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The Influence of Transformational Leadership and Work Environment on Employee Performance with Work Engagement as an Intervening Variable

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ABSTRACT

This study investigates the impact of transformational leadership, work environment, and work engagement on employee performance at PT Berau Coal. Using a quantitative approach with Partial Least Squares–Structural Equation Modeling (PLS-SEM) through SmartPLS 4, the study analyzed data collected from employees in the transhipment area, selected through purposive and non-probability sampling methods. The research model included transformational leadership (X1) and work environment (X2) as independent variables, work engagement (Z) as a mediating variable, and employee performance (Y) as the dependent variable. The findings indicate that the work environment significantly and positively influences employee performance, whereas transformational leadership and work engagement, although positive, do not show significant effects. Additionally, work engagement fails to mediate the relationship between transformational leadership and performance as well as between the work environment and performance. These results suggest that the work environment is the most critical factor driving employee performance in this context. The study emphasizes the importance of creating a supportive, safe, and conducive workplace to optimize productivity. The findings provide practical insights for management in developing strategies to enhance employee outcomes, while also contributing to the theoretical understanding of human resource management practices in the mining industry.

Keywords: Transformational Leadership, Work Environment, Work Engagement, Employee Performance

INTRODUCTION

Human resources (HR) are one of the most critical elements in organizational success, as employee performance directly determines the achievement of organizational goals. However, many organizations still face the challenge of declining employee performance, which often stems from fatigue, lack of managerial support, and unfavorable working conditions. Such issues can reduce

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motivation, productivity, and engagement, ultimately impacting operational efficiency and competitiveness.

Previous studies highlight the significant role of leadership and the work environment in shaping employee performance. Transformational leadership, in particular, has been recognized for its ability to inspire, motivate, and empower employees, thereby fostering stronger commitment and productivity. Similarly, a supportive work environment not only enhances efficiency and communication but also reduces stress and workplace risks, contributing to higher employee performance.

In addition to these factors, work engagement has emerged as a key mediating variable linking leadership and the work environment with performance outcomes. Studies by Bakker and Demerouti (2008) and Saks (2006) emphasize that engaged employees—those who are enthusiastic, dedicated, and emotionally invested—tend to deliver superior performance. Despite this, limited research has examined how these three variables interact in high-risk, labor-intensive industries such as coal mining.

This study aims to fill that gap by analyzing the effects of transformational leadership and work environment on employee performance with work engagement as a mediating variable. The research is conducted in the transhipment area of PT Berau Coal, a strategic operational unit characterized by complex tasks, high risks, and a workforce dominated by contract and outsourcing employees. This context provides novelty, as it offers new insights into how leadership, environment, and engagement interact under demanding working conditions, thereby contributing both theoretically and practically to the field of human resource management.

The Organizational Performance Theory developed by Campbell (1993) emerged from the need to clearly distinguish performance from outcomes. Campbell defines performance as actual behaviors displayed by employees at work, while outcomes are consequences of those behaviors that can also be influenced by external factors. This distinction allows organizations to evaluate employee performance more fairly and objectively.

Campbell emphasizes the multidimensional nature of performance, proposing eight core dimensions applicable across most jobs, such as task proficiency, communication, effort, leadership, and discipline. These dimensions serve as a universal framework, adaptable to specific job contexts. Performance, in this theory, is considered a latent construct, observable only through behavioral indicators aligned with these dimensions.

Central to Campbell's model are three proximal determinants of performance: declarative knowledge (what to do), procedural knowledge and skills (how to do it), and motivation (energy to act). Importantly, these determinants interact multiplicatively, meaning that if one is absent, overall performance cannot be fully achieved. Motivation is further broken down into direction, intensity, and persistence, providing a nuanced way to analyze performance challenges.

The theory also acknowledges distal factors such as intelligence, personality, and experience, which indirectly shape performance through their influence on knowledge, skills, and motivation. Additionally, situational constraints—such as poor systems, inadequate resources, or toxic work

environments—can hinder performance regardless of individual capacity. This highlights the complex interaction between individual and organizational factors.

With its high level of generalizability across professions, Campbell's framework has been validated in military, civil service, and private sectors, making it a widely applicable grand theory. Beyond its theoretical contributions, Campbell's model offers practical guidance for designing valid and reliable performance measurement tools, while also aligning with modern concepts such as work engagement and the Job Demands–Resources model.

Transformational leadership is widely regarded as one of the most relevant and comprehensive leadership models in addressing organizational change. Unlike transactional leadership, which emphasizes rewards and supervision, transformational leadership focuses on inspiring and motivating employees to reach their full potential (Bass, 1998). Transformational leaders build commitment, optimism, and work spirit by developing a strong vision and continuously motivating employees (Benjamin & Flynn, 2006). They are proactive, sensitive to employees' needs, and capable of designing strategies that enhance both productivity and employee well-being (Bass, 1999).

Research has shown that transformational leadership positively influences employees' trust, commitment, and willingness to exert greater effort (Avolio, 1999). In the context of PT Berau Coal, this leadership style contributes to higher productivity and operational efficiency, particularly in transshipment areas. Transformational leaders are also described as "breakthrough leaders" capable of driving innovation and major organizational changes through the introduction of new technologies, enhanced safety practices, and a collaborative work culture (Sarros & Butchatsky, 1996).

Bass and Avolio (2000) further conceptualized transformational leadership through four dimensions, known as the "4I": Idealized Influence (leaders as role models), Inspirational Motivation (providing clear goals and encouragement), Intellectual Stimulation (encouraging innovation and problem solving), and Individualized Consideration (addressing employees' individual needs). By implementing these dimensions, transformational leaders encourage employees to exceed expectations, think critically, innovate, and commit themselves to the organization's vision and mission.

The work environment plays a crucial role in influencing an individual's ability to perform tasks effectively. It encompasses not only physical conditions such as lighting, temperature, cleanliness, and workplace safety, but also non-physical aspects including social interaction, communication, and psychological comfort. A supportive environment fosters motivation, comfort, and productivity, while an inadequate one may lead to fatigue, stress, and demotivation.

According to scholars such as Mardiana, Rivai & Sagala, Nitisemito, and Sedarmayanti, the work environment consists of facilities, infrastructure, tools, and methods that shape daily activities and directly affect performance. It can be categorized into internal and external environments. Internal factors include employee competence, job satisfaction, and stress management, which are central to maintaining productivity and well-being. External factors involve broader influences such as labor market conditions, government regulations, industry

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trends, and technological developments, all of which require organizational adaptability.

Key indicators of a conducive work environment include proper lighting, comfortable temperature, minimal noise, suitable color schemes, adequate workspace, and workplace safety. Effective management of these factors creates an atmosphere that supports employee engagement and performance. Ultimately, organizations must balance internal and external elements to build a sustainable work environment that enhances productivity, reduces stress, and strengthens competitiveness.

Work engagement is a crucial concept in organizational and occupational psychology, reflecting employees' positive state of mind toward their work. It is characterized by energy, enthusiasm, dedication, and deep involvement in tasks, indicating the extent to which individuals prioritize their jobs as meaningful parts of their lives (Schaufeli et al., 2002). Beyond individual performance, work engagement is also recognized as a key driver of organizational success (Lockwood, 2007).

According to Schaufeli and Bakker (2010), work engagement consists of three main dimensions: vigor, dedication, and absorption. Vigor reflects high energy and persistence in facing work challenges; dedication represents a sense of pride, inspiration, and meaningfulness in one's job; while absorption describes full concentration and immersion in tasks to the point where time passes unnoticed. These dimensions collectively highlight employees' emotional, cognitive, and physical involvement in their roles.

Research shows that employees with high levels of engagement tend to be more productive, resilient, and committed to their organizations. Work engagement positively correlates with motivation, job satisfaction, and performance, influencing both individual outcomes and organizational effectiveness. Therefore, fostering an engaging work environment through effective human resource management and supportive practices is essential to sustain employee performance and organizational growth.

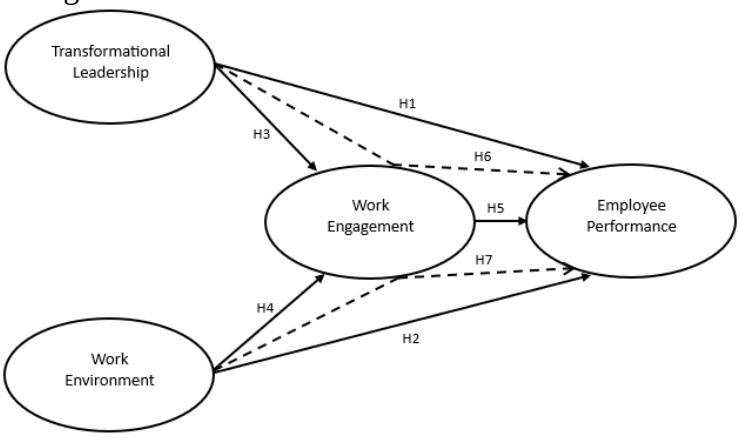

Figure 1. Conceptual Framework of the Research

Hypotheses

H1: Transformational leadership has a positive and significant effect on employee performance.
H2: The work environment has a positive and significant effect on employee performance.
H3: Transformational leadership has a positive and significant effect on work engagement.
H4: The work environment has a positive and significant effect on work engagement.
H5: Work engagement has a positive and significant effect on employee performance.
H6: Transformational leadership has a positive and significant effect on employee performance through work engagement.
H7: The work environment has a positive and significant effect on employee performance through work engagement.

METHOD

The population of this study consists of 52 employees working in the transhipment area of PT Berau Coal, who were considered relevant to the research variables of transformational leadership, work environment, and employee performance. Given the relatively small number of employees, the study employed a saturated sampling technique, a type of non-probability sampling in which the entire population is included as the research sample. This approach was chosen to ensure accuracy and avoid bias in representing the actual conditions of all employees under study.

Data collection was conducted through a combination of interviews, literature review, and questionnaires. Interviews were used to obtain in-depth qualitative insights into employees' perceptions, while literature reviews provided theoretical foundations for the research framework. Questionnaires, distributed to all 52 employees, were designed to measure perceptions of the studied variables using a Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The integration of these methods allowed the researcher to gather both qualitative and quantitative data, ensuring comprehensive findings on the influence of transformational leadership and work environment on employee performance, with work engagement as a mediating variable.

In this study, data analysis was conducted using both descriptive and inferential statistics. Descriptive statistics were employed to provide an initial overview of the data, including the characteristics of respondents and the distribution of research variables. This was done through tables, charts, and frequency distributions, offering a clear profile of the sample before proceeding to further analysis.

Inferential statistics were then applied to test hypotheses and generalize findings from the sample to the population. Structural Equation Modeling (SEM) was chosen as the main inferential technique because it allows for the examination of complex relationships between latent and observed variables, including direct and indirect effects. To carry out this analysis, the study used SmartPLS 4, a software based on the Partial Least Squares (PLS) method, which is particularly

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suitable for small sample sizes and data that may not meet classical statistical assumptions.

The measurement model, or outer model, was tested to assess the validity and reliability of the constructs. Convergent validity was evaluated using Average Variance Extracted (AVE) values greater than 0.5, while discriminant validity was examined through cross-loading analysis. Reliability was measured using composite reliability and Cronbach's alpha, with values above 0.7 considered acceptable, although 0.6 could still be tolerated in exploratory research.

The structural model, or inner model, was then tested to evaluate the relationships between latent variables. This was assessed through path coefficients, which indicate the strength and significance of relationships, and R-square (R^2) values, which measure the explanatory power of the model. R^2 values of 0.67, 0.33, and 0.19 were interpreted as strong, moderate, and weak, respectively. Model fit was also examined using predictive relevance (Q^2).

Finally, hypothesis testing was conducted using t-statistics and p-values generated by SmartPLS. At a 5% significance level, hypotheses were accepted if the t-value exceeded 1.96 or if the p-value was below 0.05. This approach ensured a 95% confidence level in accepting or rejecting hypotheses, thereby providing robust conclusions about the effects of transformational leadership, work environment, and work engagement on employee performance.

Table 1. Conceptual Framework of the Research

Variable	Operational Definition	Indicators
Transformational Leadership	Transformational leadership is a leadership style in which a leader inspires, motivates, and guides employees to achieve the organizational vision through positive influence and empowering approaches. Transformational leaders focus on individual development, encourage innovation, and foster a supportive work environment that drives high performance.	a. Inspirational Vision b. Motivation c. Idealized Influence d. Intellectual Stimulation e. Individualized Consideration
Work Environment	The work environment encompasses all aspects surrounding employees that can influence how they perform their tasks. It includes physical, social, and psychological factors that provide comfort, safety, and motivation in accomplishing work responsibilities.	a. Work Facilities b. Physical Conditions c. Social Relations d. Safety and Security e. Psychological Conditions
Work Engagement	Work engagement refers to the level of emotional, mental, and physical commitment employees demonstrate toward their work. Highly engaged employees tend to be enthusiastic, dedicated, and focused in performing their tasks.	a. Vigor b. Dedication c. Absorption

Employee Performance	Employee performance is the result achieved by an employee in carrying out tasks and responsibilities in accordance with the standards and goals set by the organization. Performance serves as a measure of an individual's success in contributing to the company.	a. Quality of Work b. Quantity of Work c. Timeliness d. Responsibility

RESULTS AND DISCUSSION

According to Chin (1998), as cited in Imam Ghozali (2006), in the Partial Least Squares (PLS) approach, the significance testing of parameters does not require strict parametric methods because PLS does not assume a specific data distribution in parameter estimation. The measurement model (outer model) using reflective indicators is evaluated through two main aspects, namely convergent validity and discriminant validity for each indicator. The results of the outer model testing for the structural analysis model are presented as follows:

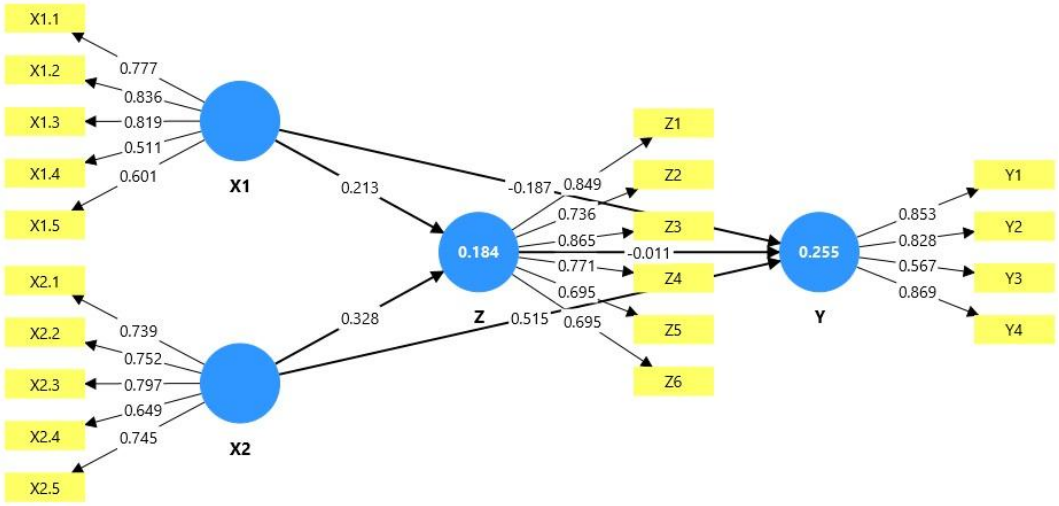

Figure 2. Results of the Outer Model Testing
Source: Primary data processed in SmartPLS 4 (2025)

The results of the outer model testing presented in Figure 2 show that all indicator items of the constructs used have loading factor (Original Sample) values above 0.50. This indicates that each indicator is able to represent its construct well and meets the criteria for convergent validity. Thus, all indicators in this model can be considered valid and appropriate for further analysis.

Convergent Validity

Convergent validity of the measurement model with reflective indicators is determined based on the correlation between item scores/component scores estimated using SmartPLS software. Hair et al. (2014), as a primary reference in PLS-SEM, state that indicators with loadings between 0.4–0.7 may be retained if their overall contribution to model reliability is acceptable.

Table 2. Initial Outer Loading Results

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Indicator	Value	Indicator	Value	Indicator	Value	Indicatorr	Value
X1.1	0.777	X2.1	0.739	Z1	0.849	Y1	0.853
X1.2	0.836	X2.2	0.752	Z2	0.736	Y2	0.828
X1.3	0.819	X2.3	0.797	Z3	0.865	Y3	0.567
X1.4	0.511	X2.4	0.649	Z4	0.771	Y4	0.869
X1.5	0.601	X2.5	0.745	Z5	0.695		
				Z6	0.695		

Source: Primary data processed in SmartPLS 4 (2025)

Based on the results shown in Table 2, all indicators have loading factor values above 0.50. Therefore, it can be concluded that all indicators have passed the convergent validity test.

Discriminant Validity

Discriminant validity occurs when two different instruments measuring two constructs that are theoretically unrelated produce scores that are indeed uncorrelated. The results of the discriminant validity test are presented in Table 3.

Table 3. Cross Loading Results

Variable	X1	X2	Y	Z
X1.1	**0.777**	0.205	-0.069	0.258
X1.2	**0.836**	0.236	-0.018	0.217
X1.3	**0.819**	0.153	-0.118	0.248
X1.4	**0.511**	0.086	0.236	0.082
X1.5	**0.601**	0.006	-0.017	0.091
X2.1	0.121	**0.739**	0.287	0.242
X2.2	0.193	**0.752**	0.284	0.311
X2.3	0.205	**0.797**	0.530	0.312
X2.4	-0.018	**0.649**	0.239	0.156
X2.5	0.242	**0.745**	0.291	0.322
Y1	-0.116	0.298	**0.853**	0.109
Y2	-0.005	0.562	**0.828**	0.128
Y3	-0.138	0.097	**0.567**	-0.014
Y4	-0.071	0.286	**0.869**	0.118
Z1	0.264	0.336	0.065	**0.849**
Z2	0.190	0.143	0.040	**0.736**
Z3	0.277	0.402	0.145	**0.865**
Z4	0.167	0.329	0.216	**0.771**

Z5	0.203	0.200	0.027	**0.695**
Z6	0.203	0.200	0.027	**0.695**

Source: Primary data processed in SmartPLS 4 (2025)

Based on the table, all items are valid in terms of discriminant validity as indicated by the cross-loading values. An item is considered valid if its correlation with its own variable is higher than its correlation with other variables. For example, item X1.4 shows the highest correlation value of 0.511 with transformational leadership, while its correlations with other variables are lower than 0.511.

Average Variance Extracted (AVE)

Average Variance Extracted (AVE) is a further stage after the convergent validity test. A research variable is considered to have passed the AVE test if its value is above 0.50. Based on the results of the analysis, the AVE values for each research variable are presented as follows.

Table 4. Average Variance Extracted (AVE) Results

Variable	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
X1	0.800	0.821	0.839	0.519
X2	0.795	0.829	0.856	0.544
Y	0.812	0.934	0.866	0.623
Z	0.871	0.904	0.898	0.595

Source: Primary data processed in SmartPLS 4 (2025)

According to Table 4, the original sample values of the Average Variance Extracted (AVE) are all greater than 0.50, indicating that all variables are valid and have met the AVE criteria. Since the requirements for convergent validity, discriminant validity, and AVE have been fulfilled, the research variable items are deemed appropriate for use in the subsequent stages of the study.

Reliability

The reliability of the block indicators measuring a construct can be evaluated using the output generated by PLS through the composite reliability table.

Table 5. Composite Reliability Results

Variable	Composite reliability (rho_a)	Composite reliability (rho_c)	Keterangnan
X1	0.821	0.839	Reliabel
X2	0.829	0.856	Reliabel

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Y	0.934	0.866	Reliabel
Z	0.904	0.898	Reliabel

Source: Primary data processed in SmartPLS 4 (2025)

Table 5 shows that the composite reliability values are all greater than 0.70, indicating that all variables in this study are reliable. These results demonstrate a high level of consistency and stability of the instruments used. In other words, it can be concluded that the reliability of the instruments is fulfilled.

Inner Model Testing Results

The testing of the inner model, or structural model, was conducted to examine the relationships between constructs as hypothesized in the study. The results of the inner model testing for this research are as follows.

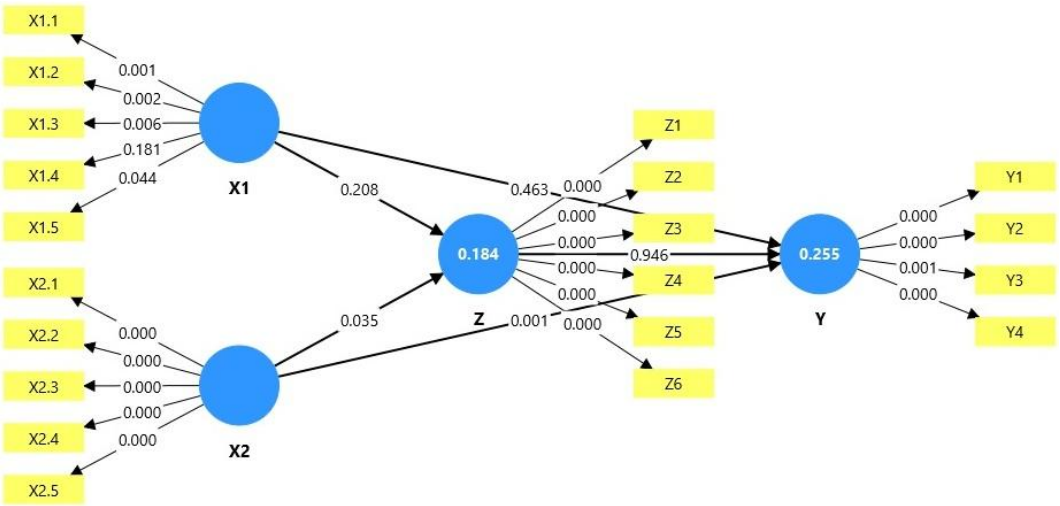

Figure 3. Path Diagram/ Bootstrapping
Source: Primary data processed in SmartPLS 4 (2025)

R-Square (R^2) Value

R-Square indicates the percentage of variance in the dependent variable that can be explained by the independent variables in the model. The higher the R-Square, the better the model explains the phenomenon. However, in social sciences, moderate to low R-Square values are often acceptable due to the complexity of human-related variables. The R-Square values for this study are as follows:

Table 6. R-Square Values

Variable	R-square	R-square adjusted
Y	0.255	0.208
Z	0.184	0.151

Source: Primary data processed in SmartPLS 4 (2025)

Based on data processing using SmartPLS, the R-Square (R^2) value for the employee performance variable (Y) is 0.255, with an adjusted R-Square value of

0.208. This indicates that 25.5% of the variance in employee performance can be explained by transformational leadership, work environment, and work engagement as a mediating variable, while the remaining 74.5% is influenced by other factors outside this research model. According to Chin (1998), an R-Square value of 0.255 falls within the moderate category, meaning that the model is reasonably good in explaining employee performance in the research context.

Meanwhile, the R-Square (R^2) value for the work engagement variable (Z) is 0.184, with an adjusted R-Square of 0.151. This means that 18.4% of the variance in employee work engagement is explained by transformational leadership and work environment, while the remaining 81.6% is influenced by other variables not examined in this study. According to Chin's (1998) criteria, an R-Square of 0.184 is categorized as weak, indicating that although transformational leadership and work environment contribute to work engagement, there are still many external factors that influence employees' level of engagement.

Overall, these results indicate that the developed research model is able to explain part of the dependent variables, particularly employee performance, although with a moderate level of explanation for performance and a weak level for work engagement. Nevertheless, these values are still acceptable and provide a sufficient basis to understand the influence of the studied variables within this research context.

Path Coefficient Test Results (Bootstrapping)

The Path Coefficient (Bootstrapping) test was conducted to analyze the magnitude and direction of relationships between independent variables and dependent variables, including the role of the mediating variable in the research model. This analysis employed the bootstrapping approach in SmartPLS to obtain key values, namely Original Sample (O), T-statistic, and P-value. The Original Sample value shows the direction and strength of the influence between variables, whether positive or negative. The T-statistic value measures the statistical significance of the relationship, while the P-value indicates the probability of error in hypothesis testing. A relationship is considered significant if the T-statistic is greater than 1.96 or the P-value is less than 0.05, both of which refer to a 5% significance level.

Table 7. P-Value of Direct Effects

Variable	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T statistics (|O/STDEV|)	P Values
X1 > Y	-0.187	-0.154	0.255	0.734	0.463
X1 > Z	0.213	0.238	0.169	1.259	0.208
X2 > Y	0.515	0.508	0.151	3.408	0.001
X2 > Z	0.328	0.344	0.156	2.105	0.035
Z > Y	-0.011	-0.01	0.156	0.068	0.946

Source: Primary data processed in SmartPLS 4 (2025)

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Based on the analysis results, the work environment variable (X2) has a positive and significant effect on performance (Y), with an Original Sample value of 0.515, a T-statistic of 3.408 (>1.96), and a P-value of 0.001 (<0.05). Additionally, the work environment also has a positive and significant effect on work engagement (Z), with an Original Sample of 0.328, a T-statistic of 2.105, and a P-value of 0.035. This demonstrates that a supportive work environment can improve both employee performance and work engagement.

Conversely, the transformational leadership variable (X1) does not show a significant effect, either on performance (Y) or on work engagement (Z). The effect of X1 on Y is reflected by an Original Sample of -0.187, a T-statistic of 0.734, and a P-value of 0.463, while the effect of X1 on Z is indicated by an Original Sample of 0.213, a T-statistic of 1.259, and a P-value of 0.208. Both values fall below the threshold for statistical significance. Similarly, work engagement (Z) as a mediating variable does not show a significant effect on performance (Y), with an Original Sample of -0.011, a T-statistic of 0.068, and a P-value of 0.946. The direction of influence is even negative, although very weak and statistically insignificant.

Therefore, it can be concluded that out of the five tested paths, only two demonstrate significant effects, namely the relationship between work environment and both work engagement and performance. Meanwhile, the effects of transformational leadership and work engagement on performance are not statistically significant. These findings indicate that in this research context, the work environment is the most dominant factor influencing employee performance, while transformational leadership and work engagement do not play a statistically significant role.

Mediation Test Results

The indirect effect analysis was conducted to determine whether the mediating variable, work engagement (Z), could mediate the relationship between independent and dependent variables. In this study, transformational leadership (X1) and work environment (X2) serve as independent variables, while employee performance (Y) is the dependent variable, with work engagement (Z) as the mediator.

Table 8. P-Value of Indirect Effects

Variable	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T statistics (|O/STDEV|)	P Values
X1 > Z > Y	-0.002	-0.008	0.047	0.048	0.962
X2 > Z > Y	-0.003	0.002	0.059	0.059	0.953

Source: Primary data processed in SmartPLS 4 (2025)

Based on the results of the indirect effect (mediation) test using the bootstrapping procedure in the research model, the indirect effect of transformational leadership (X1) on performance (Y) through work engagement (Z) produced an Original Sample of -0.002, a T-statistic of 0.048, and a P-value of 0.962. Similarly, the indirect effect of work environment (X2) on performance (Y)

through work engagement (Z) yielded an Original Sample of -0.003, a T-statistic of 0.059, and a P-value of 0.953.

Since all T-statistic values are far below the threshold of 1.96 and the P-values are much greater than the significance level of 0.05, it can be concluded that both mediation relationships are statistically insignificant. This means that work engagement does not mediate the influence of either transformational leadership or work environment on performance. Substantively, this indicates that although work engagement may have theoretical contributions in the relationships among variables, in the empirical data of this study, it does not act as a significant mediator in improving employee performance.

Hypothesis Testing

H1: Transformational leadership has a positive and significant effect on employee performance.

Based on the hypothesis testing results, the effect of transformational leadership (X1) on employee performance (Y) yielded a T-statistic value of 0.734 and a P-value of 0.463. Since the T-statistic value is lower than 1.96 and the P-value is greater than 0.05, it can be concluded that hypothesis H1 is rejected, meaning that transformational leadership does not have a significant effect on employee performance.

H2: Work environment has a positive and significant effect on employee performance.

The effect of work environment (X2) on employee performance (Y) produced a T-statistic value of 3.408 and a P-value of 0.001. As the T-statistic value is higher than 1.96 and the P-value is less than 0.05, hypothesis H2 is accepted, indicating that the work environment has a significant effect on employee performance.

H3: Transformational leadership has a positive and significant effect on work engagement.

The effect of transformational leadership (X1) on work engagement (Z) resulted in a T-statistic value of 1.259 and a P-value of 0.208. Since the T-statistic is below 1.96 and the P-value exceeds 0.05, hypothesis H3 is rejected, which means that transformational leadership does not have a significant effect on work engagement.

H4: Work environment has a positive and significant effect on work engagement.

The effect of work environment (X2) on work engagement (Z) generated a T-statistic value of 2.105 and a P-value of 0.035. Given that the T-statistic exceeds 1.96 and the P-value is below 0.05, hypothesis H4 is accepted, implying that the work environment significantly affects work engagement.

H5: Work engagement has a positive and significant effect on employee performance.

The effect of work engagement (Z) on employee performance (Y) showed a T-statistic value of 0.068 and a P-value of 0.946. Since the T-statistic is lower than 1.96 and the P-value is greater than 0.05, hypothesis H5 is rejected, indicating that work engagement does not significantly affect employee performance.

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H6: Transformational leadership has a positive and significant effect on employee performance through work engagement.

The mediating effect of work engagement (Z) on the relationship between transformational leadership (X1) and employee performance (Y) yielded a T-statistic of 0.048 and a P-value of 0.962. As the T-statistic is below 1.96 and the P-value exceeds 0.05, hypothesis H6 is rejected, meaning that transformational leadership does not significantly affect employee performance through work engagement.

H7: Work environment has a positive and significant effect on employee performance through work engagement.

The mediating effect of work engagement (Z) on the relationship between work environment (X2) and employee performance (Y) showed a T-statistic of 0.059 and a P-value of 0.953. Because the T-statistic is below 1.96 and the P-value is greater than 0.05, hypothesis H7 is rejected, indicating that the work environment does not significantly affect employee performance through work engagement.

Discussion of Research Results

1. The Effect of Transformational Leadership on Employee Performance

The hypothesis testing results (H1) demonstrated that transformational leadership had no significant effect on employee performance. The analysis produced a P-value of 0.463 (>0.05), a T-statistic of 0.734, and a path coefficient (original sample) of -0.187. These findings indicate that the effect of transformational leadership on employee performance is negative and statistically insignificant.

Therefore, hypothesis H1 is rejected, meaning that transformational leadership does not significantly influence employee performance. In the context of this study, transformational leadership has not been able to directly enhance employee performance. This may occur because, although leaders possess vision and inspiration, employees may not necessarily respond with improved performance unless supported by other factors such as motivation, recognition, or a conducive work environment.

This result contrasts with prior research, such as Rivai (2020), which found transformational leadership to have a significant impact on employee performance. Bass (1998) also emphasized that transformational leaders who provide inspiration and individualized consideration can enhance employees' motivation and performance. The inconsistency suggests that the effect of leadership may be transmitted through other variables (e.g., mediation) or may differ due to organizational characteristics. Descriptive analysis also showed that most respondents rated transformational leadership as moderate, but quantitatively, employees' perceptions of leadership were not strong enough to directly improve performance. This highlights the need for management to reassess how transformational leadership is implemented to yield stronger effects on employee outcomes.

2. The Effect of Work Environment on Employee Performance

The hypothesis testing results (H2) revealed that the work environment (X2) had a significant effect on employee performance (Y), with a T-statistic of 3.408

and a P-value of 0.001. Since the T-statistic exceeds 1.96 and the P-value is below 0.05, H2 is accepted, confirming that the work environment significantly affects employee performance.

This finding suggests that the better the work environment perceived by employees, the higher their performance. A safe, comfortable, and supportive work environment plays an essential role in improving employee effectiveness and efficiency. This is in line with Sedarmayanti (2011), who argued that a good work environment enables optimal, safe, and comfortable operations, thereby helping employees achieve maximum results.

The results are also supported by Halim & Brahmasari (2025) and Fitria & Gunawan (2025), who found a positive and significant influence of the work environment on employee performance. A conducive environment—such as harmonious workplace relationships, adequate lighting and ventilation, and supportive facilities—boosts motivation and morale, which in turn enhances performance.

3. The Effect of Transformational Leadership on Work Engagement

The hypothesis testing results (H3) showed that transformational leadership had no significant effect on work engagement, with a T-statistic of 1.259 and a P-value of 0.208. Since the values do not meet the required thresholds, H3 is rejected. This indicates that, in this research context, transformational leadership has not been able to foster optimal employee engagement.

According to Bass (1998), transformational leaders who inspire, motivate, and provide individual attention should enhance enthusiasm and work involvement. Similarly, Arifin & Jannah (2023) found that transformational leadership significantly affects work engagement. The inconsistency may be due to organizational context or other factors such as work culture or ineffective communication between management levels.

4. The Effect of Work Environment on Work Engagement

The hypothesis testing results (H4) confirmed that the work environment significantly influences work engagement. The analysis yielded a T-statistic of 2.105 and a P-value of 0.035, which meet the criteria for significance. Thus, H4 is accepted.

This result shows that the better the work environment, the higher the employees' engagement. A supportive environment creates comfort and safety, ultimately enhancing employees' attachment to their work. This finding aligns with Bakker and Leiter (2010), who stated that physically and psychologically supportive environments can enhance the dimensions of work engagement, namely vigor, dedication, and absorption. The result is also reinforced by Muchtadin (2023), who found a positive correlation between a good work environment and higher employee involvement in daily tasks.

5. The Effect of Work Engagement on Employee Performance

The hypothesis testing results (H5) indicated that work engagement did not significantly affect employee performance. The T-statistic was 0.068 and the P-value was 0.946, both far from the thresholds for significance. Thus, H5 is rejected.

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This finding is somewhat surprising, as Schaufeli & Bakker (2010) emphasized that highly engaged employees are more likely to perform better. The lack of significance may be due to misalignment between expectations and actual job conditions, workload imbalances, or insufficient support from leaders and peers, preventing engagement from translating into higher performance. This result contradicts Abram et al. (2022), who found that work engagement significantly improves job performance.

6. The Effect of Transformational Leadership on Performance through Work Engagement

The hypothesis testing results (H6) showed that transformational leadership did not significantly influence performance through work engagement, with a T-statistic of 0.048 and a P-value of 0.962. Since these values are not significant, H6 is rejected.

This indicates that although transformational leadership theoretically fosters engagement, which in turn enhances performance, this pathway was not empirically supported in this study. The likely reason is that work engagement itself did not significantly affect performance, making it an ineffective mediator. This contradicts the mediation model proposed by Yohana et al. (2024), which highlighted the mediating role of work engagement between leadership and performance.

7. The Effect of Work Environment on Performance through Work Engagement

The hypothesis testing results (H7) showed that the indirect effect of work environment on performance through work engagement was not significant, with a T-statistic of 0.059 and a P-value of 0.953. Thus, H7 is rejected.

This means that work engagement failed to mediate the relationship between work environment and performance in this study. Although the work environment had direct significant effects on both engagement and performance, employee engagement was not an effective linking mechanism. This contrasts with Lussa et al. (2023), who found that work engagement acts as a strong mediator between organizational factors (e.g., work environment) and job outcomes (e.g., performance).

CONCLUSION

Based on the findings of this study, transformational leadership was found to have no significant direct effect on employee performance at PT. Berau Coal. Similarly, transformational leadership did not significantly influence work engagement, and work engagement itself showed no significant impact on employee performance. Moreover, work engagement was not proven to mediate the relationship between transformational leadership and performance. These results suggest that leadership alone, without the support of other factors such as motivation or organizational commitment, may not be sufficient to enhance performance outcomes.

In contrast, the work environment demonstrated a positive and significant effect both on employee performance and work engagement. A supportive, safe, and comfortable workplace was shown to increase not only employees' level of involvement in their work but also their overall performance. This highlights the

critical role of the organizational environment as a key factor in improving productivity and engagement.

Finally, the study confirmed that work engagement did not mediate the effect of the work environment on employee performance. Although employees who experience a good work environment tend to feel more engaged, this engagement does not necessarily translate into measurable performance improvements. These findings emphasize that while the work environment has a direct impact on performance, the mediating role of work engagement remains statistically insignificant.

REFERENCES

Abram, C. T., Tatimu, V., & Rumawas, W. (2022). Pengaruh Penempatan dan Keterlibatan Kerja Terhadap Kinerja Karyawan pada Bank Rakyat Indonesia Unit Siau. Productivity, 3(3), 240-245. https://ejournal.unsrat.ac.id/v3/ index.php/productivity/article/view/40325

Arifin, A. S., & Jannah, S. N. (2023). Pengaruh Kepemimpinan Transformasional Terhadap Keterlibatan Kerja (Work Engagement) Guru Selama Pelaksanaan Pembelajaran Tatap Muka Terbatas di SDN Karangmojo Yogyakarta. Indonesian Journal of Elementary Education and Teaching Innovation, 2(1), 1. https://doi.org/10.21927/ijeeti.2023.2(1).1-9

Avolio, B. J. (1999). Full leadership development: Building the vital forces in organizations. Thousand Oaks, CA: Sage.

Bakker, A. B., & Demerouti, E. (2008). Towards a model of work engagement. Career development international, 13(3), 209-223. https://doi.org/10.1108/13620430810870476

Bakker, A. B., & Leiter, M. P. (2010). Work engagement: A handbook of essential theory and research. Psychology Press.

Bass, B. M. (1998). Transformational Leadership: Industrial, Military, and Educational Impact. Mahwah, NJ: Lawrence Erlbaum Associates.

Bass, B. M. (1999) The ethics of transformational leadership. Working Papers Academy of Leadership Press. University of Maryland.

Bass, B. M., & Avolio, B. J. (2000). MLQ: Multifactor Leadership Questionnaire. Redwood City, CA: Mind Garden.

Benjamin, L., & Flynn, F. J. (2006). Leadership style and regulatory mode: Value from fit? Organizational Behavior and Human Decision Processes, 100(2), 216–230.

Campbell, J. P., McCloy, R. A., Oppler, S. H., & Sager, C. E. (1993). A theory of performance. In E. Schmitt, W. C. Borman, & Associates (Eds.), Personnel selection in organizations (pp. 35–70). San Francisco: Jossey-Bass

Chin, W. W. (1998). The partial least squares approach to structural equation modeling. Modern methods for business research, 295(2), 295-336.

Fitria, L., & Gunawan, K. H. (2025). Pengaruh Rekrutmen, Pelatihan, Dan Lingkungan Kerja Terhadap Kinerja Karyawan Pada Bagian Marketing Pada PT. Federal International Finance Surabaya Cabang Rajawali. Neraca: Jurnal Ekonomi, Manajemen dan Akuntansi, 3(4), 889-894. https://jurnal.researchideas.org/index.php/neraca/article/view/370

ISSN. 0216-6488 (Print), 2775-7935 (Online)

Ghozali, I. (2006). Aplikasi analisis multivariate dengan program SPSS. Semarang: Badan Penerbit Universitas Diponegoro.

Hair, J. F., Hult, G. T. M., Ringle, C., & Sarstedt, M. (2014). A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM). Sage Publications.

Halim, T. A., & Brahmasari, I. A. (2025). Pengaruh Self Efficacy, Pelatihan Dan Lingkungan Kerja Terhadap Kinerja Karyawan Pada Dinas Kelautan Dan Perikanan Provinsi Jawa Timur. Jurnal Rumpun Manajemen dan Ekonomi, 2(1), 415-427. https://doi.org/10.61722/jrme.v2i1.3886

Lockwood, N. R. (2007). Leveraging employee engagement for competitive advantage: HR's strategic role. HRMagazine, 52(3), 1-11.

Lussa, M. F., Sudiro, A., & Hapsari, R. D. V. (2023). The effect of work motivation and work environment on employee performance through work engagement. International Journal of Research in Business and Social Science (2147-4478), 12(9), 134-143. https://doi.org/10.20525/ijrbs.v12i9.3063

Muchtadin. (2023). Pengaruh Lingkungan Kerja Terhadap Work Engagement Melalui Motivasi Intrinsik Dosen. Journal of Accounting, Management and Economics Research (JAMER), 2 (1), 11-22. https://doi.org/10.33476/jamer. v2i1.48

Rivai, A. (2020). Pengaruh kepemimpinan transformasional dan budaya organisasi terhadap kinerja karyawan. Maneggio: Jurnal Ilmiah Magister Manajemen, 3(2), 213-223. https://doi.org/10.30596/maneggio.v3i2.5291

Saks, A. M. (2006). Antecedents and consequences of employee engagement. Journal of managerial psychology, 21(7), 600-619. https://doi.org/ 10.1108/02683940610690169

Sarros, J. C., & Butchatsky, O. (1996). Leadership. Australia's Top CEOs: Finding Out What Makes Them the Best. Sydney: Harper Business.

Schaufeli, W. B., & Bakker, A. B. (2010). Defining and Measuring Work Engagement: Bringing Clarity to the Concept. Dalam A. B. Bakker, & M. P. Leiter (Eds.), Work Engagement: A Handbook of Essential Theory and Research (hlm. 10-24). New York: Psychology Press.

Schaufeli, W. B., Salanova, M., González-Romá, V., & Bakker, A. B. (2002). The measurement of engagement and burnout: A two sample confirmatory factor analytic approach. Journal of Happiness Studies, 3(1), 71-92. https://doi.org/ 10.1023/A:1015630930326

Sedarmayanti. (2011). Tata Kerja dan Produktivitas Kerja: Suatu Tinjauan dari Aspek Ergonomi atau Kaitan antara Manusia dengan Lingkungan Kerjanya. Bandung: CV Mandar Maju.

Yohana, Y., Ridho, F., Malik, M., Dasman, S., & Daspar, D. (2024). The Influence of Transformational Leadership Style on Employee Performance with Work Engagement as Mediation. Review: Journal of Multidisciplinary in Social Sciences, 1(02), 38-45. https://doi.org/10.59422/rjmss.v1i02.254