Science and Education Journal
Vol 5 No 3 (2026)
E-ISSN : 2962-9713
P-ISSN : 2963-928X

The Effect Of Work Environment On Employee Performance Through Work Discipline At PT Berkah Bumi Independen Wood Factory

Nela Arya Marshenda[1], Ismi Darmastuti[2]
[1]Department of Management, Faculty of Economics and Business, Diponegoro University, nelaarya0803@students.undip.ac.id
[2]Department of Management, Faculty of Economics and Business, Diponegoro University, ismidarmastuti@lecturer.undip.ac.id

Abstrak

Penelitian ini bertujuan menganalisis pengaruh lingkungan kerja terhadap kinerja karyawan melalui disiplin kerja sebagai variabel mediasi pada karyawan bagian produksi PT Berkah Bumi Independen. Penelitian ini dilatarbelakangi oleh pentingnya lingkungan kerja dan kedisiplinan dalam mendukung kinerja karyawan pada industri pengolahan kayu yang memiliki risiko kerja cukup tinggi. Penelitian menggunakan pendekatan kuantitatif dengan metode survei. Populasi penelitian adalah seluruh karyawan PT Berkah Bumi Independen sebanyak 426 karyawan. Sampel berjumlah 100 responden yang dipilih melalui teknik purposive sampling. Data dikumpulkan menggunakan kuesioner skala Likert lima poin dan dianalisis dengan Structural Equation Modeling berbasis Partial Least Square (SEM-PLS). Hasil penelitian menunjukkan bahwa lingkungan kerja berpengaruh positif dan signifikan terhadap kinerja karyawan. Lingkungan kerja juga berpengaruh positif dan signifikan terhadap disiplin kerja. Disiplin kerja berpengaruh positif dan signifikan terhadap kinerja karyawan. Hasil pengujian mediasi menunjukkan bahwa disiplin kerja mampu memediasi pengaruh lingkungan kerja terhadap kinerja karyawan. Temuan ini menunjukkan bahwa lingkungan kerja yang baik tidak hanya meningkatkan kinerja secara langsung, tetapi juga membentuk perilaku kerja yang lebih disiplin sehingga berdampak pada peningkatan kinerja.

Kata Kunci: *Lingkungan Kerja, Disiplin Kerja, Kinerja Karyawan, SEM-PL, Industri Pengolahan Kayu.*

Abstract

This study aims to analyze the influence of the work environment on employee performance through work discipline as a mediating variable among production employees at PT Berkah Bumi Independen. The study was motivated by the importance of the work environment and work discipline in supporting employee performance in the wood-processing industry, which has relatively high occupational risks. This research employed a quantitative survey approach. The population consisted of all 426 employees of PT Berkah Bumi Independen, while the sample comprised 100 respondents selected using purposive sampling. Data were collected through a five-point Likert scale questionnaire and analyzed using Partial Least Square-based Structural Equation Modeling (SEM-PLS). The results show that the work environment has a positive and significant effect on employee performance. The work environment also has a positive and significant effect on work discipline. Furthermore, work discipline has a positive and significant effect on employee performance. The mediation test indicates that work discipline mediates the influence of the work environment on employee performance. These findings imply that a good work environment not only directly improves employee performance but also encourages disciplined work behavior, which subsequently contributes to better performance outcomes.

Keywords: *Work Environment, Work Discipline, Employee Performance, SEM-PLS, Wood Processing Industry.*

E-ISSN : 2962-9713
P-ISSN : 2963-928X

Corresponding Author:
Nela Arya Marshenda
Diponegoro University, nelaarya0803@students.undip.ac.id

INTRODUCTION

An organization's ability to achieve its operational objectives depends greatly on the quality of human resource management. In increasingly competitive industrial conditions, organizations are required not only to improve production efficiency but also to ensure that employees can work productively, safely, and consistently. Employee performance is an important indicator because it is directly related to target achievement, work quality, and organizational sustainability (Muriuki and Wanyoike, 2021; Garengo et al., 2022).

The work environment is one of the strategic factors that influences employee performance. A conducive work environment can create comfort, reduce accident risks, improve coordination, and increase work effectiveness. Conversely, an unsafe or poorly organized work environment can reduce concentration, increase fatigue, and hinder productivity (Arbyan and Riyanto, 2023; Firman, 2022). In manufacturing industries, this condition becomes increasingly important because the production process involves machinery, raw materials, noise, and relatively intensive physical activity (Ahmad and Hariasih, 2023).

The wood-processing industry has high-risk job characteristics because it involves cutting machines, debarking processes, veneer gluing, pressing activities, and exposure to wood dust. These risks can affect worker safety and health if they are not balanced with proper work environment management and compliance with safety procedures. Studies on the wood industry show that dust exposure, high-speed machine use, and procedural negligence can increase the potential for work injuries and health problems (Araujo-Vila et al., 2022; Ameen et al., 2023; Ennin et al., 2024).

In the context of human resource management, the work environment is not only understood as physical conditions such as facilities, lighting, temperature, layout, and noise, but also includes nonphysical elements such as relationships among employees, communication, organizational support, and work climate. A good work environment can become an organizational resource that helps employees reduce work pressure and improve the quality of task implementation (Soelistya et al., 2021; Robbins and Judge, 2024).

However, previous research findings on the relationship between the work environment and employee performance still show inconsistency. Some studies state that the work environment has a positive and significant effect on performance, while other studies show that this effect is not always directly significant. This inconsistency indicates the possibility of another variable that explains the mechanism through which the work environment influences employee performance. One relevant variable is work discipline, because discipline reflects employee compliance with rules, procedures, working time, and work responsibilities (Hasibuan, 2019; Elfira et al., 2023).

The empirical phenomenon at PT Berkah Bumi Independen shows that the production work environment has a relatively high level of risk due to wood dust exposure, the use of production machines, and the need for strict work coordination. The company has provided personal protective equipment and standard operating procedures, but employee compliance with the use of protective equipment and work procedures has not been fully optimal. In a team-based production system, the absence

E-ISSN : 2962-9713
P-ISSN : 2963-928X

or noncompliance of one employee can also disrupt the smooth operation of an entire production line.

Based on the research gap and empirical phenomenon, this study aims to examine and analyze the effect of the work environment on employee performance through work discipline as a mediating variable among production employees at PT Berkah Bumi Independen. This research is expected to contribute to the study of human resource management, particularly in explaining the mechanism of the relationship among work environment, work discipline, and employee performance in the wood-processing industry.

Table 1. Research Gap

Researcher	Relationship Between Variables	Finding
Rivella et al. (2024)	Work environment on employee performance	Positive and significant
Nasrip and Pono (2024)	Physical work environment on employee performance	Not significant
Rabuana and Yanuar (2023)	Work environment on employee performance	Not directly significant
Fauziyah et al. (2024)	Work environment on employee performance	Not significant
Elfira et al. (2023)	Work environment -> Work discipline -> Employee performance	Significant mediation

Source: Researcher journal references, 2026

METHOD

This study used a quantitative approach with a survey method. The quantitative approach was selected because the study aimed to test the relationships among variables objectively through numerical data and statistical analysis (Sugiyono, 2023). The research variables consisted of the work environment as the independent variable, employee performance as the dependent variable, and work discipline as the mediating variable.

The population of this study was all permanent production employees of PT Berkah Bumi Independen, totaling 426 people. The research sample was set at 100 respondents based on the minimum sample guideline for SEM-PLS multivariate analysis, namely at least five times the number of research indicators (Hair et al., 2021). The sampling technique used purposive sampling with the following criteria: permanent production employees, a minimum work period of six months, and willingness to complete the questionnaire.

Primary data were collected through a closed-ended questionnaire using a five-point Likert scale, ranging from strongly disagree to strongly agree. Secondary data were obtained from company documents, books, scientific journals, and relevant previous studies. Data analysis was conducted using Partial Least Square-based Structural Equation Modeling (SEM-PLS) through SmartPLS. The testing process included outer model evaluation to assess construct validity and reliability, and inner model evaluation to examine R-Square, path coefficients, direct effects, and indirect effects through bootstrapping. A hypothesis was considered significant when the t-statistic value was greater than 1.96 and the p-value was less than 0.05 (Hair et al., 2021).

Table 2. Operational Definition of Variables

Variable	Operational Definition	Indicator
Work Environment (X)	Employees' perceptions of physical and nonphysical	Physical: work equipment, facilities, layout, lighting, air

E-ISSN : 2962-9713
P-ISSN : 2963-928X

	work conditions that influence the implementation of daily tasks.	circulation, temperature, and noise. Nonphysical: relationships among employees, superior-subordinate relationships, communication, organizational support, and work climate.
Work Discipline (Z)	The level of employee awareness and willingness to comply with organizational rules, procedures, and work norms.	Attendance level, compliance with company regulations, and effective use of working time.
Employee Performance (Y)	The level of individual success in carrying out job duties and responsibilities effectively and efficiently according to organizational standards.	Work quality, work quantity, timeliness, work effectiveness, and work commitment.

Source: Soelistya et al. (2021), Hasibuan (2019), and Robbins and Judge (2024), processed by the researcher, 2026

RESULTS AND DISCUSSION

Respondent Characteristics

The respondents were production employees of PT Berkah Bumi Independen who met the sample criteria. Of the 141 questionnaires collected, 100 data sets were used in the analysis after data checking and screening. The characteristics of respondents are presented in Table 3.

Table 3. Respondent Characteristics

Characteristic	Category	Frequency	Percentage
Gender	Male	72	72%
Gender	Female	28	28%
Age	<= 20 years	18	18%
Age	21-30 years	63	63%
Age	31-40 years	19	19%
Highest Education	Junior High School/Equivalent	24	24%
Highest Education	Senior High/Vocational School/Equivalent	63	63%
Highest Education	Diploma (D3)	1	1%
Highest Education	Bachelor's Degree (S1)	12	12%
Length of Service	<= 1 year	60	60%
Length of Service	2-3 years	31	31%
Length of Service	>= 4 years	9	9%

Source: Primary data processed by the researcher, 2026

Table 3 shows that the majority of respondents were male employees at 72%, aged 21-30 years at 63%, had a final education level of senior high/vocational school or equivalent at 63%, and had a length of service of <= 1 year at 60%. This composition indicates that the production department is dominated by productive-age workers with secondary education backgrounds and relatively new work experience, while still meeting the minimum work period required to understand the company's working conditions.

E-ISSN : 2962-9713
P-ISSN : 2963-928X

Measurement Model Evaluation (Outer Model)

Outer model evaluation was conducted to ensure that the research indicators were valid and reliable in measuring the constructs. All indicators used after the evaluation process had outer loading values above the minimum criterion. Reliability and construct validity testing showed that Cronbach's Alpha, Composite Reliability, and AVE values met the required criteria; therefore, the constructs were suitable for structural model testing.

Table 4. Construct Reliability and Validity Test

Variable	Cronbach's Alpha	Composite Reliability (rho_a)	Composite Reliability (rho_c)	AVE
Work Discipline	0.872	0.880	0.922	0.797
Employee Performance	0.915	0.919	0.937	0.748
Work Environment	0.918	0.929	0.960	0.923

Source: Primary data processed by the researcher, 2026

Based on Table 4, all Cronbach's Alpha and Composite Reliability values are above 0.70, while all AVE values are above 0.50. This indicates that the constructs of work discipline, employee performance, and work environment have good internal reliability and adequate convergent validity. The high AVE value of the work environment also confirms that the physical and nonphysical dimensions strongly represent the work environment construct.

Structural Model Evaluation (Inner Model)

Inner model evaluation was carried out to determine the ability of the model to explain relationships among variables. The R-Square value shows the extent to which endogenous variables can be explained by the variables that influence them in the model.

Table 5. R-Square Value

Variable	R-Square	Adjusted R-Square
Work Discipline	0.407	0.401
Employee Performance	0.683	0.677

Source: Primary data processed by the researcher, 2026

The R-Square value for work discipline is 0.407, indicating that the work environment explains 40.7% of the variation in work discipline, while the remaining percentage is influenced by variables outside the model. The R-Square value for employee performance is 0.683, indicating that the work environment and work discipline explain 68.3% of the variation in employee performance. Therefore, the model has a fairly strong explanatory ability for employee performance.

Hypothesis Testing

Table 6. Direct Effect Hypothesis Test Results

Relationship Between Variables	Original Sample	T-statistics	P-Value	Description
Work Environment -> Employee Performance	0.291	3.202	0.001	Significant

E-ISSN : 2962-9713
P-ISSN : 2963-928X

Work Environment -> Work Discipline	0.638	11.004	0.000	Significant
Work Discipline -> Employee Performance	0.610	5.554	0.000	Significant

Source: Primary data processed by the researcher, 2026

Table 7. Indirect Effect Hypothesis Test Results

Relationship Between Variables	Original Sample	T-statistics	P-Value	Description
Work Environment -> Work Discipline -> Employee Performance	0.389	4.650	0.000	Significant

Source: Primary data processed by the researcher, 2026

The hypothesis test results show that all direct and indirect relationships have p-values below 0.05. The work environment has a positive and significant effect on employee performance with a coefficient of 0.291. The work environment also has a positive and significant effect on work discipline with a coefficient of 0.638. Furthermore, work discipline has a positive and significant effect on employee performance with a coefficient of 0.610. The indirect effect of the work environment on employee performance through work discipline is also significant with a coefficient of 0.389.

The type of mediation was analyzed using Variance Accounted For (VAF). The VAF value of 57.21% falls within the range of 20%-80%; therefore, work discipline acts as a partial mediator. This means that the work environment influences employee performance through two paths, namely directly and indirectly through work discipline.

Table 8. Summary of Hypothesis Testing Results

Hypothesis	Hypothesis Statement	Result
H1	The work environment affects employee performance	Accepted
H2	The work environment affects work discipline	Accepted
H3	Work discipline affects employee performance	Accepted
H4	Work discipline mediates the effect of the work environment on employee performance	Accepted

Source: Primary data processed by the researcher, 2026

Discussion

The results show that the work environment has a positive and significant effect on employee performance. This finding means that the better the work environment perceived by employees, the higher the resulting performance. In the production department of a wood factory, the work environment plays an important role because employees directly face production machines, wood dust exposure, noise, and demands for work accuracy. A safe, comfortable, and well-organized work environment supports employees in completing tasks more effectively. This finding is in line with Rivella et

E-ISSN : 2962-9713
P-ISSN : 2963-928X

al. (2024), who stated that the work environment significantly influences employee performance.

The work environment is also proven to have a positive and significant effect on work discipline. This indicates that an orderly and safe work environment, supported by clear communication, can encourage employees to comply more consistently with company rules and procedures. In the wood-processing industry, employees need to comply with safety standards, use personal protective equipment, and follow production workflows. Therefore, the work environment does not only affect physical comfort but also shapes more directed and disciplined work behavior.

Work discipline has a positive and significant effect on employee performance. Employees with good attendance, compliance with company regulations, and the ability to use working time effectively tend to produce better work quality and quantity. Work discipline becomes an important behavioral factor because the production process at PT Berkah Bumi Independen depends heavily on team coordination. Noncompliance with work rules can lead to delays, production errors, and even work accident risks.

The findings also prove that work discipline mediates the effect of the work environment on employee performance. A good work environment does not automatically improve performance if it is not accompanied by disciplined behavior. Conversely, when the work environment can encourage compliance with rules, effective use of working time, and responsibility for tasks, performance improvement becomes stronger. This finding supports Elfira et al. (2023), who showed that work discipline can serve as a linking mechanism between the work environment and employee performance.

CONCLUSION

This study concludes that the work environment has a positive and significant effect on the performance of production employees at PT Berkah Bumi Independen. The work environment also has a positive and significant effect on work discipline, while work discipline has a positive and significant effect on employee performance. In addition, work discipline is proven to partially mediate the effect of the work environment on employee performance. These findings indicate that improving employee performance in the wood-processing industry cannot be achieved solely through facility provision and improvement of working conditions, but must also be strengthened through the formation of a disciplined work culture. The company is advised to improve supervision of compliance with personal protective equipment use, clarify standard operating procedures, maintain communication between supervisors and employees, and strengthen discipline development systems so that work environment conditions can have a more optimal impact on performance.

ACKNOWLEDGMENTS

The authors express gratitude to PT Berkah Bumi Independen for providing permission and support during the data collection process, as well as to all production employees who were willing to become research respondents. The authors also express appreciation to the Faculty of Economics and Business, Diponegoro University, for its academic support during the preparation of this research.

REFERENCES

Ahmad, H. R., & Hariasih, M. (2023). Work Factors, Employee Performance, and Job Satisfaction in Manufacturing. Academia Open, 8(1). https://doi.org/10.21070/acopen.8.2023.3583

E-ISSN : 2962-9713
P-ISSN : 2963-928X

Ameen, I., Sathic, J., & Murugeswari, M. (2023). Occupational Safety Issues and Challenges Faced by Workers in the Wood Processing Industry: A Case Study in Shencottai. Res Militaris, 13(4).

Araújo-Vila, N., Toubes, D. R., & Fraiz-Brea, J. A. (2022). The Age Factor in the Analysis of Occupational Risks in the Wood Industry. Healthcare, 10(7), 1355. https://doi.org/10.3390/healthcare10071355

Arbyan, A. C., & Riyanto, S. (2023). The Influence of The Work Environment on Employee Performance. Jurnal Studi Manajemen Organisasi, 19(2), 57–63. https://doi.org/10.14710/jsmo.v19i2.30560

Elfira, R., Oemar, F., & Seswandi, A. (2023). Pengaruh Kepemimpinan Dan Lingkungan Kerja Terhadap Kinerja Yang Dimediasi Oleh Disiplin Kerja Karyawan Pada Universitas Pasir Pengaraian. Jurnal Komunitas Sains Manajemen, 2(2).

Ennin, I. E., Adzaku, F. K., Dodoo, D., & Maalman, R. S.-E. (2024). Effects of mixed hardwoods dust on respiratory function and blood immunoglobulin levels in wood workers. Heliyon, 10(4), e26358. https://doi.org/10.1016/j.heliyon.2024.e26358

Fauziyah, R., Rianto Rahadi, D., & Cheza Isyra Raisya, A. (2024). The Effect of Work Quality, Work Environment on Employee Performance moderated Work Relationship Strategy. Coopetition: Jurnal Ilmiah Manajemen, 15(2), 219–230. https://doi.org/10.32670/coopetition.v15i2.4352

Firman, A. (2022). Implementation of Occupational Safety and Health (K3) for Increasing Employee Productivity. Jurnal Economic Resources, 5(2).

Garengo, P., Sardi, A., & Nudurupati, S. S. (2022). Human resource management (HRM) in the performance measurement and management (PMM) domain: a bibliometric review. International Journal of Productivity and Performance Management, 71(7), 3056–3077. https://doi.org/10.1108/IJPPM-04-2020-0177

Hair, J. F., Hult, G. T. M., Ringle, C. M., Sarstedt, M., Danks, N. P., & Ray, S. (2021). Partial Least Squares Structural Equation Modeling (PLS-SEM) Using R. Springer International Publishing. https://doi.org/10.1007/978-3-030-80519-7

Hasibuan, M. S. P. (2019). Manajemen Sumber Daya Manusia. Bumi Aksara.

Muriuki, M. N., & Wanyoike, R. (2021). Performance appraisal and employee performance. International Academic Journal of Human Resource and Business Administration, 3(10).

Nasrip, M., & Pono, N. F. (2024). The Effect of Physical Work Environment, Personality and Fairness on Employee Performance at PT Sinar Jaya. RIGGS: Journal of Artificial Intelligence and Digital Business, 2(2), 43–49. https://doi.org/10.31004/riggs.v2i2.241

Rabuana, N. K. D. N., & Yanuar, Y. (2023). The Influence of Work Environment and Work Engagement on Employee Performance Mediated by Employee Well-Being. Munaddhomah: Jurnal Manajemen Pendidikan Islam, 4(3), 541–557. https://doi.org/10.31538/munaddhomah.v4i3.523

Rivella, S. N., Hidayah, T., & Supeni, N. (2024). The Effect Of Leadership Style, Work Environment, Work Discipline, Rewards, And Punishment On Employee Performance At Fifgroup Jember. Journal of Economic, Management, Business, and Accounting Research, 2(2).

Robbins, S. P., & Judge, T. A. (2024). Organizational Behavior (19th ed.). Pearson Education.

Sekaran, U., & Bougie, R. (2020). Research Methods for Business: A Skill Building Approach (8th ed.). Wiley.

E-ISSN : 2962-9713
P-ISSN : 2963-928X

Soelistya, D., Desembrianita, E., & Tafrihi, W. (2021). Strong Point Kinerja Karyawan: Motivasi Kunci Implementasi Kompensasi dan Lingkungan Kerja. Nizamia Learning Center.

Sugiyono. (2023). Metode Penelitian Kuantitatif, Kualitatif, dan R&D. Alfabeta.