

THE INFLUENCE OF PSYCHOLOGICAL CAPITAL AND TRANSFORMATIONAL LEADERSHIP STYLE ON EMPLOYEE PERFORMANCE (A STUDY ON EMPLOYEES OF PT BIO FARMA (PERSERO))

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ABSTRACT

Introduction: This study analyzes the influence of Psychological Capital and Transformational Leadership Style on Employee Performance at PT Bio Farma (Persero), a state-owned pharmaceutical enterprise.

Methods: Using a quantitative survey of 300 employees, data were tested for validity, reliability, and classical assumptions before being analyzed with multiple regression.

Results: The results show that both Psychological Capital and Transformational Leadership have positive and significant effects on employee performance, jointly explaining 59.2% of its variance. Psychological Capital contributes through self-efficacy, hope, optimism, and resilience, while transformational leadership strengthens performance by inspiring, stimulating, and personally supporting employees. These findings highlight the importance of integrating psychological empowerment and effective leadership to build a productive and adaptive work environment. The managerial implication is that PT Bio Farma should implement training programs to enhance psychological capital and develop transformational leadership skills to sustain employee performance and organizational competitiveness.

INTRODUCTION

The pharmaceutical industry is a strategic sector that plays a crucial role in improving the quality of life through the development, production, and distribution of health products (Britannica, 2025). In Indonesia, PT Bio Farma (Persero) holds a central position as a vaccine and life science manufacturer with over a century of history and a vital role in maintaining national health resilience. The company's success depends not only on technological innovation and financial capital but also on the quality of its human resources and adaptive leadership.

In the context of global competition and complex workplace dynamics, employee performance becomes a critical determinant of organizational success. One of the main challenges faced by PT Bio Farma is maintaining and improving employee performance amid organizational changes, high workloads, and consistent quality demands. Internal data shows uneven performance across divisions, with varying achievement of Key Performance Indicators (KPIs) among units. This indicates that non-technical factors such as psychological aspects and leadership style are essential subjects for further investigation.

Previous studies have shown mixed results regarding these variables. Research by Luthans et al. (2007), Baig et al. (2021), and Jonathan & Erdiansyah (2021) confirmed that Psychological Capital significantly improves performance through optimism, resilience, and self-efficacy. Similarly, Aditama et al. (2022), Fauzan et al. (2023), and Djuraidi & Laily (2025) found that transformational leadership has a positive and significant impact on employee performance through inspiration and individualized consideration. However, not all findings are consistent. Triccia & Satiningsih (2020) and Satrio et al. (2022) revealed that Psychological Capital does not always produce strong effects when mediated by other factors, while Rohmah & Yuniawan (2022) and Rozak (2024) found that transformational leadership's impact may weaken when workload and stress dominate. These differing outcomes indicate a research gap and the need for further empirical testing in the context of Indonesian state-owned enterprises, especially in the pharmaceutical industry.

Based on this background, this study aims to examine how Psychological Capital and Transformational Leadership Style affect Employee Performance at PT Bio Farma (Persero). The research adopts a quantitative approach using multiple linear regression analysis. The findings are expected to provide both academic contributions and practical recommendations for the company's management in designing performance improvement strategies based on psychological empowerment and effective leadership.

LITERATURE REVIEW

Management

Management is the process of planning, organizing, directing, and controlling to achieve organizational goals effectively and efficiently by utilizing available resources (Syahputra & Aslami, 2023). According to Terry in Syahputra & Aslami (2023), management also involves achieving objectives through cooperation with others. In modern organizations such as pharmaceutical companies, management plays a strategic role in human resource management, production processes, and decision-making. Therefore, understanding management is a fundamental basis in analyzing the relationship between psychological capital, transformational leadership style, and employee performance at PT Bio Farma (Persero).

Human Resource Management

Human Resource Management (HRM) is a strategic approach to managing the workforce effectively and efficiently to support the achievement of organizational goals (Hasibuan, 2020; Simamora, 2004; Rizai, 2004; Cusway, 1996 in Abidin, 2022). HRM includes planning, organizing, developing, compensating, and controlling work relations between the organization and its employees. Beyond administrative functions, HRM also considers employee well-being and their contribution to the sustainability of the organization and society. This concept serves as a vital foundation in understanding the factors that influence employee performance at PT Bio Farma (Persero).

Psychological Capital

Psychological Capital (PsyCap) is a positive psychological state that can be developed and is comprised of four core components: self-efficacy, hope, optimism, and resilience (Luthans et al., 2007). Self-efficacy refers to an individual's confidence in successfully accomplishing challenging tasks. Hope reflects the energy directed toward goals and the ability to find alternative pathways when faced with obstacles. Optimism pertains to a positive outlook toward future success, while resilience is the capacity to recover and adapt in the face of adversity. These four dimensions are interrelated and form a cohesive construct that contributes to improved individual performance in the workplace. PsyCap has been shown to enhance motivation, creativity, and mental resilience, making it a significant factor in human performance research at PT Bio Farma (Persero).

Transformational Leadership

Transformational leadership is a leadership approach that focuses on inspiring, motivating, and holistically developing the potential of subordinates. Transformational leaders not only emphasize achieving organizational goals but also foster emotional connections and shared values that promote positive organizational change (Yukl, 2010; Robbins & Judge, 2008 in Iqbal, 2021). According to Bass and Avolio (1990), this leadership style consists of four key dimensions known as the Four I's: charisma, inspiration, intellectual stimulation, and individualized consideration. Charisma reflects the leader's role model behavior and integrity, generating respect and trust from subordinates. Inspiration relates to the leader's ability to articulate a clear vision and energize the team. Intellectual stimulation involves encouraging critical and creative thinking among team members, while individualized consideration reflects the leader's personal attention to the needs and development of each individual. These dimensions collectively form a leadership behavior that fosters positive change, enhances motivation, and strengthens employee loyalty in organizations like PT Bio Farma (Persero).

Employee Performance

Employee performance is a reflection of work behavior and the outcomes achieved by individuals in fulfilling their responsibilities according to organizational standards. According to Simamora et al. (2022), performance reflects a mental attitude and ongoing effort to improve work quality over time. Performance appraisal is understood as a systematic process of evaluating an employee's work outcomes against established standards (Dessler, 2015; Mathis & Jackson, 2006 in Putri et al., 2025). The main objectives of performance appraisal are to assess individual achievements, support managerial decision-making, and enhance work effectiveness and productivity (Silaen et al., 2021). Factors influencing performance include ability, motivation, discipline, work environment, leadership style, job satisfaction, and compensation systems. According to Hasibuan (2020), the main dimensions of employee performance include work quantity, work quality, cooperation, responsibility, and initiative, each measured through indicators such as speed, accuracy, collaboration, accountability, and proactivity. A comprehensive understanding of these aspects is essential in analyzing the relationship between psychological conditions, leadership, and individual performance in organizations such as PT Bio Farma (Persero).

RESEARCH METHODS

This study employs a quantitative approach with descriptive and explanatory methods to examine the influence of Psychological Capital and Transformational Leadership Style on Employee Performance at PT Bio Farma (Persero), a state-owned pharmaceutical enterprise with a complex organizational structure and a strong focus on human resource development. The object of the research is the permanent employees at the BOD-4 level, with a population of 1,201 employees and a sample of 300 respondents, determined using the Slovin formula with a 5% margin of error and simple random sampling technique.

Data were collected through a closed-ended questionnaire using a five-point ordinal scale, designed based on the operational indicators of each variable. Validity testing was conducted using Pearson Product Moment correlation, while reliability testing used Cronbach's Alpha to ensure instrument consistency. Prior to regression analysis, classical assumption tests were carried out, including tests for normality, multicollinearity, and heteroscedasticity.

The data were analyzed using multiple linear regression to assess both partial and simultaneous effects among variables. Hypothesis testing was conducted using t-tests, F-tests, and coefficient of determination (R^2) analysis. The level of significance applied in this study was 5% ($\alpha = 0.05$). The findings of this study are expected not only to answer the research questions statistically but also to provide practical contributions in the formulation of human resource development strategies and leadership policies in a dynamic work environment such as PT Bio Farma (Persero).

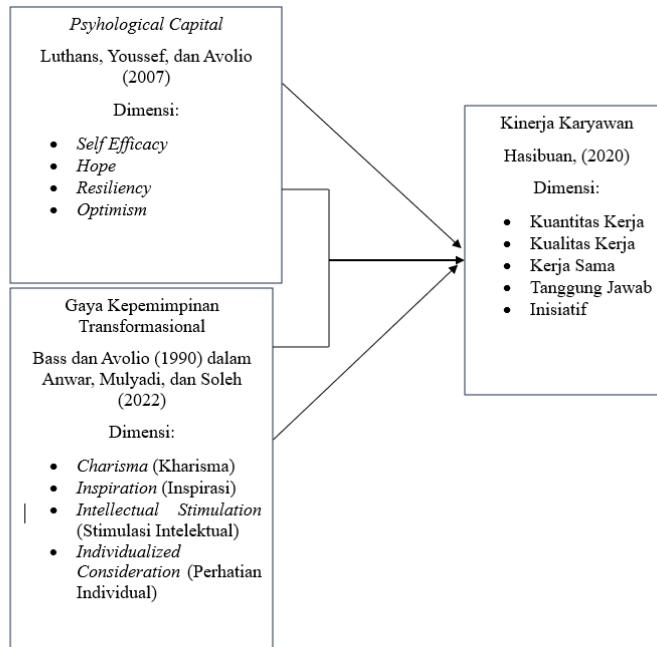


Figure 1. Research Paradigm
Source: Author's Analysis, 2025

RESULT AND ANALYSIS

This study was conducted on 300 permanent employees at the BOD-4 level of PT Bio Farma (Persero), with a respondent composition of 60.1% male and 39.9% female. The majority of respondents were 26–35 years old and held Bachelor's (S1) or Diploma 4 degrees. Validity testing of all questionnaire items showed significant results with correlation coefficients (r -count) > 0.361 , while the reliability tests for all variables indicated Cronbach's Alpha values above 0.60, confirming that the instruments used were valid and reliable.

Descriptive analysis results showed that Psychological Capital, Transformational Leadership Style, and Employee Performance were all in the "fairly high" category, with average scores of 2.88 for both Psychological Capital and Transformational Leadership, and 2.91 for Employee Performance. The most prominent dimensions of Psychological Capital were self-efficacy and resilience. For Transformational Leadership, inspiration and intellectual stimulation stood out, while in Employee Performance, initiative and teamwork were rated highest by respondents.

Classical assumption tests confirmed that the data met the requirements for multiple linear regression analysis. The normality test using the Kolmogorov–Smirnov method yielded an Asymp. Sig. value of 0.200 (> 0.05), indicating a normally distributed residual. The multicollinearity test showed a VIF value of 2.156 (< 10) and a tolerance value of 0.464 (> 0.2), suggesting no multicollinearity among independent variables. The heteroscedasticity test using a scatterplot displayed a random distribution of points without a specific pattern, fulfilling the assumption of homoscedasticity.

Regression analysis results showed that the model had a coefficient of determination (R^2) of 0.592, meaning 59.2% of the variation in Employee Performance can be explained by Psychological Capital and Transformational Leadership Style, while the remaining 40.8% is influenced by other factors outside the model. The F-test indicated that the regression model was statistically significant, with an F-value of 215.133 and a p-value < 0.001 , confirming that the two independent variables jointly have a significant influence on employee performance.

Partially, t-tests revealed that Psychological Capital had a significant impact on Employee Performance with a regression coefficient of 0.270, a t-value of 7.110, and a p-value < 0.001 . Similarly, Transformational Leadership Style also showed a significant effect, with a coefficient of 0.267, a t-value of 8.064, and a p-value < 0.001 . These results indicate that both variables contribute positively to performance improvement, with Transformational Leadership Style exerting a slightly more dominant influence ($\beta = 0.439$) compared to Psychological Capital ($\beta = 0.387$). Additionally, Pearson correlation analysis showed a strong positive relationship between Psychological Capital and Employee Performance ($r = 0.709$) and between Transformational Leadership and Employee Performance ($r = 0.723$), both significant at the 0.01 level.

The managerial implications of these findings emphasize that employee performance enhancement can be achieved by strengthening internal psychological aspects and improving leadership quality in the workplace. Training programs focused on developing self-efficacy, optimism, hope, and resilience should be prioritized in HR development strategies. Simultaneously, management should foster a culture of transformational leadership that emphasizes inspiration, intellectual stimulation, and individualized consideration. These findings highlight that the combination of psychological empowerment and supportive leadership is a key factor in fostering a productive, adaptive, and innovative work culture in state-owned enterprises such as PT Bio Farma (Persero).

Table 1 Reliability Test Results

Variabel	Alpha Cronbach	Batas Minimum	Keterangan
PsychologI Capital (X1)	0. 736	0, 60	Reliabel
Kepemimpinan Transformasional (X2)	0. 786	0, 60	Reliabel
Kinerja (Y)	0. 612	0, 60	Reliabel

Source: Analysis Results, 2025

Table 2 Results of Normality Test Using the Kolmogorov-Smirnov Method

One-Sample Kolmogorov-Smirnov Test

		Unstandardized Residual
N		300
Normal Parameters ^{a, b}	Mean	. 0000000
	Std. Deviation	3. 24748680
Most Extreme Differences	Absolute	. 031
	Positive	. 024

	Negative	-.031
Test Statistic		.031
Asymp. Sig. (2-tailed) ^c		.200 ^d
Monte Carlo Sig. (2-tailed) ^e	Sig.	.684
	99% Confidence Interval	Lower Bound .672
		Upper Bound .696

a. Test distribution is Normal.

b. Calculated from data.

c. Lilliefors Significance Correction.

d. This is a lower bound of the true significance.

e. Lilliefors' method based on 10000 Monte Carlo samples with starting seed 2110151063.

Source: Analysis Results, 2025

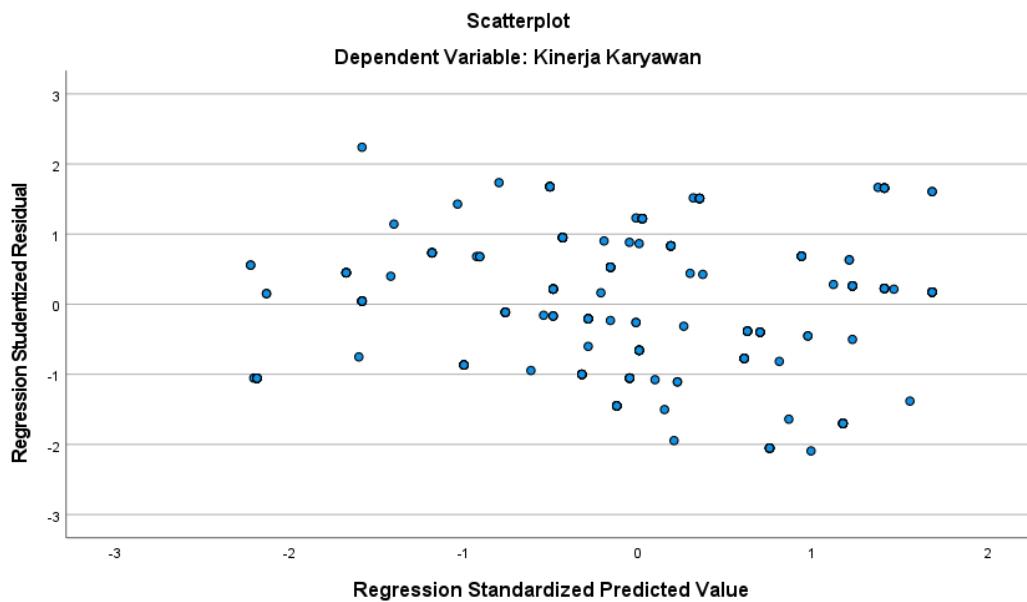
Table 3 Multicollinearity Test Results

Coefficients^a

Model		Collinearity Statistics	
		Tolerance	VIF
1	Psychological Capital	.464	2.156
	Kepemimpinan Transformasional	.464	2.156

a. Dependent Variable: Kinerja Karyawan

Sumber: Hasil Analisis, 2025



Source: Analysis Results, 2025

Figure 2 Scatterplot Heteroscedasticity Test

Table 4 Test of Determination Coefficient Analysis

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.769 ^a	.592	.589	3.258

a. Predictors: (Constant), Kepemimpinan Transformasional, *Psychological Capital*

b. Dependent Variable: Kinerja Karyawan

Sumber: Hasil Analisis, 2025

Table 5 Anova Test

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4568.225	2	2284.113	215.133	<.001 ^b
	Residual	3153.305	297	10.617		
	Total	7721.530	299			

a. Dependent Variable: Kinerja Karyawan

b. Predictors: (Constant), Kepemimpinan Transformasional, *Psychological Capital*

Source: Analysis Results, 2025

Table 6 Partial Hypothesis Testing (t-Test)

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
1 (Constant)	3.631	1.497		2.426	.016		
<i>Psychological Capital</i>	.270	.038	.387	7.110	<.0001	.464	2.156
Kepemimpinan Transformasional	.267	.033	.439	8.064	<.0001	.464	2.156

a. Dependent Variable: Kinerja Karyawan

Source: Analysis Results, 2025

Table 7 Correlation Coefficient Analysis Test

Correlations

		<i>Psychological Capital</i>	Kepemimpinan Transformasional	Kinerja Karyawan
<i>Psychological Capital</i>	Pearson Correlation	1	.732**	.709**
	Sig. (2-tailed)		.000	.000
	N	300	300	300
Kepemimpinan Transformasional	Pearson Correlation	.732**	1	.723**
	Sig. (2-tailed)	.000		.000
	N	300	300	300

Kinerja Karyawan	Pearson Correlation	.709**	.723**	1
	Sig. (2-tailed)	.000	.000	
	N	300	300	300

**. Correlation is significant at the 0.01 level (2-tailed).

Source: Analysis Results, 2025

CONCLUSION

The findings of this study conclude that Psychological Capital and Transformational Leadership Style significantly influence Employee Performance at PT Bio Farma (Persero), both partially and simultaneously, with a model contribution of 59.2%. Psychological Capital, which includes the dimensions of self-efficacy, hope, optimism, and resilience, positively affects performance, contributing 38.7%, indicating that employees' internal psychological strength has a direct impact on the quality of their work. Meanwhile, Transformational Leadership Style, through the dimensions of charisma, inspiration, intellectual stimulation, and individualized consideration, exerts a more dominant influence, contributing 43.9%. This confirms that leadership capable of motivating, inspiring, and personally understanding employees plays a crucial role in enhancing performance. Together, these two variables form a strong synergy in creating a productive, adaptive, and goal-oriented work environment.

Based on these findings, it is recommended that PT Bio Farma (Persero) develop programs to enhance Psychological Capital through training initiatives that promote confidence, perseverance, and mental resilience such as coaching, mentoring, and regular psychological development sessions. On the other hand, strengthening transformational leadership can be achieved through inspiration-based leadership training, visionary communication, and empathy-focused development, particularly targeted at managers and supervisors.

To ensure the effectiveness of these interventions, the company should also establish an integrated performance evaluation system based on objective indicators such as productivity, attendance, retention, and job satisfaction. Through a strategic and sustainable approach, the synergy between psychological empowerment and adaptive leadership can foster an excellent work culture and optimal employee performance in the long term.

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