

Work Engagement as a Strategic Mechanism for Employee Performance: Evidence from PTPN IV Regional-II, North Sumatera, Indonesia

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DOI: <https://doi.org/10.51583/IJLTEMAS.2026.150900028>

Received: 14 September 2026; Accepted: 19 September 2026; Published: 03 October 2026

ABSTRACT

Organizational transformation in the plantation sector demands improved employee performance through strengthening professional competence, organizational culture, and work engagement. This study aims to analyze the influence of Professional Competence and Organizational Culture on Employee Performance and examine the role of Work Engagement as a mediating variable at PT Perkebunan Nusantara IV Regional II North Sumatera. The study used a quantitative approach with an explanatory research design. Data were collected through a five-point Likert scale questionnaire and involved 126 respondents selected using proportionate stratified random sampling. Data analysis was performed using IBM SPSS Statistics 26 and Partial Least Squares–Structural Equation Modeling (PLS-SEM). The results showed that Professional Competence had a positive effect on Employee Performance ($\beta = 0.304$; $p < 0.000$) and Work Engagement ($\beta = 0.374$; $p = 0.001$). Organizational Culture also has a positive effect on Employee Performance ($\beta = 0.226$; $p = 0.016$) and Work Engagement ($\beta = 0.411$; $p = 0.001$). Furthermore, Work Engagement has a positive effect on Employee Performance ($\beta = 0.388$; $p < 0.000$) and mediates the influence of Professional Competence ($\beta = 0.145$; $p = 0.001$) and Organizational Culture ($\beta = 0.160$; $p = 0.015$) on Employee Performance. This finding confirms that strengthening organizational competence and culture needs to be accompanied by increasing work engagement to optimize employee performance in the plantation sector.

Keywords: Professional Competence, Organizational Culture, Work Engagement, Employee Performance, PTPN IV Regional-II

INTRODUCTION

The increasing complexity and uncertainty of the business environment places human resources as a strategic asset in creating competitive advantage. A company's success is determined not only by operational efficiency but also by the ability to manage employees to be adaptive, innovative, and achieve sustainable performance. From a Strategic Human Resource Management (SHRM) perspective, employee performance is the result of human resource management that aligns with organizational goal (Dessler, 2020; Robbins & Judge, 2022). In the context of plantation companies, performance achievement is increasingly dependent on professional competence, organizational culture, and work engagement as factors that shape employee behavior and work results.

Professional competence reflects an employee's ability to carry out work through knowledge, skills, experience and work behavior (Armstrong & Taylor, 2023). Empirical evidence in the palm oil industry shows that competence is related to employee performance (Evianisa et al., 2021), while research at PTPN IV also shows the relationship between competence and work productivity (Sitorus et al., 2025). On the other hand, organizational culture forms values and rules that serve as a reference for employee behavior and coordination, while work engagement reflects a psychological state with enthusiasm, dedication, and appreciation for work (Schein & Schein, 2021; Bakker et al., 2023). In the plantation sector, employee engagement has also been shown to be related to employee performance (Noviardy & Aliya, 2020; Sulistiono et al., 2019), including the PTPN company (Novrini et al., 2026).

Several studies indicate that professional competence, organizational culture, and work engagement contribute to employee performance (Mahendra et al., 2024; Dewi et al., 2023; Singh et al., 2025). However, the strength of the direct influence of competence and organizational culture on performance is not yet completely consistent (Mering et al., 2023; Lesmana et al., 2025). Findings in plantation companies also show the importance of work engagement as a factor linking organizational conditions with employee work outcomes (Noviardy & Aliya, 2020; Sulistiono et al., 2019). This difference indicates that the correlation between professional competence and organizational culture with performance can occur through a psychological mechanism in the form of work engagement.

This phenomenon is relevant to the situation of PT Perkebunan Nusantara IV Regional II North Sumatera, which is currently undergoing organizational transformation after the merger and implementing AKHLAK values as a state-owned enterprise work culture. Although the company's performance shows positive developments, initial observations still indicate the need to strengthen work experience, organizational commitment, work engagement, and employee responsiveness. This condition indicates that successful organizational transformation requires not only increased competency but also a strengthened organizational culture that can encourage employee engagement. This context is increasingly relevant because research in the plantation environment shows that work engagement is related to employees' ability to cope with organizational change (Zulkarnain et al., 2023) and work productivity (Novrini et al., 2026).

Based on the empirical gap, this study will examine the mediating role of Work Engagement in the relationship between Professional Competence and Organizational Culture on Employee Performance at PT Perkebunan Nusantara IV Regional II North Sumatera. This model is expected to enrich the study of Human Resource Management by explaining work engagement as a psychological mechanism that connects professional competence and organizational culture with employee performance, while providing practical implications for strengthening human resource management policies in the plantation sector.

LITERATURE REVIEW

Organizations can achieve their goals optimally if they are supported by employees' abilities to perform their jobs effectively. From a Strategic Human Resource Management (SHRM) perspective, employee performance is the outcome of human resource management that develops competencies, builds a supportive organizational culture, and creates high levels of work engagement (Dessler, 2020; Robbins & Judge, 2022). In the plantation context, the interrelationship of these factors is increasingly important because job characteristics demand competence, behavioral consistency, and employee involvement in achieving productivity. Research at PTPN IV Sidamanik Plantation Unit also demonstrates the importance of internal employee factors in supporting performance in the plantation environment (Butarbutar et al., 2023).

Professional Competence reflects employee capabilities through knowledge, skills, experience, abilities, and professional attitudes in carrying out work. Adequate competency enables employees to complete tasks effectively, adapt to change, and achieve better performance (Armstrong & Taylor, 2023; Tarfin et al., 2023). Empirical evidence at PTPN III shows a relationship between competency and employee performance (Irawadi et al., 2025), while research in the agri-plantation sector also shows the relevance of competence and employee engagement in explaining employee performance (Sari et al., 2023; Khairina et al., 2025). Thus, professional competence is an individual resource that supports performance achievement.

Organizational culture functions as a system of values and norms that guide employee behavior, coordination, commitment, and collaboration (Schein & Schein, 2021). A strong and adaptive culture can create an environment that supports the optimization of employee potential and the achievement of organizational goals. At PTPN III Kebun Bandar Betsy, organizational culture has been shown to be related to employee performance (Fitra et al., 2024), while research on other plantation companies shows that organizational culture can also be related to performance through certain organizational mechanisms (Ghaleb, 2024; Hutabarat et al., 2025). These findings confirm that organizational culture is an important context in shaping behavior and work outcomes.

Work Engagement demonstrates a positive psychological state reflected in vigor, dedication, and absorption (Bakker et al., 2023). Employees with high work engagement tend to have greater energy, dedication, and focus, enabling them to optimize their work output. In plantation companies, employee engagement and work culture have been shown to be linked to employee performance (Ismiasih et al., 2026), while research at PT Tolan Tiga Indonesia shows the relationship between employee engagement and organizational culture with performance (Mutiaru et al., 2025). The findings at PTPN IV Regional I Kebun Gunung Monaco also show the relevance of competency and employee engagement to employee performance (Lumbangaol et al., 2026).

The relationship between professional competence, organizational culture, and employee performance does not always occur through a direct path. Competence provides the ability to perform work, while organizational culture forms the environment that guides behavior; both can increase employee psychological engagement, which in turn supports performance. Previous findings indicate that professional competence, organizational culture, and work engagement contribute to performance, although the strength of the direct influence of competence and organizational culture has not always been consistent (Mahendra et al., 2024; Dewi et al., 2023; Mering et al., 2023; Lesmana et al., 2025). In the context of plantations, the relationship between competence, employee engagement, and performance is also demonstrated in various plantation companies and PTPN (Irawadi et al., 2025; Khairina et al., 2025; Lumbangaol et al., 2026).

Based on this argument, work engagement is positioned as a mediating variable that explains the mechanism of influence of professional competence and organizational culture on employee performance. Improved competence can increase employee readiness in carrying out their duties, while a conducive organizational culture can strengthen psychological attachment to work. These conditions subsequently encourage higher work engagement and contribute to improved performance. This argument is supported by empirical evidence in the plantation sector that indicates a correlation between competence, organizational culture, employee engagement, and performance (Butarbutar et al., 2023; Damai et al., 2023; Ismiasih et al., 2026; Noviardy & Aliya, 2020; Novrini et al., 2026). Overall, the conceptual framework used in this study is presented in the following figure:

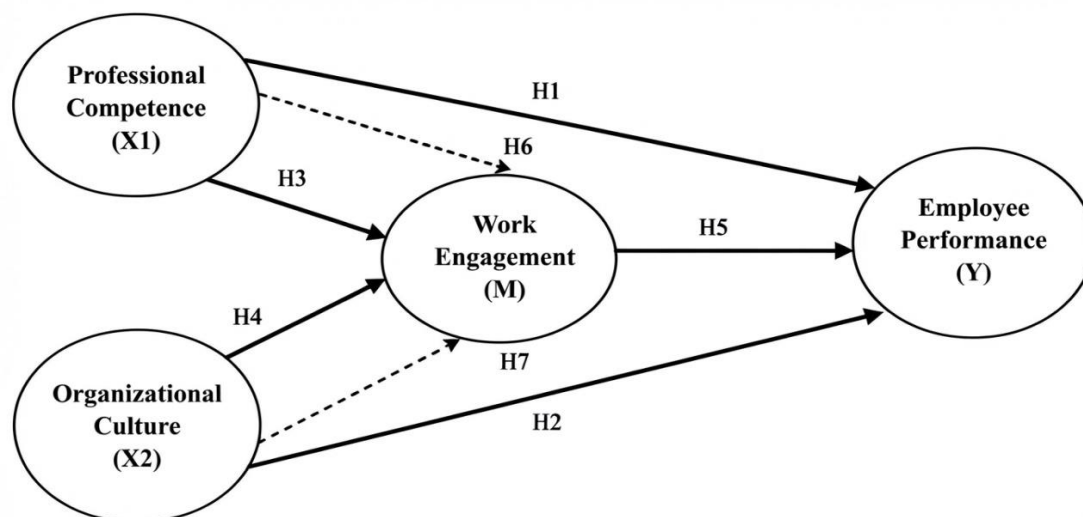


Figure 1. Research Conceptual Framework

Source: Data elaborated from empirical studies, 2026.

RESEARCH METHODS

This study applies a quantitative approach with an explanatory research type to test the relationship model between Professional Competence, Organizational Culture, Work Engagement, and Employee Performance at PT Perkebunan Nusantara IV Regional II North Sumatera. The research data are sourced from a primary

questionnaire using a five-point Likert scale, company documents, and relevant literature. The research sample consisted of 126 respondents selected through a proportionate stratified random sampling technique so that each group in the population has a proportional opportunity to be represented.

Professional Competence is measured using indicators of knowledge, skills, abilities, experience, and professional attitudes. Organizational Culture is measured based on organizational values, communication, cooperation, commitment, and adaptability to change. Work Engagement as a mediating variable is measured using the dimensions of vigor, dedication, and absorption, while Employee Performance is measured through work quality, work quantity, timeliness, effectiveness, and responsibility. All indicators are adopted from literature and empirical studies and adjusted to the characteristics of the research.

The data were analyzed in two stages: the first stage using IBM SPSS Statistics 26 to present descriptive statistics and test the validity, reliability, and quality of the data, and the second stage using Partial Least Squares–Structural Equation Modeling (PLS-SEM) to evaluate the measurement model (outer model) and structural model (inner model). PLS-SEM is used to estimate the relationships between constructs in the model and evaluate the model's ability to explain and predict endogenous constructs. The use of PLS-SEM also needs to refer to the model characteristics, analysis objectives, and appropriate model evaluation, not solely based on sample size (Sarstedt et al., 2022; Guenther et al., 2023).

The outer model evaluation includes outer loading, Average Variance Extracted (AVE), Composite Reliability, Cronbach's Alpha, and discriminant validity. Furthermore, the inner model is evaluated through the coefficient of determination (R^2), effect size (f^2), predictive relevance (Q^2), and bootstrapping procedures to test the significance of direct and indirect effects, including effects through mediating variables. This evaluation practice aligns with the development of PLS-SEM, which emphasizes the importance of systematically examining the quality of measurement models and structural models (Sarstedt et al., 2022; Guenther et al., 2023).

The construct is declared to meet the standards of convergent validity and reliability if $AVE > 0.50$, while Composite Reliability and Cronbach's Alpha > 0.70 . All hypothesis testing is conducted at a significance level of $\alpha = 0.05$ (Ghozali, 2021; Hair et al., 2022). Thus, the analysis was conducted in stages, starting from checking the quality of the data and instruments, evaluating the outer model, evaluating the inner model, and testing the direct and indirect effects through bootstrapping.

RESULTS

Respondent Characteristics

Information regarding the characteristics of the respondents is presented with an explanation of the traits possessed by the research sample, namely 126 employees of PTPN IV Regional II North Sumatera. The characteristics of employees are analyzed according to gender composition, educational level, age group, and length of service, because these four characteristics are considered capable of describing the composition of employees who are the primary data sources.

Table 1. Employee Identity by Gender Composition

Gender	Frequency	Proportion (%)
Man	65	51.6
Woman	61	48.4
Amount	126	100.0

Source:SPSS Analysis Results (2026).

As seen in Table 1, the largest proportion of respondents were male, 65 (51.6%), and female, 61 (48.4%). The difference between the two groups was relatively small, indicating that the distribution of respondents

was quite balanced and able to represent the characteristics of PTPN IV Regional II North Sumatera employees.

Table 2. Employee Identity by Education Level

Education	Frequency	Percentage (%)
D3	1	0.80
S1	109	86.50
S2	16	12.7
Amount	126	100.0

Source: SPSS Analysis Results (2026).

As seen in Table 2, the largest proportion of respondents had a Bachelor's degree (S1) at 109 (86.5%), followed by Master's degrees (S2) at 16 (12.7%), and only one Diploma (D3) at 0.8%. This composition indicates that employees' education is at the Bachelor's level (S1), thus potentially supporting the implementation of professional duties and the organizational transformation process within the company.

Table 3. Employee Identity by Age Group

Age	Frequency	Proportion (%)
20–26 Years	29	23.0
27–33 Years	38	30.2
34–40 Years	37	29.4
> 40 Years	22	17.5
Amount	126	100.0

Source: SPSS Analysis Results (2026).

As seen in Table 3, the 27–33 age group is the largest group with 38 (30.2%), followed by 37 (29.4%) from the 34–40 age group, 29 (23%) from the 20–26 age group. The results of this analysis indicate that employees are in the productive age group, possessing the potential for adaptability, high productivity, and high readiness to face changes in the business/organizational environment.

Table 4. Employee Identity According to Length of Service

Years of service	Frequency	Proportion (%)
1–4 Years	72	57.1
5–8 Years	26	20.6
9–12 Years	17	13.5
> 12 Years	11	8.7
Total	126	100.0

Source: SPSS Analysis Results (2026).

As seen in Table 4, the largest proportion of employees with a work experience of 1–4 years was 72 (57.1%), followed by employees with a work experience of 5–8 years at 26 (20.6%), employees with a work experience of 9–12 years at 17 (13.5%), and employees with a work experience of more than 12 years at 11 (8.7%). The analysis revealed that the company's employees still have relatively short work experience, reflecting the regeneration of the workforce as part of the company's organizational transformation process.

Descriptive Statistics

The purpose of descriptive statistical analysis is to provide a general illustration of respondents' assessments and perceptions of each research construct: professional competence, organizational culture, work engagement, and employee performance. Descriptive statistics are presented through mean values and data

distribution (standard deviation). The descriptive statistical analysis aims to describe the tendencies of respondents' responses through mean values and standard deviations.

Table 5. Descriptive Statistics of Research Variables

Variables	Number of Indicators	Mean	Standard Deviation	Category
Professional Competence	5	4.28	0.54	Very high
Organizational culture	5	4.17	0.57	Tall
Work Engagement	4	4.21	0.56	Very high
Employee performance	6	4.25	0.52	Very high

Source: SPSS Analysis Results (2026).

As seen in Table 5, all variables have a mean value above 4.00, indicating that respondents' perceptions of professional competence, organizational culture, work engagement, and employee performance are predominantly positive. The relatively low standard deviation indicates that there is not much variation in responses between respondents, thus ensuring sufficient consistency for analysis using PLS-SEM. To describe the indicators with the highest and lowest scores, a descriptive statistics table is presented based on the mean value of each indicator as a basis for formulating managerial implications and research recommendations.

Table 6. Descriptive Statistics of Professional Competence Variables

Code	Indicator	Mean	Category	Ranking
PC1	Knowledge	4.41	Very high	2
PC2	Skills	4.18	Tall	4
PC3	Work behavior	4.37	Very high	3
PC4	Work experience	4.12	Tall	5
PC5	Adaptability	4.56	Very high	1

Source: SPSS Analysis Results (2026).

As seen in Table 6, the Adaptability indicator (PC5) had the highest average score, reflecting respondents' positive assessment of employees' ability to adapt to job changes. Conversely, the Work Experience indicator (PC4) received the lowest average score (4.12). This finding indicates that work experience remains a relatively weak aspect compared to other professional competency indicators, necessitating company attention through mentoring, coaching, and competency development programs.

Table 7. Descriptive Statistics of Organizational Culture Variables

Code	Indicator	Mean	Category	Ranking
OC1	Core values of the organization	4.31	Very high	2
OC2	Work norms	4.25	Very high	3
OC3	Organizational commitment	4.08	Tall	5
OC4	Adapting to change	4.16	Tall	4
OC5	Culture of innovation	4.39	Very high	1

Source: SPSS Analysis Results (2026).

As seen in Table 7, the Innovation Culture indicator (OC5) had the highest average score, indicating that respondents believed the organization had fostered a work culture that supported innovation and was able to respond to the dynamics of change. Conversely, the Organizational Commitment indicator (OC3) had the lowest average score (4.08) among the other indicators. The findings indicate that employee commitment to the organization still needs to be strengthened to support a more optimal implementation of organizational

culture. Therefore, increasing organizational commitment needs to be a primary focus in strengthening organizational culture in this company.

Table 8. Descriptive Statistics of Work Engagement Variables

Code	Indicator	Mean	Category	Ranking
WE1	Vigor	4.33	Very high	2
WE2	Dedication	4.49	Very high	1
WE3	Absorption	4.11	Tall	4
WE4	Emotional attachment	4.18	Tall	3

Source: SPSS Analysis Results (2026).

As seen in Table 8, the Dedication indicator (WE2) obtained the highest average score (4.49), indicating that the majority of respondents have a high sense of pride, enthusiasm, and commitment to the work they perform. Conversely, the Absorption indicator (WE3) obtained the lowest average score (4.11) compared to the other indicators.

The results of this analysis indicate that the level of employee concentration and full involvement in completing work can still be improved. Therefore, organizations must be more active in paying attention to the absorption aspect (WE3) so that employees are more interested and focused on increasing work involvement while carrying out their duties.

Table 9. Descriptive Statistics of Employee Performance Variables

Code	Indicator	Mean	Category	Ranking
EP1	Quality of work	4.46	Very high	1
EP2	Quantity of work	4.28	Very high	3
EP3	Punctuality	4.20	Tall	4
EP4	Effectiveness	4.15	Tall	5
EP5	Work responsiveness	4.10	Tall	6
EP6	Teamwork	4.39	Very high	2

Source: SPSS Analysis Results (2026).

As seen in Table 9, the Work Quality indicator (EP1) had the highest average score, reflecting respondents' assessment that employee performance met the organization's quality standards. Conversely, the Work Responsiveness indicator (EP5) received the lowest average score (4.10) compared to the other indicators.

This finding indicates that employees' ability to respond quickly to changes, problems, and work requirements still needs improvement. Therefore, increased focus on the aspect of work responsiveness needs to support sustainable employee performance.

Table 10. Priority Improvement Based on Descriptive Statistics Results

Variables	Priority Indicators	Statistical Findings	Recommendations for Improvement
Professional Competence	Work experience	Has the lowest average value (4.12) of other professional competency indicators.	Increase coaching, mentoring, job rotation to enrich work experience.
Organizational culture	Organizational Commitment	Has the lowest mean value (4.08) of the other organizational culture indicators	Strengthening the internalization of organizational values, internal communications, and performance-based rewards.

Work Engagement	Absorption	Has the lowest mean value (4.11) of the other work engagement indicators.	Create a work atmosphere that supports focus, concentration, and engagement in work.
Employee performance	Work Responsiveness	Has the lowest average (mean) value (4.10) compared to other employee performance indicators.	Improve the ability to face problems, make the right decisions, adapt to change.

Source: Elaborated from SPSS Output (2026).

As seen in Table 10, the indicators with the lowest average scores for each variable are work experience, organizational commitment, absorption, and work responsiveness. Therefore, these four indicators are priorities for improvement to sustainably enhance professional competence, organizational culture, work engagement, and employee performance.

Instrument Test

Instrument testing was conducted to ensure that the research indicators met the validity and reliability criteria in presenting the constructs under study. In the PLS-SEM approach, the evaluation was analyzed through an outer model test that included convergent validity, discriminant validity, and construct reliability for the variables of Professional Competence, Organizational Culture, Work Engagement, and Employee Performance before hypothesis testing was conducted.

Table 11. Research Instrument Testing Criteria

Testing Aspects	Parameter	Criteria	Decision
Convergent Validity	Outer Loading	≥ 0.70	Valid
Convergent Validity	Average Variance Extracted (AVE)	≥ 0.50	Fulfil
Discriminant Validity	Fornell-Larcker Criterion	Square root of AVE > correlation between constructs	Valid
Discriminant Validity Ratio	HTMT Ratio (H(eterotrait-Monotrait))	< 0.90	Valid
Reliability	Composite Reliability (CR)	≥ 0.70	Reliable
Reliability	Cronbach's Alpha	≥ 0.70	Reliable

Source: PLS-SEM Output, SmartPLS (2026).

As seen in Table 11, the quality of the research instrument was evaluated through three main parameters: convergent validity, discriminant validity, and construct reliability. An instrument is considered feasible if all research indicators meet a minimum outer loading value of 0.70, a minimum AVE value of 0.50, a minimum Composite Reliability and Cronbach's Alpha value of 0.70, and meet the Fornell-Larcker and HTMT requirements. Fulfillment of each of these criteria demonstrates that the instrument is suitable for measuring the constructs of Professional Competence, Organizational Culture, Work Engagement, and Employee Performance consistently and accurately, thus being scientifically adequate for use in PLS-SEM analysis.

Hypothesis Testing

The direct effect hypothesis was analyzed using bootstrapping in SmartPLS to determine whether there is a direct influence between variables in the research model. The decision regarding the hypothesis was based on the criteria of t-statistics > 1.96 with p-values < 0.05 and a significance level of 5%. A summary of the results is presented in the following table:

Table 12. Direct Effect Hypothesis Analysis

Hypothesis	Relationship between variables	B (Path Coefficient)	t-statistics	p-values	Conclusion
H1	Professional Competence → Employee Performance	0.304	3,146	0,000	Accepted
H2	Organizational Culture → Employee Performance	0.226	2,413	0.016	Accepted
H3	Professional Competence → Work Engagement	0.374	3,334	0.001	Accepted
H4	Organizational Culture → Work Engagement	0.411	3,423	0.001	Accepted
H5	Work Engagement → Employee Performance	0.388	4,517	0,000	Accepted

Source: SmartPLS output, 2026.

Judging from Table 12, the overall direct influence hypothesis (H1–H5) shows a t-statistic value > 1.96 and p-values < 0.05 , meaning that the correlation between variables as a whole can be said to contribute positively and substantially. The analysis findings indicate that Professional Competence and Organizational Culture not only have a direct influence on Employee Performance, but also contribute to increasing Work Engagement as a psychological mechanism that supports performance improvement.

The indirect effect analysis aims to evaluate the extent to which Work Engagement can mediate in bridging the interaction between Professional Competence and Organizational Culture on Employee Performance. The mediation effect is declared significant when the bootstrapping results show a t-statistic value exceeding 1.96 with a probability level (p-value) of less than 0.05 at a 5% significance level. A summary of the analysis results is presented in Table 13.

Table 13. Indirect Hypothesis Analysis

Hypothesis	The Role of Mediation	β (Indirect Effect)	t-statistics	p-values	Conclusion
H6	Professional Competence → Work Engagement → Employee Performance	0.145	3,201	0.001	Accepted
H7	Organizational Culture → Work Engagement → Employee Performance	0.160	2,448	0.015	Accepted

Source: SmartPLS output, 2026.

Based on Table 13, both mediation hypotheses are accepted because the t-statistics are > 1.96 and p-values are < 0.05 . This result confirms that Work Engagement significantly mediates the influence of Professional Competence and Organizational Culture on Employee Performance. In addition, the mediation contribution of Organizational Culture → Work Engagement → Employee Performance ($\beta = 0.160$) is greater than Professional Competence → Work Engagement → Employee Performance ($\beta = 0.145$), so that Organizational Culture is more effective in improving Employee Performance based on Work Engagement. The discussion of the hypotheses is presented as follows:

The Influence of Professional Competence on Employee Performance

The analysis of the findings of this hypothesis test model explains that Professional Competence has a positive contribution to improving employee performance as explained by the beta coefficient (β) value of 0.304, the t-statistic value of 3.146 and p-value < 0.000 , so the proposed hypothesis is accepted because it is empirically supported. This finding also indicates that professional competence can improve employee performance. Empirically, these results indicate that employee abilities in the aspects of knowledge, skills,

work behavior, experience, and adaptability are strategic factors to increase the effectiveness of work completion and the quality of work results. The more optimal the professional competence an individual has, the greater their ability to achieve the work targets set by the company.

The findings of this analysis are in line with research (Mering et al., 2023) which reveals that competencies contribute positively to improving employee performance. Research findings (Suci et al., 2023) also stated that competence is one of the most important aspects that influences performance improvement, so that competence development needs to be the main concern of the organization. This finding also strengthens the opinion (Armstrong & Taylor, 2023). Professional competence is the primary asset that determines the effectiveness of work execution and organizational performance. Therefore, efforts to strengthen employee competence through structured training programs, skill development relevant to job demands, and continuous capacity development are important strategies for improving individual performance within an organization.

The Influence of Organizational Culture on Employee Performance

This model analysis explains that organizational culture has a positive influence on employee performance. This relationship is reflected in the path coefficient (β) of 0.226, supported by a t-statistic of 2.413 and a p-value of 0.016. These findings suggest that strengthening organizational values, work norms, organizational commitment, adaptability to change, and a culture of innovation can shape constructive work behaviors and support sustainable employee performance.

The findings of this study support the research results (Dewi et al., 2023), organizational culture has a positive contribution to employee performance at PTPN Tanjung Morawa. Other research (Harahap & Nasution, 2023) also concluded that organizational culture is a strategic aspect capable of improving employee performance. This analysis can reinforce the paradigm that organizational success is determined not only by individual competency but also by work culture aspects such as collaboration, discipline, and innovation.

The Influence of Professional Competence on Work Engagement

The findings of this analysis, Professional Competence has a substantial contribution to Work Engagement with a β value of 0.374, a t-statistic of 3.334, and a p-value of 0.001. These findings suggest that increasing professional competence will increase employee work engagement. Empirical findings indicate that employees who demonstrate high competence tend to demonstrate greater confidence in completing their work, exhibit higher work enthusiasm, and demonstrate greater dedication to the organization. These conditions encourage increased employee emotional and psychological engagement in carrying out their work.

The results of this analysis prove that there is conformity with the views of (Dessler, 2020) which states that competence not only improves technical abilities, but also deepens an individual's motivation and commitment to their work. The results of this study demonstrate that there is agreement with the findings (Febriani et al., 2025). With recommendations, employee involvement becomes an important aspect that can contribute to increasing the productivity of plantation organizations.

The Influence of Organizational Culture on Work Engagement

The findings explain that Organizational Culture has a positive and significant contribution to Work Engagement with a β value of 0.411, t-statistics of 3.423, and p-values of 0.001. This coefficient value is the largest compared to the direct influence on Work Engagement, this also explains that organizational culture is a more important factor in increasing employee work engagement. This decision indicates an organizational culture that supports open communication, cooperation, commitment, innovation and makes employees want to work with more enthusiasm, dedication, and a sense of attachment to the organization.

Empirically, this finding strengthens the research results (Sinaga & Handayani, 2024) which shows that organizational culture contributes positively to work engagement at PTPN IV Regional II. Other findings (Veritia et al., 2024) also explained that a conducive organizational environment can increase employee engagement in plantation companies.

The Influence of Work Engagement on Employee Performance

The results of the analysis show that work engagement contributes positively and substantially to employee performance. The β value is 0.388, the t-statistic is 4.517, and the p-value is 0.000. Among all the direct relationships to Employee Performance, this path has the highest t-statistic value, indicating that work engagement is a very strong predictor in improving employee performance. The analysis results show that employees who have work enthusiasm, dedication, focus, and emotional attachment to their work tend to produce maximum work quality, productivity, and work effectiveness.

The findings of this study are consistent with the study (Sahputra et al., 2026) which showed that Work Engagement has a positive effect on employee performance in plantation companies. Similar results were reported by (Singh et al., 2025), who placed Employee Engagement as an important factor in supporting organizational performance and sustainability in the palm oil industry. Strong engagement encourages employees to work with higher energy, dedication, and focus, thereby improving the quality of task implementation and achieving organizational goals (Weni & Setyaningrum, 2025). Thus, Work Engagement needs to be seen as a strategic part of HR management, especially amidst organizational transformation, digitalization, changing job demands, and the need for increasing adaptability. In these conditions, engaged employees have greater readiness to optimize their capacity in supporting the achievement of organizational goals.

The Mediating Role of Work Engagement on the Influence of Professional Competence on Employee Performance

The results of the indirect effect test indicate that Professional Competence contributes indirectly to Employee Performance through Work Engagement with a β value of 0.145, a t-statistic value of 3.201, and a p-value of 0.001. Because both direct and indirect influences are equally substantial, Work Engagement is proven to have a role as a partial mediator in the relationship. The results of this test indicate that the influence of Professional Competence on Employee Performance is not entirely direct, but is also channeled through increased Work Engagement. This means that better mastery of competencies encourages employees to demonstrate higher participation, dedication, and engagement in their work, so that performance achievements will be more optimal.

This analysis can then expand on research findings (Febriani et al., 2025), which emphasizes the importance of employee involvement in improving organizational performance. These results also support the concept put forward (Armstrong & Taylor, 2023) that competency development will provide more optimal results if followed by increased employee involvement in work.

The Mediating Role of Work Engagement in the Influence of Organizational Culture on Employee Performance

The findings of this analysis indicate that Organizational Culture indirectly contributes to Employee Performance, through Work Engagement with a known β value of 0.160, t-statistics of 2.448, and p-values of 0.015. Since both direct and indirect contributions are significant or substantial, it can be understood that Work Engagement also plays a role as a partial mediator in this relationship. In addition, the value of the indirect influence of this path is greater than the mediation path of Professional Competence ($\beta = 0.145$). These findings indicate that organizational culture is able to be stronger in improving performance through increasing work engagement. In other words, a conducive organizational culture can increase employees' psychological attachment to their work, resulting in maximum and sustainable performance achievements.

The analysis results are in line with research findings (Sinaga & Handayani, 2024), work engagement has a significant ability to mediate the contribution between organizational culture and employee performance at PTPN IV Regional II. Recommendation (Setyawan et al., 2021), Employee performance acts as a crucial mechanism bridging organizational factors and employee performance. Therefore, strengthening an organizational culture that supports collaboration, communication, and active employee participation is an effective strategy for increasing work engagement and enhancing employee performance.

DISCUSSION

The Influence of Professional Competence on Employee Performance

The analysis findings indicate that professional competence contributes substantially to employee performance ($\beta = 0.304$; $t = 3.146$; $p = 0.000$). This analysis indicates that high professional competence contributes to improved employee performance. Competence, which includes knowledge, skills, work behavior, experience, and adaptability, enables employees to complete work tasks more optimally, thus supporting the achievement of organizational targets. The results of this analysis are in line with the opinion of (Armstrong & Taylor, 2023) that competence is a strategic factor that determines the effectiveness of work implementation. The findings of this result are also consistent with the statement (Mering et al., 2023) Competence has a positive influence on employee performance. Therefore, HR training and development oriented toward improving competence is an important strategy for improving employee performance.

The Influence of Organizational Culture on Employee Performance

The analysis findings indicate that organizational culture contributes substantially to employee performance ($\beta = 0.226$; $t = 2.413$; $p = 0.016$). This analysis shows that a strong organizational culture can produce productive work behaviors that drive employee performance. Organizational values, commitment, discipline, adaptation to change, and a culture of innovation serve as guidelines for employees in completing work tasks and responsibilities. These results support the opinion (Schein & Schein, 2021) which states that organizational culture is a value system that shapes employee behavior. This finding also supports the findings (Dewi et al., 2023) as well as (Harahap & Nasution, 2023) which concluded that organizational culture has a substantial influence on employee performance. The implications of this decision suggest that strengthening organizational culture is a strategic factor that companies can leverage to drive improved performance.

The Influence of Professional Competence on Work Engagement

The results of this analysis explain that Professional Competence contributes substantially to Work Engagement ($\beta = 0.374$; $t = 3.334$; $p = 0.001$). This finding suggests that employees with high competence tend to be more confident, able to complete their work well, and have a higher dedication and engagement to their work. This condition encourages increased work engagement, demonstrated through enthusiasm, dedication, and focus at work. This finding supports the opinion (Dessler, 2020) With this explanation, good competence will increase an individual's self-confidence and work motivation. In line with this, research findings (Febriani et al., 2025) stated that employee engagement plays a strategic role in increasing the effectiveness of plantation organizations. Therefore, competency development not only improves work capabilities but also strengthens employee engagement in work activities.

The Influence of Organizational Culture on Work Engagement

The analysis findings indicate that Organizational Culture contributes substantially to Work Engagement ($\beta = 0.411$; $t = 3.423$; $p = 0.001$). This coefficient value is the largest for the Work Engagement variable, meaning that organizational culture is the most dominant factor in increasing employee work engagement. The implementation of an organizational culture that emphasizes communication transparency, synergy between work units, and an orientation towards innovation can create an organizational climate that encourages the emergence of affective commitment and psychological attachment of employees to the

organization. This perspective is in line with the opinion of (Schein & Schein, 2021), organizational culture is built on a set of collective assumptions, values, and beliefs that serve as guidelines for the behavior of organizational members. The results of this analysis also support research (Sinaga & Handayani, 2024) as well as (Veritia et al., 2024), which shows that organizational culture contributes significantly to increasing work engagement in companies in the plantation sector.

The Influence of Work Engagement on Employee Performance

The analysis findings indicate that Work Engagement has a positive and significant effect on Employee Performance ($\beta=0.388$; $t=4.517$; $p < 0.000$). These results indicate that PTPN IV Regional II employees who have enthusiasm, dedication, focus, and strong attachment to their work tend to produce better work quality and work effectiveness. These results are consistent with the explanations (Sahputra et al., 2026; Singh et al., 2025; Weerakkody et al., 2024) which confirms the significant relationship between Work Engagement and Performance. The latest findings by (Kumar & Vardhini, 2026; Nischitha & Sanjana, 2026) also shows that Employee Engagement is related to organizational productivity and resilience. Overall, the findings of this study position Employee Engagement as a strategic driver of employee performance at PTPN IV Regional II, not merely an individual psychological condition. Therefore, strengthening Work Engagement needs to be integrated into HR management strategies, especially since 30.20% of respondents (38 people) are in the 27–33 age group, which requires managerial attention in dealing with work demands and maintaining work-life balance. Strengthening Work Engagement becomes increasingly urgent because in the plantation context in North Sumatera, Work Engagement has been shown to be positively related to various job outcomes, including employee work behavior, learning, and innovative behavior (Rahmadani et al., 2020). Thus, managing Work Engagement is not only crucial for maintaining performance but can also be a preventative approach in anticipating work fatigue (burnout) and maintaining sustainable employee performance.

The Mediating Role of Work Engagement in the Relationship between Professional Competence and Employee Performance

The results of the indirect effect test indicate that Work Engagement substantially mediates the contribution of Professional Competence to Employee Performance ($\beta = 0.145$; $t = 3.201$; $p = 0.001$). Since both direct and indirect contributions are significant, Work Engagement acts as a partial mediator. The results of this analysis indicate that the influence of Professional Competence on Employee Performance does not occur entirely through a direct pathway, but is also channeled through increased Work Engagement as a mediating mechanism. This finding is in line with (Armstrong & Taylor, 2023), which emphasizes that mastery of competencies will result in maximum contribution if accompanied by increased motivation, active participation, and employee engagement with their work. The findings of this analysis reinforce research (Febriani et al., 2025) which states that employee involvement is an important mechanism in improving organizational performance.

The Mediating Role of Work Engagement in the Relationship between Organizational Culture and Employee Performance

Work Engagement significantly mediates the contribution of Organizational Culture to Employee Performance ($\beta = 0.160$; $t = 2.448$; $p = 0.015$). The large indirect effect, which exceeds the indirect influence of Professional Competence, indicates that organizational culture is more effective in driving performance through developing work engagement. This finding indicates that a conducive organizational environment can strengthen employees' psychological attachment, thus impacting performance improvement. These results are in line with research (Sinaga & Handayani, 2024) which emphasizes the mediating function of work engagement, and is supported by (Setyawan et al., 2021) which explains work engagement as a psychological mechanism linking organizational culture to individual performance. In summary, the research findings can be analyzed from the following figure:

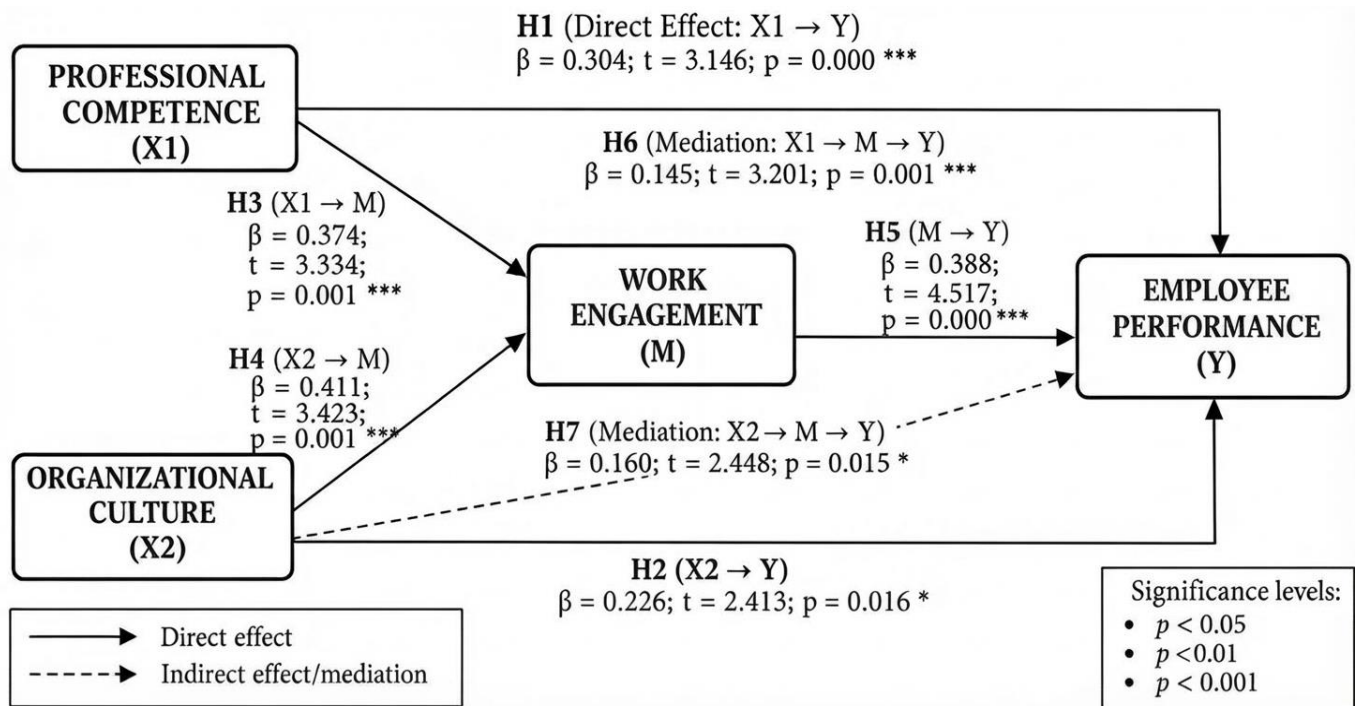


Figure 2. Synthesis of Research Results Discussion

Source: Elaborated from SmartPLS Output data, 2026.

CONCLUSION

Based on the analysis findings, Professional Competence, Organizational Culture, and Work Engagement can contribute substantially to Employee Performance. Work Engagement has the potential to mediate the effects of Professional Competence and Organizational Culture on Employee Performance. Overall, the results of this model test indicate that several aspects still need improvement, particularly work experience, organizational commitment, emotional attachment to the organization, and work responsiveness. These findings indicate opportunities to optimize employee work engagement and performance.

From a theoretical perspective, the empirical findings can strengthen the Human Resource Management literature by suggesting that work engagement is a crucial mechanism in linking professional competence and organizational culture to employee performance. Practical implications suggest that companies need to integrate competency development and organizational culture strengthening to increase work engagement through training, internalizing organizational values, and building a collaborative work environment to encourage sustainable performance improvement.

Declaration of Conflicting Interests

We confirm that the research process and manuscript preparation were carried out independently without any interests that could influence the objectivity of the research, the interpretation of the results, or the publication of this article.

Funding Acknowledgment

The authors would like to thank the management of PT Perkebunan Nusantara IV Regional II North Sumatera for their research permit and support during data collection. Appreciation is also extended to all respondents and to the various parties who provided input, which contributed to the successful completion of this research.

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