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Research Article

The Effect of Human Resource Development, Motivation, and Competency Improvement on Employee Performance at PT Perkebunan Nusantara I Regional 7 Kebun Kedaton

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Abstract: This study aims to analyze the influence of human resource (HR) development, work motivation, and competency improvement on employee performance at PT Perkebunan Nusantara I Regional 7 Kebun Kedaton. The research method used is quantitative with a survey approach to a sample of 100 respondents selected based on work productivity criteria. Primary data collection was carried out through the distribution of Likert 1–5 scale questionnaires. Data were analyzed using the Structural Equation Modeling method based on Partial Least Square (SEM-PLS) through SmartPLS software. The results of the study showed that human resource development, motivation, and competency improvement had a positive and significant effect on employee performance, both partially and simultaneously. Work motivation was proven to be the most dominant variable in influencing performance achievement. Simultaneously, the three exogenous variables were able to explain the variation in employee performance by 54.7%, while the remaining 45.3% were influenced by other factors outside the research model. These findings indicate that the integration of capacity building programs through career clarity, the provision of motivational stimuli based on work pride, and the strengthening of field operational competencies are essential strategies in optimizing the productivity of plantation companies.

Keywords: Competency; Employee Performance;Human Resource Development; Motivation; SEM-PLS.

1. Introduction

Human resources are one of the important elements that determine the success of an organization. Employees are not only the implementers of operational activities, but also the drivers who play a role in achieving the company's goals. Therefore, human resource management needs to be directed at improving skills, maintaining motivation, and building competencies that are in accordance with the demands of the job. Human resource management includes workforce planning, placement, training, career development, awarding, coaching, and performance evaluation. Armstrong and Taylor (2014) place HR management practices as an important part of an organization's efforts to manage the workforce and support the achievement of goals. Companies need to ensure that the practice is not only an administrative procedure, but actually helps employees carry out their duties effectively (Andayani & Hirawati, 2021).

Human resource development is one of the aspects that can help employees improve their knowledge and skills. Development can be done through training, coaching, mentoring, coaching, education, certification, and career opportunities. The right development program can strengthen employees' readiness to face job changes and improve the ability to complete responsibilities (Febrianty & Divianto, 2025).

The effectiveness of training is greatly influenced by the suitability of the material with work needs. Training that is not related to daily tasks can be less than optimal in improving

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skills. Therefore, organizations need to identify training needs, set learning goals, and evaluate the implementation of training results after employees return to work.

In addition to human resource development, work motivation is an aspect that needs to be considered. Motivation can be understood as an impulse that affects a person's willingness to do work, exert effort, and maintain perseverance. Awards, recognition, self-development opportunities, job suitability, and employer support can be part of the conditions related to employee motivation (Febrianty et al., 2021).

Motivation is also related to employees' perceptions of the relationship between contribution and reward. When employees understand the assessment criteria and feel that their contributions are recognized, they can have a stronger drive to get the job done. Conversely, the lack of clarity of rewards and lack of communication can be a challenge in maintaining work morale (Aziz et al., 2021).

Another relevant factor is competence. Competence includes the knowledge, skills, and abilities necessary to carry out tasks according to responsibilities. Competencies can be improved through training, guidance, work evaluation, feedback, and facility support. Employees who have competencies according to job demands are expected to be able to carry out procedures, overcome obstacles, and meet work output standards (Febrianty & Divianto, 2025).

Human resource development, motivation, and competencies have conceptual connections. Development provides learning opportunities, motivation encourages employees to put in the effort, while competence helps employees apply knowledge and skills in work. These three aspects can complement each other in supporting performance (Antoni et al., 2025).

Employee performance can be observed through the quality of work output, the number of work completed, productivity, punctuality, discipline, attendance, cooperation, and communication. Good performance can help organizations achieve targets and use resources more effectively. Performance measurement also helps companies know aspects that need to be maintained or improved (Sunyoto & Pungkasno, 2024).

This research focuses on PT Perkebunan Nusantara I Regional 7 Kebun Kedaton. In the plantation company environment, the implementation of tasks requires coordination, compliance with procedures, accuracy of implementation, and the ability of employees to carry out their responsibilities. These conditions make the development and management of human resources relevant to be studied in relation to performance.

Previous research such as Andayani and Hirawati (2021) discussed HR training and development in relation to employee performance. Aziz, Widodo, and Subagja (2021) also examined training, human resource development, motivation, and performance. The study is a conceptual reference, while this study provides an overview of the context of PT Perkebunan Nusantara I Regional 7 Kebun Kedaton.

This study aims to analyze the influence of human resource development on employee performance, the influence of motivation on performance, the effect of competency improvement on performance, and the ability of the three variables to explain performance variations together. The results of the study are expected to make an academic contribution to the study of human resource management and practical input for employee management.

2. Literature Review

Human resource management

The main conceptual foundations underlying this research are Human Resource Development Theory and Human Capital Theory. Human Resource Development Theory emphasizes that the long-term performance of an organization is highly determined by the capacity of management to make continuous investments in the competencies, skills, and work motivation of its employees through planned training and clear career development. This theory is relevant in explaining that the company's internal intervention in improving the quality of employees will have a direct impact on increasing the organization's operational productivity. In line with this, the Human Capital Theory developed by (Becker, 1993) views that the knowledge, expertise, and capabilities inherent in employees are the company's strategic productive assets. Investment in human capital through job training, educational certification, and direct technical guidance will increase work efficiency, reduce the rate of

operational errors, and encourage employees to contribute to the best work performance to achieve company targets (Aziz et al., 2021).

Employee Performance

Employee performance is basically a reflection of the real work results achieved by an employee in carrying out his duties and responsibilities in accordance with the evaluation standards that have been set by the organization. Based on organizational behavior theory, performance is a multiplicative function of the interaction between individual abilities (abilities), psychological motivation (motivation), and the availability of organizational support opportunities (opportunities). In a labor-intensive plantation industry ecosystem, performance is not only assessed from the fulfillment of the volume of daily production quantities alone, but also demands punctuality of task completion, strict level of operational discipline, consistent attendance, and interpersonal ability to communicate and cooperate effectively within the field team. Effective performance management requires measurable Key Performance Indicators (KPIs) so that employee work results are in line with the company's cost efficiency and yield targets (Lutfiah & Oktiani, 2024)

Human Resource Development

Human resource development is a planned, systematic, and sustainable process implemented by organizations to expand knowledge horizons, improve technical skills, and shape employees' professional attitudes. Through a modern management approach, human resource development is operated through two main pillars, namely the implementation of specific job training programs based on field practice, as well as the preparation of a clear and transparent career development scheme for all levels of employees. This development activity is also strengthened through non-training interventions in the form of operational coaching programs and intensive guidance from superiors. In the plantation industry, strengthening the dimension of sustainable human resource development aims to form a workforce that is adaptive to technological transition, independent in making operational technical decisions, and ready to be promoted to higher positions based on work performance competencies (Febrianty & Divianto, 2020).

Work Motivation

Work motivation is defined as the force of psychological motivation, both from within the individual (intrinsic) and from outside the individual (extrinsic), that drives the intensity, direction, and perseverance of employees' behavior at work. Referring to Herzberg's Two-Factor Motivation Theory, a worker's great technical ability will not be able to produce optimal operational performance if it is not supported by a strong motivation to perform. In the work environment, extrinsic motivation is formed through the effectiveness of the company's reward system, the provision of productivity-based incentives, and formal recognition of work contributions. Meanwhile, intrinsic motivation is triggered by the compatibility between the field of task and the educational background, a sense of pride in the profession undertaken, and the possession of a high sense of emotional responsibility for the success of achieving the company's organizational targets (Aziz et al., 2021). .

Increased Competence

Competency improvement is a series of structured efforts by organizations to sharpen the combination of knowledge, practical skills, work attitudes, and professional values that employees must possess in order to meet job qualification standards. Based on the functional competency model, the improvement of the skill capacity of field employees is highly dependent on the clarity of job guidance, the sensitivity of providing operational direction from superiors, and the consistency of the implementation of work evaluations. The results of the evaluation feedback act as a critical reflection for employees to understand the strengths and correct their skills shortcomings. In addition to individual capacity factors, the fulfillment of work competencies in the field requires adequate infrastructure support and reliable technical assistance from the company so that all obstacles to daily technical tasks can be solved effectively and efficiently (Andarini et al., 2025)

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3. Materials and Method

Quantitative research using this survey method was carried out at PT Perkebunan Nusantara I Regional 7 Kebun Kedaton. The population in this study is all employees of Kebun Kedaton which is 161 people. Using certain sample withdrawal criteria

(purposive/quota sampling), a representative sample of 100 respondents who meet the characteristics of productive age (18–56 years), have the last education at least high school/vocational school equivalent, and have at least 6 months of operational work experience. Primary data collection was carried out directly (offline) through the distribution of a closed questionnaire instrument that adopted a 5-point Likert Scale, ranging from a score of 1 (Strongly Disagree) to a score of 5 (Strongly Agreed) (Rahayu et al., 2025).

The research operational model divides variables into three independent constructs, namely Human Resources Development (X1) with indicators of job training and career development; Work Motivation (X2) with indicators of work appreciation and educational relevance; and Competency Improvement (X3) with indicators of knowledge mastery and guidance/direction. These three constructs were tested for their influence on one dependent construct, namely Employee Performance (Y) which was measured through indicators of work quality, quantity, punctuality, discipline, and interpersonal ability. Statistical analysis of the data was operated through the Structural Equation Modeling method based on Partial Least Square (SEM-PLS) using SmartPLS software. The testing stages are carried out in layers, starting with the Evaluation of the Measurement Model (Outer Model) to verify the reliability of the construct and validity (convergent and discriminant), followed by the Evaluation of the Structural Model (Inner Model) to see the value of the determination coefficient (R2) and the value of predictive relevance (Q2). The hypothesis test is carried out through a bootstrapping procedure with an acceptance threshold if the t-statistical value is > 1.96 and the p-value is < 0.05 (Sitorus et al., 2024).

4. Results and Discussion

Research Results

Before testing the structural model with SEM-PLS, a descriptive analysis was conducted to provide an overview of the demographic profile of the sample and the tendency of respondents' perception of the study variables. Details of the characteristics of 100 respondents (out of a total population of 161 people**)** as well as the mean values of each variable at PT Perkebunan Nusantara I Regional 7 Kebun Kedaton are presented in Table 1.

Table 1. Characteristics of Respondents and Descriptive Variables

Features	Category	Quantity	Percentage	Research Variables	Average (Mean)	Category
Gender	Male	70	70,00%	Work Motivation (X2)	4,417	Very High
	Women	30	30,00%			
Age	< 25 Year	39	39,00%	Human resource development (X1)	4,408	Very High
	25–34 Year	14	14,00%			
	36–45 Year	14	14,00%	Employee Performance (Y)	4,402	Very High
	> 45 Year	33	33,00%			
Work Unit / Divided	Operational	24	24,00%	Increased Competence (X3)	4,365	Very High
	Administration	9	9,00%			
	Managerial	6	6,00%			
	Others (Field)	61	61,00%			
	Total	100	100 %			

Based on Table 1, the data collection results show the specific demographic characteristics of the 100 employees who are respondents. The composition of respondents by gender shows a strong dominance of male workers, which is 70 people (70.00%), while female workers amount to 30 people (30.00%). This reflects the characteristics of the plantation operational industry which physically demands high-intensity field activities. Viewed from the age aspect, the majority of respondents are in the young age group < 25 years old at 39.00% (39 people), followed by the senior age group > 45 years old as many as 33.00% (33 people), while the rest are in the middle age group. Furthermore, based on work

units or divisions, the Other section (Field/Technical Personnel) dominates up to 61.00% (61 people), followed by the Operational (24.00%), Administration (9.00%), and Managerial (6.00%) divisions.

In the descriptive part of the variable, the statistical results showed that all research variables were included in the Very High category (average score > 4.20). The Work Motivation variable (X2) recorded the highest score of 4.417, which indicates the strength of internal drive and employee pride in their work. Furthermore, the HR Development variable (X1) has an average of 4.408 which reflects the good perception of employees towards the organization's career opportunities. The Employee Performance variable (Y) obtained a score of 4.402 which indicates an optimal level of productivity and work discipline. Finally, the Competency Improvement variable (X3) recorded an average of 4.365, indicating that the availability of facilities and technical assistance from the company is considered to greatly support employees' expertise in completing daily tasks at Kebun Kedaton.

Convergent Validity and Construct Reliability Test Results

Table 2. Convergent Validity and Construct Reliability Test Results

Variable Leave	Outer Loading Range	Cronbach's Alpha	Composite Reliability (rho_c)	Remarks
Human resource development (X1)	0,527 – 0,748	0,748	0,825	Valid & Reliable
Work Motivation (X2)	0,555 – 0,721	0,754	0,830	Valid & Reliabel
Increased Competence (X3)	0,626 – 0,741	0,760	0,833	Valid & Reliabel
Employee Performance (Y)	0,568 – 0,748	0,845	0,878	Valid & Reliabel

The results of the data calculation in Table 2 show that all statement items are proven to be valid convergently because they have an outer loading value range above the minimum threshold of 0.50. In the reliability test, the internal consistency level of the questionnaire was declared very reliable because the Cronbach's Alpha (>0.74) and Composite Reliability (>0.82) parameters for the four research variables had exceeded the critical feasibility standard of 0.70. This data proved that the questionnaire instrument was free from random measurement errors.

Average Variance Extracted (AVE) Test Results

To complete the prerequisites for the convergent validity test at the construct level, the average value of the variance successfully extracted from each latent indicator (Average Variance Extracted / AVE) is calculated to ensure that the magnitude of the error does not dominate the model.

Table 3. Average Variance Extracted (AVE) Test Results

Research Variables	Average Variance Extracted (AVE)	Minimum Limits	Remarks
Human Resource Development (X1)	0,644	0,50	Valid in a Convergent manner
Motivasi Kerja (X2)	0,706	0,50	Valid in a Convergent manner
Increased Competence (X3)	0,655	0,50	Valid in a Convergent manner
Employee Performance (Y)	0,526	0,50	Valid in a Convergent manner

Based on the data presentation in Table 3, the results of the AVE parameter test showed that the value for all latent constructs was consistently above the minimum limit of the PLS-SEM methodology, which was 0.50. The highest AVE index was owned by the Work Motivation construct (0.706), followed by Competency Improvement (0.655), Human Resources Development (0.644), and Employee Performance (0.526). Through the fulfillment of this criterion, the model was declared to be convergently valid, which indicates that the construct is able to explain more than 50% of the variance of its forming indicators.

Cross Loading Value Matrix

The next stage of testing is to verify the discriminant validity at the indicator level to ensure that each statement indicator is only strongly correlated to the original latent construct and does not trigger cross-loading bias with other constructs.

Table 4. Cross Loading Value Matrix

Indicator	X1(Human resource development)	X2 (Motivation)	X3 (Improved Competence)	Y (Employee Performance)	Remarks
X1.1	0,527	0,270	0,256	0,203	Valid
X1.2	0,640	0,377	0,287	0,299	Valid
X1.3	0,753	0,450	0,335	0,390	Valid
X1.4	0,681	0,418	0,387	0,353	Valid
X1.5	0,620	0,484	0,372	0,397	Valid
X1.6	0,748	0,481	0,385	0,377	Valid
X2.1	0,422	0,555	0,372	0,304	Valid
X2.2	0,396	0,669	0,390	0,439	Valid
X2.3	0,378	0,657	0,385	0,408	Valid
X2.4	0,431	0,691	0,456	0,563	Valid
X2.5	0,470	0,721	0,488	0,457	Valid
X2.6	0,455	0,721	0,498	0,522	Valid
X3.1	0,346	0,432	0,696	0,430	Valid
X3.2	0,380	0,429	0,626	0,421	Valid
X3.3	0,323	0,431	0,643	0,419	Valid
X3.4	0,325	0,484	0,665	0,402	Valid
X3.5	0,343	0,466	0,741	0,565	Valid
X3.6	0,366	0,373	0,671	0,407	Valid
Y1.1	0,333	0,355	0,302	0,443	Valid
Y1.10	0,422	0,403	0,463	0,644	Valid

Based on the exposure of the cross-correlation matrix value in Table 4. It can be seen that the loading factor value of each indicator (the number corresponding to its variable) is proven to be much greater for its original latent construct than for the cross-correlation for other latent constructs. The characteristics of these statistical parameters confirm that the discriminant validity at the indicator level has been fulfilled and is satisfactorily valid.

Discriminan validity testing

The test of discriminant validity at the construct level was then assessed based on a comparison of the Fornell-Larcker criteria, i.e. by ensuring that the square root of the AVE value of each latent variable was greater than its correlation value with the comparative construct.

Table 5. DiscriminanValidity Test (Fornell-Larcker Criteria)

Variable Leave	Human resource development (X1)	Work Motivation (X2)	Increased Competence (X3)	Employee Performance (Y)
Human resource development (X1)	0,666			
Work Motivation (X2)	0,635	0,671		
Increased Competence (X3)	0,513	0,648	0,675	
Employee Performance (Y)	0,519	0,678	0,658	0,652

In accordance with the data provisions in Table 5, the AVE square root acquisition for each latent variable (main diagonal number) shows a correlation value that is consistently much higher than the surrounding linear correlation number. This proves that each of the variables studied has a very clear structural concept (discriminant) difference and is suitable for use in the model.

Discriminan Validity Test

To complement the validity of discriminant validity with a more modern approach, a Heterotrait-Monotrait correlation ratio (HTMT) test was carried out to detect the presence or absence of latent multicollinearity bias.

Tabel 6. Uji Validitas Discriminan (Heterotrait-Monotrait Ratio / HTMT)

Variable Leave	Human resource development (X1)	Work Motivation (X2)	Increased Competence (X3)	Employee Performance (Y)
Human resource development (X1)	—			
Work Motivation (X2)	0,827	—		
Increased Competence (X3)	0,675	0,849	—	
Employee Performance (Y)	0,638	0,830	0,810	—

The results of the statistical analysis in Table 6. prove that the entire value of the HTMT ratio between latent variables is absolutely below the critical limit agreed upon by the methodological experts, which is 0.90. The highest correlation index is 0.849 (competency-motivation correlation). These figures confirm the previous conclusion that the test instrument is free from multicollinearity bias.

Model Struktural (Inner Model)

After the measurement model is proven to be valid and reliable, an evaluation of the structural model (inner model) is carried out to measure the model's predictive capacity through the size of the determination coefficient value parameter (R-Square) and the level of prediction relevance (Q-Square).

Table 7. Evaluation of Structural Models (Inner Model)

Variable endogenous	R-Square (R2)	R-Square Adjusted	Predictive Relevance (Q2)	The Power of Model Prediction
Employee Performance (Y)	0,547	0,538	0,223	Moderat

Based on the presentation of data in Table 7, an R2 value of 0.547 was obtained, which means that a simultaneous combination of variables of human resource development, motivation, and competency improvement was able to explain the variation in employee

performance by 54.7%, with a predictive strength of the moderate category. In addition, the positive value of Q2 (0.223 > 0) proves that the constructed structural model has adequate predictive ability relevance..

Partial Hypothesis Test Results (Path Coefficients)

The final testing stage was carried out to prove the partial acceptance or rejection of the research hypothesis through the magnitude of the path coefficients as well as the significance of t-statistical and p-values using the bootstrapping technique.

Table 8. Partial Hipotesis Test Results (Path Coefficients)

Hipotesis	Inter-Variable Influence	Path Coefficients	t-Statistik	p-Value	Verdict
H1	Human resource development (X1) -> Employee Performance (Y)	0,087	8,887	0,003	Accepted
H2	Work Motivation (X2) -> Employee Performance (Y)	0,389	4,078	0,000	Accepted
H3	Increased Competence (X3) -> Employee Performance (Y)	0,362	4,335	0,000	Accepted

Based on the details of the statistical parameters in Table 8, the partial hypothesis proof shows that the three independent variables partially have a positive and significant influence on employee performance because the p-value is < 0.05 and the t-statistic is > 1.96. The Work Motivation Pathway recorded the highest coefficient (0.389), followed by Competency Improvement (0.362), and Human Resources Development recorded the lowest coefficient (0.087).

Discussion

Analysis of the Influence of Human Resource Development on Employee Performance (H1)

Based on the results of the structural model test, the first hypothesis (H1) that states that Human Resource Development has a positive and significant effect on Employee Performance is accepted, with a path coefficient value of 0.087, t-statistic of 8.887, and p-value of 0.003. Although the path coefficient value is relatively small compared to other exogenous variables, the very high level of significance shows that the HR development intervention carried out by PT Perkebunan Nusantara I Regional 7 Kebun Kedaton has statistical legal certainty in triggering an increase in employee work. (Andayani, 2021).

Theoretically, these findings strengthen the foundation of Human Resource Development Theory which states that an organization's investment in human capacity will exponentially return in the form of improved work performance. The results of the descriptive analysis identified that the main strength indicator of this variable lies in the clarity of career development opportunities, as reflected in the statement 'The company provides opportunities for employees to develop their careers' (X1.3) which recorded the highest average score of 4,447. Psychologically, career path certainty acts as a long-term retention and stimulus instrument. Field employees and staff believe that there is a linear correlation between their current productivity contribution and future structural recognition, which reduces employee turnover and builds strong effective commitments (Aziz et al., 2021).

In contrast, the job training indicator through the statement 'Training provided by the company helps me improve my job skills' (X1.1) contributed the lowest reinforcement with an average of 4,280. This empirical phenomenon indicates a gap in the transfer of training. Employees perceive that training programs that are carried out on a regular basis are sometimes too theoretical-administrative and less adaptive to dynamic constraints in the plantation field, such as microclimate change or specific rubber tapping efficiency techniques. Therefore, the effectiveness of this sub-variable has not been felt instantly in simplifying the daily workload. These findings are in line with research (Nuryanto & Utomo, 2025) which confirms that a planned human resource development program does not only increase technical capacity, but also develops sustainable structural work readiness.

The Effect of Motivation on Employee Performance (H2)

The results of the analysis prove that the second hypothesis (H2) is accepted absolutely, where work motivation has a positive and significant effect on Employee Performance with a path coefficient of 0.389, t-statistic of 4.078, and a p-value of 0.000. This coefficient number positions work motivation as the most dominant variable affecting employee performance achievement at PT Perkebunan Nusantara I Regional 7 Kebun Kedaton. This dominance explains that in the characteristics of the agricultural industry that is labor-intensive and demands high physical endurance, the possession of internal psychological impulses is much more powerful in determining work output than formal regulations alone.

Intrinsic foundation is the main driving force for this variable, where the indicator of pride in work through the statement item 'The work I do is in accordance with my education and abilities' (X2.6) achieved the highest average score of 4,491. Professional pride as part of a plantation SOE creates the internalization of organizational values into the personal identity of employees. This triggers the emergence of Organizational Citizenship Behavior (OCB), where employees voluntarily maintain the quality of crops, calm down tapping techniques, and work beyond schedule standards without feeling burdened. This pride-based intrinsic motivation compensates for the heaviness of physical work routines in the plantation area. (Fajar et al., 2018).

However, the test results also provide an important evaluation signal on the indicator of appreciation for contribution (X2.1) which recorded the lowest average value (4.304). This symptom suggests that management has not formulated a pattern of non-financial rewards evenly. Verbal appreciation from leaders or a team reward system that is not optimal has the potential to erode work motivation in the long run. If employees feel that their hard work in meeting production targets is not being specifically recognized, then the accumulation of internal pride can gradually shrink. The determination of the dominance of this motivational variable supports empirical results (Basyid, 2024) and (Norkhalisah et al., 2024) which state that well-managed work motivation is the strongest psychological determinant in controlling the level of attendance, discipline, and interpersonal work quality of employees.

The Effect of Improving Human Resource Competence on Employee Performance (H3)

The test on the third hypothesis (H3) proves that Competency Improvement has a positive and significant effect on Employee Performance, with a path coefficient of 0.362, t-statistic of 4.335, and p-value of 0.000. The contribution of the influence of competence is slightly below the motivation variable, which confirms the position of competence as an operational prerequisite that must be met in order to achieve the efficiency of the modern plantation industry.

Contextually, the technical skills and soft skills of employees in the field are strongly controlled by external factors of the organization. This is evidenced by the indicator of the adequacy of the company's support in completing tasks through the statement 'I get enough support from the company in completing the work' (X3.5) which recorded the greatest reinforcing impact for this variable. In the Kebun Kedaton ecosystem, operational support in the form of the availability of personal protective equipment (PPE), the accuracy of the distribution of production facilities, and the implementation of a digital reporting system greatly facilitate the accuracy of the work of field employees. Employees who are knowledgeably competent will not be able to produce optimal harvest performance without a reliable supply of infrastructure from the company. Therefore, the integration between individual capacity and the availability of physical capital (job resources) is the key to successful work performance (Syafiah et al., 2026).

On the other hand, the task comprehension indicator through direct supervisor instruction through the item 'Supervisor gave clear work directions and helped me complete the task (X3.1) being the weakest point with an average score of 4,298. Reality on the ground shows that the high managerial workload of foremen often limits the space for two-way communication and in-depth coaching processes. Employees often have to make operational decisions independently based on past experience (tacit knowledge) without standardization confirmation from superiors. This lack of structured direction risks giving rise to non-uniform variations in the quality of operational output. The conclusion on this point is in line with the principles of Human Capital Theory from (Becker, 1993) as well as

the results of empirical studies and (Nahrisah et al., 2024), which states that deep mastery of work competencies will give birth to high confidence, schedule compliance, and minimal delay in work activities.

Simultaneous Influence (Synergy of H4 Structural Model)

Testing the fourth hypothesis (H4) simultaneously showed an R-Square value of 0.547 and an Adjusted R-Square of 0.538. These findings mean that the harmonious combined contribution of the variables Human Resource Development, Work Motivation, and Competency Improvement simultaneously controlled the path of employee performance and productivity by 54.7%. While the remaining 45.3% was determined by other organizational macrofactors that were not explored in this structural modeling, such as the effectiveness of field leadership styles, satisfaction with financial compensation, and company culture dynamics (Andreawan & Triyanto, 2025).

In terms of managerial analysis, the determination value of 54.7% is at the level of predictive strength in the moderate (medium) category, which reflects that this structural model is very realistic and applicable to the operations of state-owned companies. Employee performance in the plantation sector is proven to be not driven by a single stimulus, but is the product of a balanced HR management ecosystem interaction. Human resource development is tasked with expanding the long-term potential of employees, Competency Improvement fills the container with practical skills and real work facilities, while Work motivation acts as a psychological fuel that drives all of these instruments consistently. If one of these components is ignored—for example, the company provides advanced work facilities but the employee's mentality is demotivated due to a lack of rewards, total operational efficiency is impossible to achieve (Hendra Hadiwijaya & Febrianty, 2019).

The presence of a Predictive Relevance (Q2) value of 0.223 ($Q2 > 0$) confirms the conceptual feasibility of this model, which means that the combination formula of these three exogenous variables has high predictive accuracy if implemented in similar plantation units under the auspices of PTPN. These strong simultaneous findings are in line with (Suhartono et al., 2023) which affirms that the effectiveness of modern HR management must abandon a partial-fragmented approach and shift towards a synergistic-systemic approach to respond optimally to industrial dynamics.

5. Conclusion

Based on the results of structural model testing using the SEM-PLS approach, it can be concluded that employee performance at PT Perkebunan Nusantara I Regional 7 Kebun Kedaton is partially positively and significantly influenced by three main management instruments, namely human resource development, work motivation, and competency improvement. The results of the analysis show that work motivation acts as the most dominant psychological determinant in controlling the achievement of employee work results, which is internally driven by the high level of employee pride in their profession within the company. On the other hand, competency improvement occupies the second largest reinforcing position where the mastery of employees' operational technical skills in the field is optimally supported by the availability of facilities and technical assistance from the company. Meanwhile, the variable of human resource development is also proven to have statistical certainty in increasing productivity through ensuring the certainty of a structured long-term career path for all employees.

Simultaneously, the harmonious synergy between human resource development programs, work motivation stimulus, and the fulfillment of competency improvement facilities has been proven to have a positive and significant effect on employee performance. The combination of these three independent variables recorded predictive power in the moderate category with the ability to explain the variation in employee performance of 54.7%. This value emphasizes that the effectiveness of work output in the plantation sector cannot be driven by a single stimulus, but is the product of a balanced management ecosystem interaction between the expansion of individual capacity, the provision of reliable physical facility capital, and the maintenance of employee work mentality. Meanwhile, the remaining 45.3% variation in performance is explained by other external variables outside this research model.

References

Andarini, A., Silalahi, I. ornella B., Roslina, R. M. L., Simamora, N. E., & Yusrita. (2025). Analysis of Factors of Self-Learning , Supervisory Guidance and Work Experience on Employee Competency with Organizational Support as Moderation Variables at State Financial Audit Education and Training Center Medan , Audit Board of the Republic of Indone. *Journal of Global Economics, Management and Business Research*, *17*(3), 182–190. https://doi.org/10.56557/jgembr/2025/v17i39727

Andayani, T. B. N., & Hirawati, H. (2021). PENGARUH PELATIHAN DAN PENGEMBANGAN SDM TERHADAP KINERJA KARYAWAN PT POS INDONESIA CABANG KOTA MAGELANG. *Jurnal Ilmiah Manajemen Ubhara*, *3*(2), 11–21. https://doi.org/10.31599/jmu.v3i2.982

Andreawan, F., & Triyanto. (2025). *PENGARUH PELATIHAN, MOTIVASI DAN PENGEMBANGAN SDM TERHADAP KINERJA KARYAWAN*. *09*(02), 1–9. https://doi.org/10.29040/jie.v9i2.17066

Antoni, D., Febrianty, & Wadud, M. (2025). *A Digital Village Model For Supply Chain Management Capabilities Development In Micro-Small-Medium Enterprise In South Sumatra. Information Technology For Development*. *31*(4), 1511–1545. https://doi.org/ 10.1080/02681102.2025.2502417

Aziz, I. N., Widodo, D. S., & Subagja, I. K. (2021). *Effect of Training and HR Development on Employee Performance with Motivation as an Intervening Variable in PT . Rekasis Gigatama*. *06*(02), 169–181. https://doi.org/10.30574/gjeta.2021.6.2.0032

Basyid, A. (2024). *PENGARUH MOTIVASI KERJA TERHADAP KINERJA KARYAWAN*. *7*(1), 39–43. https://doi.org/10.52624/manajerial.v7i1.2430

Becker, G. S. (1993). *Human capital: A theoretical and empirical analysis with special reference to education (3rd ed.)*. The University of Chicago Press.

Fajar, H., Yuniarsih, T., & Ahman, E. (2018). *PENGARUH PEMBERIAN PENGHARGAAN DAN HUKUMAN TERHADAP MOTIVASI KERJA SERTA IMPLIKASINYA PADA KINERJA KARYAWAN PT DIFA KREASI DI CIKARANG – BEKASI*. *9*(1), 35–43. https://doi.org/10.17509/jimb.v9i1.12979

Febrianty, & Divianto. (2020). *BUSINESS OWNER ' S PERSPECTIVE ON STRATEGIC EXECUTION , TECHNOLOGICAL TRANSFORMATION , COMPETITIVENESS POTENTIAL , AND SERVICES LEVEL ON THE IMPLEMENTATION OF*. *8*(1), 567–585. https://doi.org/10.18510/hssr.2020.8169_1

Febrianty, & Divianto. (2025). *Training and Mentoring for the Business Process of the Nile Tilapia Processing Center "Sandara" Lumbok Seminung West Lampung*. *1*(2), 55–59. https://doi.org/10.70310/jhim.2025.03010666

Febrianty, Divianto, & Sentanu, I. G. E. P. S. (2021). Penerapan SMAC Framework dan Kinerja UMKM Kuliner : Pengaruh Moderasi Pemanfaatan Analitik Data. *Https://Jurnal.Itscience.Org/Index.Php/Jumansi*, *5*(1), 210–221.

Hendra Hadiwijaya, & Febrianty. (2019). The Effect Of Creative Leadership And Knowledge Sharing On Employee Performance. International Journal Of Scientific And Research Publications. *(Ijsrp)*, *9*(7), P9142. Https://Doi.Org/10.29322/Ijsrp.9.07.2019.P9142

Lutfiah, S., & Oktiani, N. (2024). *Pengaruh Disiplin Kerja Dan Kepuasan Kerja Terhadap Kinerja Karyawan Pada PT . Pustaka Gemilang Motor*. *2*(3). https://doi.org/10.47861/sammajiva.v2i2.1138

Nahrisah, E., Juwita, B., Manullang, M., & Fahlevi, A. (2024). *Pengaruh Kompetensi , Pengembangan Sumber Daya Manusia terhadap Kinerja Pegawai dengan Motivasi sebagai Variabel Intervening*. *4*(2), 91–102.

Norkhalisah, Budiman, A., & Noorrahman, M. F. (2024). *Pengaruh motivasi kerja terhadap kinerja pegawai pada dinas pendidikan dan kebudayaan kabupaten balangan*. *1*(2), 276–280.

Nuryanto, S., & Utomo, H. (2025). *PENGARUH PENGEMBANGAN DAN PEMBERDAYAAN SUMBER DAYA MANUSIA TERHADAP KINERJA KARYAWAN (STUDI DI PT ASTON SISTEM INDONESIA DI SALATIGA) 18*(2), 254–266.

Rahayu, M. P., Eliza, A., & Rifan, D. F. (2025). PENGARUH AKUNTANSI PERTANGGUNGJAWABAN DAN MOTIVASI KERJA TERHADAP KINERJA MANAJERIAL DI PT PERKEBUNAN NUSANTARA I REGIONAL 7 KEBUN KEDATON DESA WAY GALIH KEC. TANJUNG BINTANG KAB. LAMPUNG SELATAN. *Jurnal Keuangan Dan Manajemen Akuntansi*, *07*(2), 8–34.

Sitorus, R. B., Tamba, W., Setyobudi, D., & Sumali, B. (2024). PERAN KESELAMATAN AWAKKAPAL MEMEDIASI PERAWATAN PERALATAN KESELAMATAN TERHADAP KINERJA AWAKKAPAL SK OFFSHORE MARINE DI PELABUHAN. *Jurnal Ilmiah MEA (Manajemen, Ekonomi, Dan Akuntansi)*, *8*(2), 726–752.

Suhartono, Sulastiningsih, Chasanah, U., Widiastuti, N., & Purwanto, W. (2023). *THE RELATIONSHIP OF LEADERSHIP , DISCIPLINE , SATISFACTION , AND PERFORMANCE : A CASE STUDY OF STEEL MANUFACTURE IN INDONESIA Article history : Keywords : Transactional Leadership ; Transformational Leadership ; Work Discipline ; The Relationship of Leade*. (71), 1–12. https://doi.org/10.26668/businessreview/2023.v8i2.1146

Sunyoto, D., & Pungkasno, C. (2024). *DAMPAK BURNOUT PADA KINERJA : KEPUASAN KERJA SEBAGAI PEMEDIASI (STUDI KASUS : PERSONEL POLRES KULON PROGO). 15*(1), 1–18.

Syafiah, Y., Ritonga, H. M., & Surya, E. D. (2026). *The Effect of Training and Competency on the Performance of Employees with Work Facilities as Intervening Variables at the Manpower, Cooperatives, Small and Medium Enterprises Office of Serdang Bedagai Regency*. *4*(2), 2932–2944. https://doi.org/10.61994/equivalent.v4i2.1983