safety and health (K3) and the work environment on the work productivity of CV Surya Kencana Food employees. *Journal of Business and Innovation Management (BIMA)*, 4(2), 319–330. <https://doi.org/10.33752/bima.v4i2.391>

Chaerudin, A., Rani, H., & Alicia, V. (2020). *Human Resources is the Main Pillar of Organizational Operational Activities* (S.Mareta(ed.)). CVJejak. <https://play.google.com/books/reader?id=lH3-DwAAQBAJ&pg=GBS.PA43&hl=ar>

Darmayanti, Y. (2017). The influence of the work environment and standard operating procedures on the work productivity of employees of the Sukacinta Car Affairs Supervisor (PUG SCT) PT. Indonesian Railway (Persero) Lahat Regency. *Journal of Economics and Business Education (JPEB)*, 5(1), 63–72. <https://doi.org/10.21009/jpeb.005.1.5>

Erwin, E., & Rosnaida, R. (2021). The effect of work experience, job satisfaction and incentives on employee work productivity at PDAM Tirta Kualo, Tanjungbalai City. *MES Management Economics Science*, 2(2), 1–11. <https://doi.org/10.36294/mes.v2i2.1891.g1553>

Fadhila, U. (2021). The influence of work experience and motivation on the work productivity of employees of PT. PLN (Persero) Bangko. *Journal of Ecopenddia*, 6(1), 121–126. <http://journal.stkipypmbangko.ac.id/index.php/ekopendia/article/view/480>

Fitriyani, I., Fitryani, V., & Kevin, M. (2022). The effect of the occupational safety and health (K3) program on employee work productivity (Study on PT. PLN (Persero) Pond Unit). *Journal of Research and Management Studies SAMALEWA*, 2(1), 1–10. <https://doi.org/10.58406/samalewa.v2i1.845>

Ghozali, I. (2018). *Multivariate analysis application with IBM SPSS 25 9th edition program*. http://slims.umn.ac.id//index.php?p=show_detail&id=19545

Hidayat, A. I., & Wahyuni, D. U. (2018). The influence of K3 and the work environment on the work productivity of employees of PT. Miwon Indonesia. *Journal of Management Science and Research*, 7, 1–17. <http://jurnalmahasiswa.stiesia.ac.id/index.php/jirm/article/view/1368>

Iqramawati, F., & Kusumayadi, F. (2022). The effect of occupational safety and occupational health and work incentives on employee work productivity at PT. PLN (Persero) UP3 Bima. *Journal of Human Resource Management*, 16(1), 57–72.

<https://ejurnal.unisri.ac.id/index.php/Manajemen/article/view/7581>

Kristianti, L. S., & Sunarsi, D. (2020). The influence of motivation and work experience on employee productivity at PT. Mobilindo Perkasa Tangerang. *Journal of Management and Accounting*, 15(2), 87–95. <https://doi.org/10.32534/jv.v15i2.1088>

Musdalifah, M., & Rika, R. (2021). The influence of work discipline and work environment on the work productivity of employees of PT. PLN (Persero) UPDK Bakaru The Effect of Work Discipline and Work Environment on Employee Productivity of PT PLN (Persero) UPDK Bakaru Effect Of Work Discipline And. *DECISION Journal of Economics and Business*, 2(2), 215–224. <https://jurnal.umpar.ac.id/index.php/decision/article/view/1395>

Putri, H. A., & Irfani, A. (2020). The influence of the work environment and workload on the work productivity of employees at PT. Pos Indonesia (Persero). *Management Proceedings*, 6(1), 82–87. <https://doi.org/10.29313/v6i1.19668>

Sinambela, lijan poltak. (2016). Human Resource Management builds a solid work team to improve work. In suryani & blessing Damayanti (Ed.), *News.Ge*. PT Bumi Aksara.

Tamaka, M. T., Sendow, G. M., & Uhing, Y. (2022). The influence of supervision, work experience and quality of work life on employee productivity at PT. Pegadaian (Persero)KANWILVManado.EMBA Journal, 10(2), 440–450. <https://doi.org/10.35794/emba.v10i2.39361>

Wibowo, W. (2017). *Human Resource Management (Revised Edition)* (Lia (ed.)). CV. R.A.De.Rozarie.

https://www.academia.edu/34934418/Manajemen_Sumber_Daya_Manusia_Edisi_Revisi