

THE INFLUENCE OF WORK MOTIVATION, WORK ENVIRONMENT, AND LEADERSHIP STYLE TO PRODUCTIVITY WORK EMPLOYEE ON PTPN IV MARJANDI PLANTATION

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Abstract

This study aims to analyze the influence of work motivation, work environment, and leadership style on employee work productivity at PTPN IV Kebun Marjandi. This study was motivated by the inconsistency of previous research findings regarding factors influencing work productivity and the limited research in the state-owned plantation sector. The study used a quantitative approach with an explanatory survey method. The study population was 170 permanent employees of PTPN IV Kebun Marjandi, with a sample of 119 respondents determined using the Slovin formula and *simple random sampling techniques*. Data were collected through a questionnaire using a five-level Likert scale. Data analysis was carried out using multiple linear regression with the help of IBM SPSS Statistics version 27, which was preceded by validity, reliability, and classical assumption tests. The results showed that work motivation, work environment, and leadership style partially and simultaneously had a positive and significant effect on employee work productivity ($p < 0.05$). Work motivation was the variable that had the most dominant influence on work productivity compared to other variables. The coefficient of determination value showed that variations in work productivity could be largely explained by the three independent variables in the research model. These findings confirm that increasing work productivity requires an integrated human resource management strategy through strengthening work motivation, creating a conducive work environment, and implementing an effective leadership style. This research provides an empirical contribution to the development of human resource management studies in the plantation sector and serves as a basis for company management in formulating policies for increasing work productivity sustainably.

Keyword : motivation Work; environment Work; style leadership; productivity work; human resource management.

INTRODUCTION

Work productivity is one of the main indicators that determines an organization's success in achieving its goals effectively and efficiently. A high level of productivity demonstrates an organization's ability to optimally utilize human resources, thereby increasing competitiveness and sustainability. organization. In the sector plantations, employee productivity become It's a strategic factor because it's directly related to achieving production targets, operational efficiency, and company profits. Therefore, increasing work productivity depends not only on individual abilities but is also influenced by various organizational factors that can drive sustainable employee performance .

Various studies show that work productivity is influenced by both internal and external organizational factors. Internal factors include work motivation, competence, discipline, and job satisfaction, while external factors include the work environment, organizational culture, reward systems, and leadership style. Among these factors, work motivation, work environment, and Leadership style is the variable that is most frequently studied because it has a direct relationship with work behavior, work enthusiasm, and achievement of organizational targets. Employees who are highly motivated, work in a conducive environment, and receive effective leadership support tend to demonstrate better productivity than employees who work in the opposite conditions. Work motivation is a psychological force that drives individuals to perform optimally to achieve organizational goals. Highly motivated employees demonstrate greater commitment, responsibility, and work ethic, thereby

increasing productivity. Furthermore, a comfortable, safe, and supportive work environment creates a conducive work environment, thereby increasing concentration, satisfaction, and productivity. work effectiveness. Furthermore, leadership style plays a strategic role in directing, motivating, and building a positive work culture. Leaders who are able to provide direction, role models, and support their subordinates will more easily drive increased organizational productivity.

Although the relationship between work motivation, work environment, leadership style, and work productivity has been extensively researched, previous research findings have been inconsistent. Some studies report that work motivation influential positive And significant to productivity work, while research other find that influence that is not significant. Difference Research findings also found a significant effect on work environment and leadership style variables. Some studies concluded that these two variables have a strong influence on work productivity, but others showed a relatively low or even insignificant effect. This inconsistency in results indicates an **empirical gap** that requires further testing in different organizational contexts. In addition to differences in research results, most previous studies were conducted in the manufacturing, banking, education, and government agencies sectors. study productivity Work on company plantations, in particular Body State-Owned Enterprises (BUMN) in the palm oil plantation sector are still relatively limited. Despite the characteristics work in the sector Plantations face different complexities, such as field work conditions, production target systems, organizational structures, and work relationship patterns that differ significantly from those in service organizations or manufacturing industries. These conditions indicate a **contextual gap** that needs to be examined to gain a more in-depth understanding of the characteristics of plantation organizations.

PTPN IV Marjandi Plantation is a palm oil plantation business unit that has a role important in supporting company productivity. However, various internal reports indicate that employee productivity still faces challenges in achieving the company's established production targets. that, change structure organization, adjustment system Workplace dynamics, the dynamics of the relationship between leaders and employees, and the need to increase work motivation are factors that require attention in efforts to increase work productivity. These conditions reinforce the importance of research that can explain these factors. dominant influencing employee work productivity in the plantation company environment.

Based on the above description, there is still a **research gap** in the form of the absence of a comprehensive study that examines the influence of work motivation, work environment, and leadership style on employee productivity at PTPN IV Kebun Marjandi using the latest empirical data. This study is expected to provide empirical evidence regarding the contribution of each variable to work productivity, thus providing a basis for in preparation more effective human resource management strategies.

The novelty of this research lies in the simultaneous examination of the influence of work motivation, work environment, and leadership style on work productivity in the context of state-owned plantation companies, which have operational characteristics that differ from other sectors. This research also provides The latest empirical evidence on the most dominant factors influencing employee work productivity at PTPN IV Kebun Marjandi. The research findings are expected to not only enrich the development of human resource management theory but also serve as a basis for companies in formulating productivity improvement policies through strengthening work motivation, improving the work environment, and developing more effective leadership.

Based on this background, this study aims to analyze the influence of work motivation, work environment, and leadership style on employee work productivity. at PTPN IV Garden Marjandi, good Both partially and simultaneously. The research results are expected to provide theoretical contributions to the development of human resource management science and provide practical recommendations for companies to increase work productivity sustainably.

METHOD STUDY

This study uses a quantitative approach with an explanatory survey method to analyze the influence of work motivation, work environment, and leadership style on employee productivity at PTPN IV Kebun Marjandi. This approach was chosen because it is able to explain the causal relationship between variables based on empirical data obtained from respondents.

The study was conducted at PTPN IV Kebun Marjandi, Simalungun Regency, North Sumatra, in 2026. The study population consisted of 170 permanent employees. The sample size was determined using the Slovin formula at a 5% error rate, resulting in 119 respondents. The sampling technique used **simple random sampling**

, so that each member of the population had an equal opportunity to become a respondent. Primary data were collected using a questionnaire compiled based on the indicators of each research variable. Work motivation variables were measured through *engagement*, commitment, job satisfaction, and *turnover intention indicators*. Work environment variables included physical and non-physical conditions of the work environment, while leadership style variables were measured based on the leader's ability to provide direction, motivation, communication, role model, and decision-making. Work productivity was measured through work quality, work quantity, effectiveness, efficiency, and timeliness of work completion. All indicators were measured using a five-level Likert scale, ranging from a score of 1 (strongly disagree) to a score of 5 (strongly agree).

Prior to analysis, the research instrument was tested through a validity test using **Pearson Product Moment correlation** and a reliability test using **Cronbach's Alpha coefficient**. The instrument is declared valid if the correlation coefficient value is greater than the table *r value*, while the instrument is declared reliable if it has a Cronbach's Alpha value greater than 0.70. **IBM SPSS Statistics** software version 27. The analysis stages included descriptive statistical analysis, classical assumption tests consisting of normality tests, multicollinearity tests, and heteroscedasticity tests. then continued with multiple linear regression analysis to test the influence of work motivation, work environment, and leadership style on employee work productivity.

Model regression Which used in study formulated as following:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon$$

Information:

- Y = Productivity Work
- X₁ = Motivation Work
- X₂ = Environment Work
- X₃ = Leadership Style
- α = Constant
- β₁, β₂, β₃ = Coefficient regression
- e = Error (error)

Hypothesis testing was conducted through a partial test (*t-test*) to determine the effect of each independent variable on work productivity, a simultaneous test (*F-test*) to test the effect of the three independent variables together, and a coefficient of determination (*R²*) to determine the magnitude of the contribution of work motivation, work environment, and leadership style variables in explaining variations in employee work productivity. All tests were conducted at a significance level of 5% (α = 0.05). The hypothesis is accepted if the significance value is less than 0.05.

RESULTS AND DISCUSSION

RESULTS

Characteristics Respondents

This study involved **119 respondents** who were permanent employees of PTPN IV Kebun Marjandi. Respondent characteristics were analyzed based on education level and gender to provide a snapshot of the respondents' demographics. The analysis showed that the majority of respondents were productive workers with work experience in plantation operations. This provides confidence that the respondents' answers objectively represent the organization's conditions.

Test Results Quality Instrument

Before hypothesis testing, the research instrument was first tested through validity and reliability tests to ensure that each indicator was able to measure the research construct accurately and consistently. Validity testing was conducted using **Pearson's Product Moment correlation**, while reliability was measured using **Cronbach's Alpha coefficient**.

The validity test results show that all statement items on the variables of work motivation, work environment, leadership style, and work productivity have a correlation coefficient value (*r count*) that is greater than the *r* table value (0.180). Thus, all statement items are declared valid and suitable for use as research instruments.

Furthermore, reliability test results showed that all variables had **Cronbach's Alpha values** greater than 0.70. This indicates that the research instrument has a high level of internal consistency and is therefore reliable

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as a data collection tool.

Table 1. Results Test Validity And Reliability Instrument

Variables	Number of Items	r count	r table	Validity Statement	Cronbach's Alpha	Reliability Information
Motivation Work (X ₁)	8	0.521-0.816	0.180	All items are valid	0.874	Reliable
Variables	Number of Items	r count	r table	Validity Statement	Cronbach's Alpha	Reliability Information
Environment Work (X ₂)	8	0.487-0.845	0.180	All items are valid	0.891	Reliable
Leadership Style (X ₃)	8	0.536-0.829	0.180	All items are valid	0.882	Reliable
Work Productivity (Y)	8	0.514-0.838	0.180	All items are valid	0.903	Reliable

Source: Results processed data using IBM SPSS Statistics Version 27 (2026).

Based on Table 1, all research variables meet the validity and reliability requirements. reliability. Value coefficient correlation each indicator has exceeds the table's **r value** , indicating that all items are capable of representing the construct being measured. Furthermore, **the Cronbach's Alpha value** for each variable is in the **excellent category** (>0.80), indicating that the research instrument has high internal consistency. Therefore, all questionnaire items are suitable for use in multiple linear regression analysis and hypothesis testing.

Test Results Assumptions Classic

Before conducting multiple linear regression analysis, the research model was first tested using classical assumption tests, including normality, multicollinearity, and heteroscedasticity. These tests aimed to ensure that the regression model met the basic assumptions, ensuring that the estimation results were **the Best Linear Unbiased Estimator (BLUE)** .

Table 2. Results Test Classical Assumptions

Types of Testing	Indicator	Test Results	Criteria	Information
Normality	Kolmogorov-Smirnov (Asymp. Sig.)	0.200	Sig. > 0.05	Distributed residuals normal
Multicollinearity	Work Motivation (Tolerance) = 0.742; VIF = 1,348)	Qualify	Tolerance > 0.10; VIF < 10	There is no multicollinearity
	Work Environment (Tolerance) = 0.695; VIF = 1,439)	Qualify	Tolerance > 0.10; VIF < 10	There is no multicollinearity
	Style Leadership (Tolerance = 0.721; VIF = 1,387)	Qualify	Tolerance > 0.10; VIF < 10	There is no multicollinearity

Heteroscedasticity	Scatterplot And Glacier Test	Sig. > 0.05	There is no pattern certain	There is no heteroscedasticity
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The results of the normality test using the **Kolmogorov-Smirnov method** showed a significance value of **0.200**, which is greater than 0.05. These results indicate that the residuals of the regression model are normally distributed, thus fulfilling the assumptions. normality.

Furthermore, the results of the multicollinearity test show that all independent variables have a **Tolerance value** greater than **0.10** and a **Variance Inflation Factor (VIF) value** less than **10**. These values indicate that there is no relationship. high linearity between independent variables, so that the regression model is free from multicollinearity symptoms.

Heteroscedasticity testing was performed using **scatterplot analysis** supported by the **Glejser Test**. The test results showed that the residual points were randomly distributed around the zero line and did not form a specific pattern. Furthermore, the significance values of all variables in the Glejser Test were higher. greater than 0.05. Thus, the regression model does not experience symptoms of heteroscedasticity.

Based on the results of these three tests, it can be concluded that the regression model meets all classical assumptions. Therefore, the multiple linear regression model is deemed suitable for analyzing the influence of work motivation, work environment, and leadership style on employee productivity and for testing the research hypotheses.

Analysis Regression Linear Multiple

A multiple linear regression analysis was conducted to examine the influence of work motivation, work environment, and leadership style on employee productivity at PTPN IV Kebun Marjandi. This analysis aimed to determine the direction of the relationship, the magnitude of the influence of each independent variable, and to develop a regression model that could explain changes in work productivity based on changes in each independent variable.

Table 3. Results Analysis Regression Linear Multiple

Variables	Coefficient Regression (B)	Std. Error	Beta	t count	Sig.
Constant	4,287	1,624	-	2,640	0.009
Motivation Work (X ₁)	0.421	0.054	0.456	7,846	0,000
Environment Work (X ₂)	0.315	0.057	0.318	5,529	0,000
Style Leadership (X ₃)	0.367	0.055	0.389	6,624	0,000

Dependent Variable: Productivity Work (Y)

Source: Results processed data using IBM SPSS Statistics Version 27 (2026).

Based on results analysis on Table 3, obtained equality regression linear doubled as follows:

$$Y = 4,287 + 0,421X_1 + 0,315X_2 + 0,367X_3 + e$$

Information:

- **Y** = Productivity Work
- **X₁** = Motivation Work
- **X₂** = Environment Work
- **X₃** = Leadership Style
- **e** = Error (error)

The regression equation shows that all independent variables have positive regression coefficients. The constant value of **4.287** indicates that if work motivation, work environment, and leadership style are assumed to be constant, then work productivity has a baseline value of 4.287.

The work motivation regression coefficient of **0.421** shows that every one unit increase in work motivation will increase work productivity by **0.421 units**, with variable assumptions other fixed. Coefficient

regression environment A work-related coefficient of **0.315** indicates that improving work environment conditions will increase work productivity by **0.315 units** . Meanwhile, the leadership style regression coefficient of **0.367** indicates that the more effective the leadership style applied, the higher the employee work productivity.

The results of the analysis also show that **work motivation has a beta coefficient value. standardized ($\beta = 0.456$) Which most greater** than other variables. This finding indicates that work motivation is the variable that has the most dominant influence on the work productivity of PTPN IV Kebun Marjandi employees.

Overall, the regression results indicate that increased work productivity is not influenced by a single factor, but rather by the interaction between individual psychological factors, work environment conditions, and the effectiveness of organizational leadership. Therefore, productivity improvement strategies need to be implemented in an integrated manner by strengthening work motivation, providing a safe and conducive work environment, and developing leadership capable of optimally directing, motivating, and empowering employees.

Testing Hypothesis

Influence Motivation Work on Productivity Work

The first hypothesis was tested using a **partial t-test** to determine the effect of work motivation on employee productivity. The test results are presented in Table 4.

Table 4. Test Results t Variables Motivation Work to Productivity Work

Variables	Coefficient (B)	t count	t table	Sig.	Decision
Motivation Work (X_1)	0.421	7,846	1,981	0,000	H_1 accepted

Source: Results processed data using IBM SPSS Statistics Version 27 (2026).

Based on Table 4, the **work motivation variable** obtained a **t-value of 7.846** , greater than the **t-table of 1.981** , with a significance value of **$0.000 < 0.05$** . These results indicate that **work motivation has a positive and significant effect on employee work productivity** . Thus, **the first hypothesis (H_1) is accepted** , which means that the higher the work motivation an employee has, the higher the work productivity produced.

A positive regression coefficient indicates that increased work motivation will be followed by increased work productivity. Conversely, if work motivation decreases, work productivity will also potentially decrease. This finding confirms that motivation is a psychological factor that plays a crucial role in shaping work behavior, increasing enthusiasm, strengthening commitment, and encouraging employees to achieve organizational targets .

Theoretically, the results of this study support the motivation theory, which states that motivation is an internal and external force that directs, drives, and sustains individual behavior in achieving organizational goals. Highly motivated employees tend to demonstrate greater responsibility, better work discipline, adaptability to change, and a willingness to deliver optimal performance. Therefore, motivation is a key determinant of increasing human resource productivity.

The results of this study are also consistent with the findings of **Arifa and Muhsin (2018)** , who stated that work motivation has a positive and significant effect on employee productivity. Furthermore, these results reinforce the research of **Bangun et al. (2026)** and **Angelita and Rozamuri (2026)** , which showed that increasing work motivation can drive productivity increases through increased commitment, employee engagement , and job satisfaction. The consistency of these research results indicates that motivation is a fundamental factor in increasing work productivity in various organizational sectors, including plantation companies.

From practical perspective, findings This give implications that management PTPN IV Kebun Marjandi needs to prioritize improving work motivation in its human resource management. This can be achieved through the implementation of a fair reward system, performance-based incentives, career development opportunities, ongoing training, and strengthening communication between management and employees. This policy is expected to improve employee morale, loyalty and productivity in a sustainable manner.

Overall, the results of this study reinforce **the research gap** outlined in the introduction, namely that work motivation remains a significant factor in increasing work productivity in the plantation sector. These findings provide the latest empirical evidence that work motivation is a significant variable. own contribution

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most dominant in explain productivity Work employee PTPN IV Garden Marjandi so that need become focus main in formulation of human resource development policies. Influence Environment Work to Productivity Work The second hypothesis was tested using a **partial t-test** to determine the effect of the work environment on employee productivity. The test results are presented in Table 5.

Table 5. Results Test t Variables Work environment to Productivity Work

Variables	Coefficient (B)	t count	t table	Sig.	Decision
Environment Work (X ₂)	0.315	5,529	1,981	0,000	H ₂ accepted

Source: Results processed data using IBM SPSS Statistics Version 27 (2026).

Based on Table 5, the **work environment variable** obtained a **t-value of 5.529**, which is greater than the **t-table of 1.981**, with a significance value of **0.000 < 0.05**. These results indicate that **the work environment has a positive and significant impact on employee work productivity**. Thus, **the second hypothesis (H₂) is accepted**, which means that the better the work environment conditions perceived by employees, the higher the resulting work productivity.

A positive regression coefficient indicates that the increase A quality work environment will be followed by increased work productivity. A safe, comfortable, and clean work environment, supported by adequate work facilities, can create a conducive work atmosphere so that employees can work with greater focus, effectiveness, and efficiency. In addition to physical aspects, non-physical work environments such as harmonious working relationships, open communication, and a positive organizational culture also contribute to improving work morale and the quality of task completion.

Theoretically, the results of this study support the concept proposed by **Sedarmayanti (2018)** and **Nitisemito (2019)**, who stated that the work environment is a crucial factor influencing employee behavior and productivity. A well-managed work environment will create a sense of security, comfort, and job satisfaction, thus encouraging employees to perform at their best. Conversely, a less conducive work environment has the potential to reduce concentration, increase error rates, and hinder the achievement of organizational goals.

The results of this study also align with those of **Novianti and Suparmono (2021)**, who found that the work environment has a positive and significant impact on employee productivity. This finding is reinforced by research by **Saputra et al. (2026)**, which shows that a conducive work environment can increase work effectiveness and collaboration. between employees, as well as organizational productivity. The consistency of these results shows that quality environment Work is one of important determinants in increasing human resource productivity in various types of organizations, including plantation companies.

From a practical perspective, the findings of this study provide implications that management PTPN IV Plantation Marjandi needs keep improving quality environment work through the provision of adequate work facilities, maintenance of cleanliness and safety work, repair order location of work space, as well as strengthening communication and cooperation between employees. Effort that is not only increase comfort Work, but also able to encourage the effectiveness of work completion and achievement of company production targets.

Overall, the results of this study strengthen **the research gap** identified in the introduction, namely that the work environment remains a factor with a significant influence. on work productivity in the plantation sector. Findings This give proof empirically that the increase environmental quality Work, both from physical and non-physical aspects, is an effective strategy to increase employee work productivity and support the organization's sustainable success.

Influence Style Leadership to Productivity Work

The third hypothesis was tested using a **partial t-test** to determine the effect of leadership style on employee productivity. The test results are presented in Table 6.

Table 6. Results Test t Variables Style Leadership to Productivity Work

Variables	Coefficient (B)	t count	t table	Sig.	Decision
Leadership Style (X ₃)	0.367	6,624	1,981	0,000	H ₃ accepted

Source: Results processed data using IBM SPSS Statistics Version 27 (2026).

Based on Table 6, the **leadership style variable** obtained a **t-value of 6.624** , greater than **the t-table of 1.981** , with a significance value of **$0.000 < 0.05$** . These results indicate that **leadership style has a positive and significant effect on employee work productivity** . Thus, **the third hypothesis (H_3) is accepted** , which means that the more effective the leadership style applied in the organization, the higher the work productivity achieved by employees.

A positive regression coefficient indicates that increased leadership style effectiveness will be followed by increased work productivity. Leaders who are able to provide clear direction, establish open communication, provide motivation, make appropriate decisions, and serve as role models for their subordinates will create a conducive work environment and encourage improved individual and team performance. Effective leadership can also increase employee trust, commitment, and engagement in achieving goals. organizational goals.

Theoretically, the results of this study support **Yukl's (2020) view** which states that leadership process influence individual or groups to achieve organizational goals through effective direction, motivation, and coordination. Similarly, **Robbins and Judge (2023)** explain that organizational effectiveness is greatly influenced by the leader's ability to manage human resources, build positive working relationships, and create an organizational culture that supports performance achievement. Thus, leadership style is a strategic factor in increasing employee productivity.

The results of this study also align with research by **Ulfah et al. (2026)** , which showed that leadership style has a positive and significant effect on employee work productivity. Similar findings were presented by **Saputra et al. (2026)** , who stated that effective leadership can increase work motivation, strengthen team collaboration, and encourage the achievement of organizational targets. The consistency of these results indicates that leadership quality is a crucial determinant in increasing productivity in various organizational sectors, including plantation companies.

From a practical perspective, the results of this study provide implications that the management of PTPN IV Kebun Marjandi needs to strengthen leadership competencies. on every level organization. Effort can be done through program Leadership training, communication skills development, decision-making skills enhancement, and leadership development oriented toward employee empowerment. Leaders who are able to build harmonious working relationships and provide support to their subordinates will be more effective in sustainably increasing work productivity.

Overall, the results of this study provide empirical evidence that leadership style is a factor that significantly influences employee productivity at PTPN IV Kebun Marjandi. This finding reinforces **the research gap** outlined in the introduction, namely that leadership effectiveness remains a crucial factor in increasing productivity in the plantation sector. Therefore, developing leadership quality is essential. part of strategy management source human resources to improve competitiveness and sustainable organizational performance. The Influence of Work Motivation, Work Environment, and Leadership Style on Work Productivity The fourth hypothesis test was carried out using **the F test (simultaneous)** to determine the influence of motivation. work, work environment, and leadership style collectively on the work productivity of PTPN IV Kebun Marjandi employees. The test results are presented in Table 7.

Table 7. Results Test F (Simultaneous)

Model	F count	F table	Sig.	Decision
Regression	9,162	2.45	0,000	H ₄ accepted
n				

Dependent Variable: Productivity Work (Y)

Predictors: Motivation Work (X_1), Environment Work (X_2), And Style Leadership (X_3)

Source: Results processed data using IBM SPSS Statistics Version 27 (2026).

Based on Table 7, the **calculated F value is 9.162** , which is greater than **the F table of 2.45** , with a significance value of **$0.000 < 0.05$** . These results indicate that **work motivation, work environment, and leadership style simultaneously have a positive and significant effect on employee work productivity** . Thus, **the fourth hypothesis (H_4) is accepted** , which means that the three independent variables together are able to explain changes in work productivity at PTPN IV Kebun Marjandi. The results of this study indicate that work productivity is the result of the interaction of various complementary organizational factors. Work motivation acts as an internal driver that shapes employee enthusiasm and commitment to work. A conducive

work environment provides the physical and psychological conditions that support effective task execution. Meanwhile, an effective leadership style can direct, guide, and motivate employees to work effectively. optimally in achieving organizational goals. Therefore, increasing work productivity cannot be achieved only by fix one factors alone, but requires integrated management of these three aspects.

Theoretically, this finding strengthens the concept of **Human Resource Management**. **Humans**, as proposed by **Hasibuan (2020)** and **Robbins and Judge (2023)** , state that work productivity is influenced by a combination of individual, organizational, and leadership factors. These three factors interact to shape work behavior, increase job satisfaction, strengthen organizational commitment, and produce higher performance. Thus, work productivity is an output of an integrated human resource management system.

The results of this study are also consistent with the research of **Saputra et al. (2026)** , which showed that work motivation, work environment, and leadership style simultaneously have a significant influence on employee productivity. Similar findings were reported by **Bangun et al. (2026)** , who stated that increasing organizational productivity is not only influenced by work motivation but also supported by a conducive work environment and effective leadership. The consistency of these results indicates that these three variables are the main determinants of work productivity in various types of organizations, including plantation companies.

From a practical perspective, the results of this study imply that the management of PTPN IV Kebun Marjandi needs to implement a comprehensive human resource management strategy. Work productivity can be increased by strengthening work motivation with a fair reward system, providing a safe and comfortable work environment, and developing adaptive, communicative leadership that is oriented toward employee empowerment. The third synergy It is hoped that these aspects will be able to increase work effectiveness, strengthen organizational commitment, and support the achievement of production targets in a sustainable manner.

Overall, the results of this study successfully answered **The research gap** outlined in the introduction, namely the limited empirical evidence regarding the simultaneous influence of work motivation, work environment, and leadership style on work productivity in state-owned plantation companies. This finding provides an empirical contribution that integrated management of these three factors is strategy which is effective in improving Employee work productivity. The results of this study not only enrich the human resource management literature but also provide a scientific basis for organizational policymaking to improve company performance and competitiveness sustainably.

Coefficient of Determination

Coefficient determination (**Adjusted R Square**) is used to determine the extent of the ability of the independent variables, namely work motivation, work environment, and leadership style, to explain variations in employee work productivity. The results of the determination coefficient analysis are presented in Table 8.

Table 8. Test Results Coefficient Determination

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.874	0.764	0.752	2,146

Dependent Variable: Productivity Work (Y)

Predictors: Motivation Work (X₁), Environment Work (X₂), And Style Leadership (X₃)

Source: Results processed data using IBM SPSS Statistics Version 27 (2026).

Based on Table 8, the Adjusted R Square value **was 0.752** . These results indicate that **75.2%** of the variation in employee work productivity can be explained by the variables of work motivation, work environment, and leadership style used in the research model. In other words, the three independent variables has a strong ability to explain changes in employee work productivity at PTPN IV Kebun Marjandi.

Meanwhile, the remaining **24.8%** is influenced by other factors not included in the research model. These factors include compensation systems, organizational culture, job satisfaction, employee competencies, training and development, work discipline, workload, work *-life balance* , employee *engagement* , and individual characteristics that potentially impact work productivity.

Mark **Adjusted R Square** as big as **0.752** indicates that model regression The model developed has high **explanatory power** . This indicates that the combination of work motivation, work environment, and leadership style is the main determinant of employee work productivity. at PTPN IV Garden Marjandi. The better these three factors are managed, the greater the organization's opportunity to sustainably increase work productivity.

Theoretically, the results of this study support the views of **Robbins and Judge (2023)** and **Hasibuan (2020)**, who stated that work productivity is the result of the interaction of various individual and organizational factors. Work motivation drives individual enthusiasm and commitment, the work environment creates conditions that support task execution, and leadership style plays a role in directing, motivating, and optimizing human resource potential. The combination of these three factors significantly contributes to increased work productivity.

From perspective practical, mark coefficient determination Which tall show The study concluded that company policies focused on increasing work motivation, creating a conducive work environment, and developing effective leadership are appropriate strategies for improving work productivity. However, companies also need to consider factors beyond the research model to achieve more optimal and sustainable productivity gains.

Overall, the coefficient of determination results reinforce the research findings that the developed model has a good ability to explain employee work productivity. These findings also provide an empirical contribution to the development of human resource management studies, particularly regarding the importance of managing work motivation, the work environment, and leadership style. as a strategic factor in increasing work productivity in plantation companies.

General Discussion

The results of the study show that **work motivation, work environment, and leadership style are the main determinants of employee work productivity. PTPN IV Kebun Marjandi**. Partially, the three variables are proven to have a positive and significant effect on work productivity, while simultaneously all three provide a strong contribution in explaining variations in employee work productivity. Among the three variables, **work motivation is the most dominant factor**, as indicated by the highest **t-value** and regression coefficient. This finding indicates that intrinsic and extrinsic motivation have a very important role in shaping employee work enthusiasm, commitment, discipline, and work effectiveness.

Theoretically, the results of this study reinforce the concept of **Human Resource Management**, which states that work productivity is the result of the interaction between individual factors, organizational factors, and leadership factors. Work motivation functions as an internal driver that influences individual work behavior. The work environment provides physical and psychological conditions that support task execution. While leadership style plays a role in directing, motivating, and optimizing human resource potential, these three factors do not work together. separately, but complement each other in forming productive work behavior and oriented towards achieving organizational goals.

The findings of this study are also consistent with various previous studies that concluded that work motivation, work environment, and leadership style are strategic factors in increasing work productivity. These results reinforce the findings of **Arifa and Muhsin (2018)**, **Novianti and Suparmono (2021)**, and **Saputra et al. (2026)**, which showed that increasing work motivation, creating a conducive work environment, and implementing an effective leadership style can significantly increase employee productivity. The consistency of these results demonstrates that that three variables have a role universal in various organizational sector, including state-owned plantation companies.

From a practical perspective, the research findings imply that increasing work productivity cannot be achieved through a piecemeal approach. PTPN IV Marjandi Plantation management needs to implement an integrated human resource management strategy. through increasing work motivation, providing a safe, comfortable, and collaborative work environment, and strengthening leadership capacity at every level of the organization. These efforts can be realized through a performance-based reward system, providing career development opportunities, training and competency development, improving the quality of communication between leaders and employees, and strengthening a collaborative work culture oriented towards achieving organizational goals. This integrated strategy is expected to increase work productivity while strengthening the company's long-term competitiveness.

This study also provides **theoretical contributions** by enriching the human resource management literature, particularly regarding the determinants of work productivity in the plantation sector. Unlike most previous studies that focus on the manufacturing, service, education, or government sectors, this study presents empirical evidence from **state-owned plantation companies** with distinct organizational characteristics, work systems, and operational targets. Thus, the results of this study broaden the scope of theoretical generalizations regarding the relationship between work motivation, work environment, leadership style, and work productivity

in the plantation industry context. Furthermore, this study successfully addresses **the research gap** identified in the introduction, namely the limited number of studies simultaneously examining the influence of work motivation, work environment, and leadership style on work productivity in state-owned plantation companies. **The novelty** of this study lies in the presentation of empirical evidence that employee work productivity in the plantation sector is not only influenced by individual factors but also determined by the synergy between work motivation, work environment quality, and leadership effectiveness. These findings provide a scientific basis for organizations in formulating more comprehensive human resource management policies oriented towards sustainable productivity improvement.

Overall, this study confirms that increasing work productivity requires a holistic and integrated approach. Organizations that are able to build high work motivation, create a conducive work environment, and... apply style leadership Which effective will own opportunity more big to improve employee performance, achieve organizational targets, and strengthen the company's competitive advantage in a sustainable manner. These findings are expected to serve as a reference for academics in developing human resource management studies and as a basis for practitioners in designing policies to increase work productivity based on empirical evidence.

CONCLUSION

Study This aim analyze the influence motivation work, environment work, and leadership style on employee work productivity at PTPN IV Kebun Marjandi. Based on the results of data analysis and discussion, several conclusions were obtained as follows.

1. **Work motivation has a positive and significant impact on employee productivity.** The higher an employee's motivation, the higher their productivity. These findings indicate that both intrinsic and extrinsic motivation can increase employee enthusiasm, responsibility, and commitment to achieving organizational goals.
2. **The work environment has a positive and significant impact on employee productivity.** A safe, comfortable work environment supported by harmonious working relationships can create a conducive work atmosphere, thereby increasing the effectiveness and efficiency of work execution.
3. **Leadership style has a positive and significant impact on employee productivity.** Leadership that provides direction, motivation, effective communication, and role models has been proven to drive increased productivity. The role of leadership is crucial in building a productive work culture oriented toward achieving organizational goals.
4. **Work motivation, work environment, and leadership style simultaneously have a positive influence and significant on productivity Work employee PTPN IV Marjandi Plantation.** These three variables are able to explain most of the variation in work productivity, so increasing productivity requires a multidisciplinary approach. which is integrated through strengthening motivation, improving the work environment, and developing leadership qualities.
5. This research makes **an empirical contribution** to the development of human resource management science by strengthening evidence that work motivation, work environment, and leadership style are key determinants of work productivity in the plantation sector. Furthermore, this study fills **a research gap** related to the limited studies on factors influencing work productivity in state-owned plantation companies, particularly PTPN IV Kebun Marjandi.
6. Practically, the research results provide implications that the management of PTPN IV Kebun Marjandi needs develop policy oriented toward increasing employee motivation through a fair reward system, creating a more conducive work environment, and strengthening leadership capacity at every level of the organization. These efforts are expected to sustainably increase work productivity and support the achievement of company targets.

As a recommendation for further research, it is recommended to add other variables such as compensation, job satisfaction, organizational culture, work discipline, competence, or employee engagement so that the research model can explain work productivity more comprehensively. Research in other industrial sectors with different organizational characteristics is also needed to test the consistency of the findings and increase the generalizability of the research results.

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