

The influence of human resource planning and supervision functions on fresh fruit bunch (FFB) production performance at PT. Perkebunan Nusantara IV Regional VI Aceh

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ABSTRAK

Penelitian ini bertujuan untuk menganalisis pengaruh fungsi perencanaan dan pengawasan sumber daya manusia terhadap kinerja produksi Tandan Buah Segar (TBS) pada PT. Perkebunan Nusantara IV Regional VI Aceh. Penelitian menggunakan metode kuantitatif dengan penyebaran kuesioner kepada 30 karyawan sebagai responden. Analisis data dilakukan menggunakan regresi linear berganda, *t-test*, *F-test*, dan koefisien determinasi (R^2). Hasil penelitian menunjukkan bahwa fungsi perencanaan dan pengawasan sumber daya manusia berpengaruh positif dan signifikan terhadap kinerja produksi TBS, baik secara parsial maupun simultan. Secara simultan, kedua variabel memiliki pengaruh signifikan terhadap kinerja produksi dengan nilai *F-count* sebesar 327,507 dan tingkat signifikansi kurang dari 0,05. Nilai koefisien determinasi (R^2) sebesar 0,960 menunjukkan bahwa 96,0% variasi kinerja produksi TBS dapat dijelaskan oleh fungsi perencanaan dan pengawasan sumber daya manusia, sedangkan 4,0% sisanya dipengaruhi oleh faktor lain di luar penelitian. Temuan ini menunjukkan bahwa penerapan fungsi perencanaan dan pengawasan sumber daya manusia yang efektif dapat meningkatkan kinerja produksi perusahaan.

Kata Kunci: perencanaan; pengawasan; kinerja produksi

ABSTRACT

This study aims to analyze the influence of human resource planning and supervision functions on Fresh Fruit Bunches (FFB) production performance at PT. Perkebunan Nusantara IV Regional VI Aceh. The study used a quantitative method by distributing questionnaires to 30 employees as respondents. Data analysis was carried out using multiple linear regression, t-test, F-test, and coefficient of determination (R^2). The results showed that human resource planning and supervision functions had a positive and significant effect on FFB production performance, both partially and simultaneously. Simultaneously, both variables had a significant influence on production performance with an F-count value of 327.507 and a significance level of less than 0.05. The coefficient of determination (R^2) value of 0.960 indicated that 96.0% of the variation in FFB production performance could be explained by human resource planning and supervision functions, while the remaining 4.0% was influenced by other factors outside the study. These findings indicate that the implementation of effective human resource planning and supervision functions can improve the company's production performance.

Keyword: planning; supervision; production performance

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1. INTRODUCTION

Human resources (HR) are strategic assets that play a crucial role in determining the success of an organization. Amid increasingly competitive industrial competition, companies are required not only to possess

adequate physical resources but also to manage their workforce effectively to achieve organizational objectives optimally.

In the palm oil plantation sector, the role of human resources becomes even more significant because most operational activities still depend on employees' skills, discipline, and productivity. The success of the production process is influenced not only by land and crop conditions but also by the company's ability to plan workforce requirements and supervise work implementation in the field.

PT. Perkebunan Nusantara IV Regional VI Aceh is one of the companies operating in the palm oil plantation industry, with its primary focus on the production of Fresh Fruit Bunches (FFB). For plantation companies, achieving FFB production targets is an important indicator for assessing the effectiveness of operational management. Therefore, the implementation of sound HR management functions is an inseparable factor in efforts to improve production performance.

The HR planning function plays a role in ensuring the availability of a workforce that matches operational requirements, including task allocation, employee placement, and work target setting. Effective planning enables production activities to be carried out in a more organized and efficient manner.

Production data from PT. Perkebunan Nusantara IV Regional VI Aceh during the 2021–2025 period indicate a positive trend. FFB production realization consistently exceeded the targets established by the company. This condition suggests that operational management has been effectively implemented, including in the area of human resource management.

Based on the company's production data over the last five years, FFB production realization at PT. Perkebunan Nusantara IV Regional VI Aceh has increased annually. The data are presented in Table 1.

Table 1. Target and Actual FFB Production of PT. Perkebunan Nusantara IV Regional VI Aceh, 2021–2025

Year	Production Target (Tons)	Actual Production (Tons)	Percentage
2021	578,753	589,182	101.8%
2022	630,747	659,777	104.6%
2023	631,450	674,914	106.9%
2024	792,000	889,888	112.4%
2025	671,344	789,816	117.6%

Source: *Regional VI Production Data, 2021–2025.*

Based on Table 1, it can be seen that the company's actual production continuously increased and consistently exceeded the targets that had been established. In 2021, actual production reached 589,182 tons, equivalent to 101.8% of the company's target. In 2022, actual production increased to 659,777 tons, representing 104.6% of the target.

Furthermore, in 2023, actual production increased to 674,914 tons or 106.9% of the target. A significant increase occurred in 2024, when actual production reached 889,888 tons, equivalent to 112.4% of the target. Subsequently, in 2025, actual production reached 789,816 tons or 117.6% of the target.

The increase in actual production indicates that the company has continuously sought to improve operational effectiveness. One factor presumed to contribute to this improvement is the effective implementation of HR planning and supervision functions.

Nevertheless, several operational challenges remain, including delays in completing certain tasks, suboptimal interdepartmental coordination, and the need to enhance the effectiveness of field supervision. These conditions indicate that efforts to improve human resource management must be carried out continuously to support further improvements in the company's productivity.

2. RESEARCH METHOD

This study employed a quantitative research method. Quantitative research is an approach used to examine relationships among variables through statistical data processing and analysis. The research was conducted at PT. Perkebunan Nusantara IV Regional VI Aceh, with the research objects consisting of the human resource (HR) planning function, HR supervision function, and Fresh Fruit Bunches (FFB) production performance.

A. Population and Sample

The population of this study comprised all employees involved in the company's production operational activities. The sampling technique used was purposive sampling, which is a method of selecting samples based on specific considerations that align with the objectives of the study. A total of 30 respondents were selected as the research sample.

B. Data Collection Techniques

The data collection techniques employed in this study included:

1. Questionnaire
2. Documentation
3. Observation

The questionnaire served as the primary research instrument and utilized a Likert scale to measure the respondents' level of agreement with the statements provided.

Table 2. Likert Scale

Response	Score
Strongly Agree (SA)	5
Agree (A)	4
Neutral (N)	3
Disagree (D)	2
Strongly Disagree (SD)	1

C. Research Variables

The variables used in this study were as follows:

- X_1 = Human Resource Planning Function
- X_2 = Human Resource Supervision Function
- Y = Fresh Fruit Bunch (FFB) Production Performance

D. Data Analysis Techniques

The data analysis techniques employed in this study included:

1. Validity Test
2. Reliability Test
3. Multiple Linear Regression Analysis
4. t-Test
5. F-Test
6. Coefficient of Determination (R^2)

Multiple linear regression analysis was used to determine the influence of the HR planning function and HR supervision function on FFB production performance. The multiple linear regression model used in this study is expressed as follows:

$$Y = a + b_1X_1 + b_2X_2 + e \quad (1)$$

Where:

- Y = FFB Production Performance
- a = Constant
- b_1, b_2 = Regression coefficients
- X_1 = Human Resource Planning Function
- X_2 = Human Resource Supervision Function
- e = Error term

3. RESULTS AND DISCUSSION

A. Results of Respondents' Answers on the Human Resource Planning Function Variable

Table 3. Respondents' Answers on the Human Resource Planning Function Variable

No	Statement	SA	A	N	D	SD
1	The company has a clear workforce planning system	12	13	2	2	0
2	Job assignments are allocated according to employees' capabilities	9	18	2	0	0
3	Work targets are clearly determined by the company	6	21	2	0	0
4	The company prepares work schedules regularly	9	20	0	0	0
5	Work planning helps facilitate the production process	9	17	3	0	0

Source: Questionnaire Data, 2026.

Based on the respondents' answers presented in Table 3, the majority of respondents agreed with all indicators of the human resource planning function variable. These findings indicate that the company has implemented the HR planning function effectively, particularly in workforce planning, job allocation, work scheduling, and operational target setting. Such conditions contribute to the smooth execution of the company's production activities.

B. Results of Respondents' Answers on the Human Resource Supervision Function Variable

Table 4. Respondents' Answers on the Human Resource Supervision Function Variable

No	Statement	SA	A	N	D	SD
1	Managers conduct routine supervision of work activities	12	16	1	0	0
2	Work supervision helps reduce operational errors	11	17	1	0	0
3	Work evaluations are conducted periodically	7	21	1	0	0
4	Supervision helps improve work discipline	9	19	1	0	0
5	The company's supervision system operates effectively	11	17	1	0	0

Source: Questionnaire Data, 2026.

Based on the respondents' answers shown in Table 4, the majority of respondents agreed with all indicators of the HR supervision function variable. This finding indicates that the supervision system implemented by the company has been functioning effectively. Routine supervision helps reduce operational errors, improve employee discipline, and enhance overall work effectiveness.

C. Results of Respondents' Answers on the FFB Production Performance Variable

Table 5. Respondents' Answers on the FFB Production Performance Variable

No	Statement	SA	A	N	D	SD
1	The company's production targets can be achieved effectively	11	16	2	0	0
2	The company's production performance has increased	7	19	3	0	0
3	The production process operates effectively	8	21	0	0	0
4	The company's work productivity has improved	9	18	2	0	0
5	Production operations run smoothly	4	24	1	0	0

Source: *Questionnaire Data, 2026.*

Based on the respondents' answers presented in Table 5, the majority of respondents agreed with all indicators of the FFB production performance variable. This finding indicates that the company has been able to maintain operational effectiveness, enabling production targets to be achieved successfully. Furthermore, the production process is perceived to operate effectively, and the company's productivity continues to improve.

D. Multiple Linear Regression Analysis

The results of the multiple linear regression analysis produced the following equation:

$$Y = 4.429 + 0.428X_1 + 0.354X_2 \quad (2)$$

The regression equation indicates that the human resource planning function (X_1) and the human resource supervision function (X_2) have positive effects on FFB production performance (Y). The regression coefficient of the HR planning function is 0.428, indicating that a one-unit increase in the HR planning function is expected to increase FFB production performance by 0.428 units, assuming other variables remain constant. Meanwhile, the regression coefficient of the HR supervision function is 0.354, indicating that a one-unit increase in the HR supervision function will increase FFB production performance by 0.354 units, *ceteris paribus*.

E. Discussion

The findings of this study reveal that the majority of respondents provided positive assessments regarding the implementation of the HR planning function within the company. This suggests that the company has established an effective workforce planning mechanism, particularly in terms of job allocation, work scheduling, and operational target setting. Such conditions serve as important factors supporting the smooth execution of the company's production activities.

Regarding the HR supervision function variable, most respondents also agreed that supervision is conducted regularly and contributes to reducing operational errors. Consistent supervision has a positive impact on employee discipline and promotes the establishment of higher work standards in daily operational activities.

The improvement in the company's operational effectiveness is reflected in the realization of FFB production during the 2021–2025 period, which consistently exceeded the company's production targets. In 2021, actual production reached 589,182 tons, representing 101.8% of the established target. In 2022, actual production increased to 659,777 tons, equivalent to 104.6% of the target. Subsequently, in 2023, actual production reached 674,914 tons, or 106.9% of the target.

A more substantial increase occurred in 2024, when actual production reached 889,888 tons, representing 112.4% of the target. In 2025, actual production amounted to 789,816 tons, equivalent to 117.6% of the company's target. These achievements demonstrate the company's ability to maintain a high level of production performance.

The findings of this study are consistent with the company's actual performance, which shows a continuous increase in production realization throughout the 2021–2025 period. The company's success in exceeding production targets each year indicates that the implementation of HR management functions, particularly planning and supervision, has contributed positively to improving organizational productivity.

Therefore, the better the quality of HR planning and supervision implemented by the company, the greater the opportunity to enhance operational effectiveness, achieve production targets, and sustain production performance over time.

4. CONCLUSION

This study demonstrates that the human resource planning and supervision functions play important roles in supporting Fresh Fruit Bunches (FFB) production performance at PT. Perkebunan Nusantara IV Regional VI Aceh. The findings reveal that the HR planning function has a positive and significant effect on FFB production performance. Effective planning enables the company to manage workforce requirements efficiently, allowing operational activities to be carried out in accordance with established production targets.

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Furthermore, the HR supervision function also has a positive and significant effect on FFB production performance. Consistent supervision enhances employee discipline, reduces operational errors, and ensures that work activities are performed in accordance with company standards. Therefore, the better the implementation of HR planning and supervision functions, the higher the level of production performance achieved by the company.

Based on the findings, PT. Perkebunan Nusantara IV Regional VI Aceh is recommended to further strengthen its human resource planning and supervision systems through improved work coordination, periodic performance evaluations, and continuous employee competency development. These efforts are expected to maintain organizational productivity and support the sustainable achievement of production targets in the future.

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