

THE EFFECT OF TRAINING AND WORK DISCIPLINE ON EMPLOYEE PERFORMANCE MEDIATED BY COMPETENCY AT THE CENTER MEDAN PALM OIL RESEARCH

Dini Hendriani¹, Bunga Aditi², Ilham Mubaraq Ritonga³

Program Studi Manajemen, Fakultas Ekonomi Bisnis, Universitas Harapan Medan¹²³

Corresponding Email: dinihendriani74@gmail.com¹, bunga.aditi16@gmail.com², anakmedan360@gmail.com³

Received : 01 August 2025

Published : 11 October 2025

Revised : 25 August 2025

DOI : <https://doi.org/10.54443/ijebas.v5i5.4243>

Accepted : 15 September 2025

Link Publish : <https://radjapublika.com/index.php/IJEBAS>

Abstract

This study aims to analyze the effect of training and work discipline on employee performance with competence as a mediating variable at the Medan Palm Oil Research Center. The research method uses a quantitative approach with Partial Least Square-Structural Equation Modeling (PLS-SEM) analysis techniques. The study population was 235 employees with a sample of 100 respondents determined using the Slovin formula. Data were collected through a questionnaire with a Likert scale and analyzed using SmartPLS version 3. The results showed that training had a significant positive effect on employee performance ($\beta = 0.419$; $p = 0.001$) and competence ($\beta = 0.354$; $p = 0.000$). Work discipline had a significant positive effect on employee performance ($\beta = 0.551$; $p = 0.000$) and competence ($\beta = 0.147$; $p = 0.001$). Competence had a significant positive effect on employee performance ($\beta = 0.005$; $p = 0.000$). Mediation testing demonstrated that competence mediated the effect of training on employee performance ($p=0.002$) and work discipline on employee performance ($p=0.002$). This study emphasizes the importance of developing continuous training and strengthening a culture of discipline to improve employee competence and performance.

Keywords: *Work Discipline, Employee Performance, Competence, Training.*

INTRODUCTION

In an era of globalization and increasingly competitive business climate, organizational excellence is determined not only by technological advancements or complete infrastructure, but rather by the quality of its human resources. Competent human resources are a strategic asset that determines an organization's competitiveness and sustainability in achieving its goals.(Deden A.Wahab Sya'roni Janivita J. Sudirham & Faculty, 2016)In this context, employee performance plays a vital role as a reflection of organizational achievement through effective and efficient individual contributions.(Sapar, 2022). Mangkunegara in(Rifles & Shotguns, 2022)Employee performance is defined as the quality and quantity of work achieved by an individual in carrying out their duties according to their responsibilities. To optimize employee performance, organizations need to implement various human resource development strategies. One proven effective approach is through training programs.(Fauziah, 2017)explains that training is a systematic process designed to improve employee competency through structured learning to support organizational performance. Similarly,(Hair et al., 2014)emphasizes that training is a planned program designed to develop employee skills and knowledge in both the short and long term. In addition to training, work discipline also plays a crucial role in fostering a productive and professional work culture within an organization. (Lasarik & Setiawan, 2019)identified that other factors that influence increased performance are occupational safety and health aspects.(Rifles & Shotguns, 2022)added that Occupational Health and Safety (K3) is an activity that ensures the creation of safe working conditions and

avoids physical and mental disorders through coaching, training, direction, and supervision of employee performance in accordance with applicable regulations. The Medan Palm Oil Research Center (PPKS) as part of PT Riset Perkebunan Nusantara has a vision of becoming an international research institution capable of becoming a center of excellence for the national palm oil industry. Based on initial observations through interviews with the head of Human Resources, several problems were found related to employee performance, including the continued implementation of tasks that do not meet standards, late attendance, violations of standard operating procedures, and lack of communication and coordination between teams. Although the company has held routine training and conducted periodic evaluations, these problems still arise periodically, especially in work units with less strict supervision. Considering the importance of training, work discipline, and competence in improving employee performance, this study aims to analyze the effect of training and work discipline on employee performance with competence as a mediating variable at the Medan PPKS.

METHOD

This study uses a quantitative approach with an associative design that aims to identify causal relationships between the variables studied. The research location was carried out at the Palm Oil Research Center (PPKS) located at Jalan Brigjend Katamso Number 51 Medan, North Sumatra, with an implementation period from January 2024 to September 2025. The study population included all 235 PPKS Medan employees, while the sample determination used the Slovin formula with a 5% error rate, resulting in 100 respondents. (Pramularso, 2018) Primary data were collected through a questionnaire with a five-point Likert scale and documentation studies. The variables analyzed included training (X1) with indicators of instructors, participants, materials, methods, objectives, trainer qualifications, and time based on (Setyawati et al., 2024); work discipline (X2) with indicators of attendance level, work procedures, compliance, awareness and responsibility according to (Pratama et al., 2023); employee performance (Y) with indicators of quality, quantity, time, cost emphasis, supervision, and relationships between employees based on (Setyawati et al., 2024); and competency (Z) with indicators of knowledge, ability, technical expertise, delivery of work results, adaptation, and attitude according to (Sianturi & Siregar, 2023) The analysis technique uses Partial Least Square-Structural Equation Modeling (PLS-SEM) through the SmartPLS version 3 application with evaluation of the outer model and inner model, as well as hypothesis testing using the bootstrapping method with the criteria of t-statistic > 1.96 and p-value < 0.05 . (Suparwo & Pratama, 2021).

RESULTS AND DISCUSSION

Respondent Characteristics

This study involved 100 respondents who were employees of the Medan Palm Oil Research Center (PPKS) spread across eight main divisions including Human Resources, Secretariat, Finance, Accounting and Planning, Security, Information Technology, Household Unit, and Legal. Based on gender, the composition of respondents was dominated by men as many as 83 people or 83%, while women numbered 17 people or 17%. This indicates that male involvement is more dominant in the scope of work at PPKS Medan. Viewed by age group, the majority of respondents were in the 41-50 years range at 42%, followed by the 31-40 years age group at 28%, aged over 50 years at 18%, and aged under 31 years at 12%. This age distribution shows that most employees are in the productive age with mature work experience. In terms of length of service, the majority of respondents (48%) had worked for 6-10 years, followed by 1-5 years (22%), 10-15 years (21%), and more than 15 years (9%). This indicates that the majority of employees have sufficient work experience, which is expected to provide an accurate assessment of the variables studied.

Evaluation of Measurement Model (Outer Model)

Measurement model testing was conducted to ensure the validity and reliability of the research instrument. Outer model evaluation included convergent validity, discriminant validity, composite reliability, and Cronbach's alpha. The results of the outer model testing are presented below:

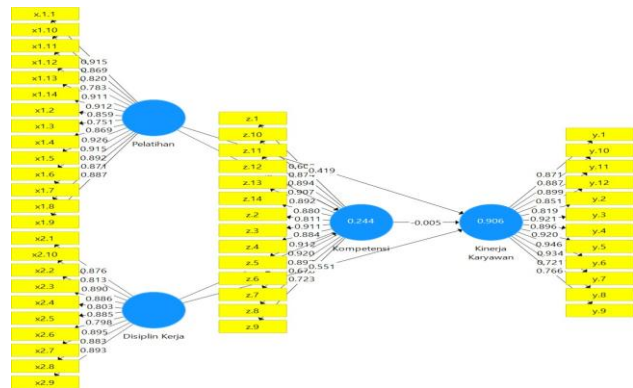


Figure 1.Outer Model
Source: Processed data, 2025

Based on Figure 1, the measurement model shows the relationship between indicators and their latent constructs. The results of the convergent validity test show that all indicators have outer loading values above 0.4, indicating that all indicators are valid in measuring their constructs. The highest outer loading value for the training variable is 0.926 in indicator P.5, the work discipline variable is 0.895 in indicator DK.7, the employee performance variable is 0.946 in indicator KK.6, and the competency variable is 0.920 in indicator K.6.

Table 1.Average Variance Extracted (AVE)

Variables	Average Variance Extracted (AVE)
Work Discipline	0.745
Employee performance	0.760
Competence	0.718
Training	0.759

Source: Processed data, 2025

Based on Table 1, the AVE values for all variables are above 0.50, indicating that discriminant validity is well met. The training variable has an AVE value of 0.759, work discipline 0.745, employee performance 0.760, and competence 0.718. These results confirm that each construct has an adequate level of discriminant validity.

Table 2.Composite Reliability and Cronbach's Alpha

Variables	Composite Reliability
Work Discipline	0.967
Employee performance	0.974
Competence	0.972
Training	0.978
Variables	Cronbach's Alpha
Work Discipline	0.962
Employee performance	0.971
Competence	0.970
Training	0.975

Source: Processed data, 2025

Table 2 shows that all variables have composite reliability and Cronbach's alpha values above 0.70,

indicating excellent reliability. The highest composite reliability value was obtained by the training variable at 0.978, followed by employee performance at 0.974, competence at 0.972, and work discipline at 0.967. Meanwhile, the highest Cronbach's alpha values were for training at 0.975, employee performance at 0.971, competence at 0.970, and work discipline at 0.962.

Structural Model Evaluation (Inner Model)

Once the measurement model meets validity and reliability criteria, the next step is evaluating the structural model to test the causal relationships between variables. Inner model testing includes the path coefficient, R-square, F-square, and Q-square.

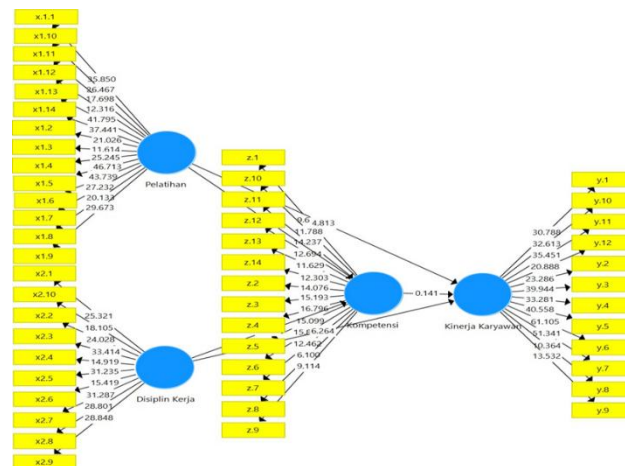


Figure 2. Inner Model

Figure 2 presents the research's structural model, which shows the relationships between latent variables. The path coefficient analysis indicates that all paths have a positive relationship. The path coefficient value for work discipline on employee performance is 0.551, training on employee performance is 0.419, training on competence is 0.354, work discipline on competence is 0.147, and competence on employee performance is 0.005. The R-square test results show that the training and work discipline variables are able to explain 90.6% of the variability in employee performance, indicating that the model has very strong predictive power. The F-square value shows that work discipline has a large influence on employee performance with a value of 0.398, while training has a moderate influence with a value of 0.227. The Q-square value for employee performance is 0.671 and competence is 0.117, both of which are above zero, indicating that the model has good predictive relevance.

Hypothesis Testing

Table 3. Results of Hypothesis Testing of Direct and Indirect Effects

Variable Relationship	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	Direct Effect Hypothesis			Information
				T Statistics (O/STDEV)	P Values		
Work Discipline -> Employee Performance	0.551	0.541	0.085	6,462	0,000		Accepted
Work Discipline -> Competence	0.147	0.197	0.329	4,447	0,001		Accepted
Competence -> Employee Performance	0.005	0.004	0.039	4,000	0,000		Accepted

THE EFFECT OF TRAINING AND WORK DISCIPLINE ON EMPLOYEE PERFORMANCE MEDIATED BY COMPETENCY AT THE CENTER MEDAN PALM OIL RESEARCH

Dini Hendriani et al

Training -> Employee performance	0.419	0.427	0.087	4,825	0.001	Accepted
Training -> Competence	0.354	0.332	0.320	4,108	0,000	Accepted

Indirect Effect Hypothesis						
Variable Relationship	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values	Information
Work Discipline -> Competence > Employee performance	0.001	0,000	0.015	3,051	0.002	Accepted
Training -> Competence >Employee Performance	0.002	0.002	0.017	3,109	0.002	Accepted

Source: Processed data, 2025

Based on Table 3, the results of the hypothesis testing indicate that all hypotheses are accepted. Training has a positive and significant effect on employee performance with a coefficient value of 0.419 and a p-value of 0.001. Work discipline has a positive and significant effect on employee performance with a coefficient value of 0.551 and a p-value of 0.000. Training has a positive and significant effect on competence with a coefficient value of 0.354 and a p-value of 0.000. Work discipline has a positive and significant effect on competence with a coefficient value of 0.147 and a p-value of 0.001. Competence has a positive and significant effect on employee performance with a coefficient value of 0.005 and a p-value of 0.000. The indirect effect test shows that competence mediates the effect of training on employee performance with a p-value of 0.002, and competence mediates the effect of work discipline on employee performance with a p-value of 0.002. These findings confirm that competence plays a role as a mediating variable in the relationship between training and work discipline on employee performance at PPKS Medan.

Discussion

The results of the hypothesis testing indicate that training has a positive and significant effect on employee performance, with a path coefficient of 0.419 and a p-value of 0.001. These findings confirm that a structured training program can improve the competency, skills, and technical understanding of Medan PPKS employees. The training was deemed effective, particularly in terms of instructor delivery, varied methods, and positive interactions among participants. These results align with research conducted by the Indonesian Institute of Sciences (IIS).(Zillah et al., 2023)which states that training significantly contributes to improving employee performance. Work discipline is also proven to have a positive and significant effect on employee performance with a path coefficient of 0.551 and a p-value of 0.000, which is the strongest influence in this research model. The majority of employees demonstrate high discipline in terms of punctuality, adherence to procedures, and responsibility in completing tasks. These findings are supported by research(Yusuf et al., 2019)which confirms that work discipline has a significant positive relationship with performance. Consistent discipline reflects responsibility and integrity in carrying out tasks, which ultimately increases work effectiveness and productivity. This study also proves that training has a significant positive effect on competency, with a path coefficient of 0.354 and a p-value of 0.000. Through training programs, employees acquire new knowledge and skills relevant to their field of work, thereby closing the gap between their existing competencies and those required by the organization. These results align with research.(Yunimas & Putro, 2016)which proves that training has a significant effect on employee competence. Work discipline also has a significant positive effect on competence with a path coefficient of 0.147 and a p-value of 0.001. Employees with high discipline tend to be more consistent

in carrying out their duties and are more open to improving their skills. This finding is supported by research (Ardiani, 2019) which shows that work discipline is closely related to the quality of human resources, including competence. Furthermore, competence has been shown to have a significant positive effect on employee performance, with a path coefficient of 0.005 and a p-value of 0.000. Employees with high competence are able to carry out tasks more accurately, efficiently, and innovatively, thereby increasing productivity and output quality. These results align with research (NKI Agustini & Dewi, 2018) which found that competence significantly influences employee performance. Testing for mediation effects showed that competence mediated the effect of training on employee performance (p-value 0.002) and that competence mediated the effect of work discipline on employee performance (p-value 0.002). These findings indicate that training and work discipline can improve performance more optimally by strengthening employee competence. These results are supported by research (F. Agustini, 2015) which shows that competence is an important mediating variable in the relationship between training and work discipline on performance.

CONCLUSION AND SUGGESTIONS

Based on the results of the data analysis and discussion, it can be concluded that training and work discipline have a significant positive effect on the performance of PPKS Medan employees, both directly and through the mediation of competency. Training contributes to improving employee knowledge and skills, which in turn improves performance. Work discipline shows the strongest influence in this research model, indicating that discipline is a key factor in achieving optimal performance. Competence has been shown to act as a mediating variable that strengthens the influence of training and work discipline on employee performance. Based on these findings, it is recommended that PPKS Medan management continue to develop structured training programs that are in line with the needs of current palm oil research, strengthen the monitoring and enforcement system to improve the culture of work discipline evenly, integrate competency development into each training program with a focus on strengthening technical and practical skills, and conduct regular evaluations of training effectiveness and work discipline levels to ensure sustainable improvements in organizational performance. Future research is expected to explore other factors that influence employee performance, such as work motivation, leadership, and the work environment, using qualitative or mixed methods research methods to gain a deeper understanding.

REFERENCES

- Agustini, F. (2015). Strategi Manajemen Sumber Daya Manusia. In Proceedings of the National Academy of Sciences (Vol. 3, Issue 1). <http://dx.doi.org/10.1016/j.bpj.2015.06.056> <https://academic.oup.com/bioinformatics/article-abstract/34/13/2201/4852827> <https://doi.org/10.1016/j.str.2013.02.005>
- Agustini, N. K. I., & Dewi, A. . S. K. (2018). Pengaruh Kompensasi, Disiplin Kerja Dan Motivasi Terhadap Produktivitas Karyawan. E-Jurnal Manajemen Universitas Udayana, 8(1), 231. <https://doi.org/10.24843/ejmunud.2019.v08.i01.p09>
- Ardiani, W. (2019). Dampak Motivasi Dan Kompetensi Terhadap Kinerja Yang Dimoderasi Variabel Kepemimpinan Pada Terminal Petikemas Di Pelabuhan Belawan. 3(3), 1–5.
- Deden A. Wahab Sya'roni Janivita J. Sudirham, & Fakultas. (2016). Kreativitas dan inovasi Penentu Kompetensi Pelaku Usaha Kecil Deden. Kandungan Protein Kasar, 11(1), 1–17. <https://elib.unikom.ac.id/files/disk1/631/jbptunikompp-gdl-dedenawaha-31522-3-jurnala-.pdf>
- Fauziah. (2017). Pengaruh Kompetensi, Independen, Dan Motivasi Terhadap Kualitas Audit Dalam Pengawasan Keuangan Daerah (Studi Empiris Pada Auditor Bpkp Perwakilan Provinsi Sumatera Utara). Owner, 1(1), 37–41. <https://doi.org/10.33395/owner>
- Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2014). A primer on partial least squares structural equation modeling (PLS-SEM). Thousand Oaks, CA: SAGE Publications, 6(2), 211–213. <https://doi.org/10.54055/ejtr.v6i2.134>

- Lasarik, Z., & Setiawan, M. (2019). Pengaruh Pelatihan Dan Pengawasan Terhadap Kinerja Karyawan Yang Dimediasi Oleh Keselamatan Dan Kesehatan Kerja (K3) (Studi Pada Pt Pln (Persero) Up3 Malang). *Jurnal Ilmiah Mahasiswa FEB*, 7(2), 1–14.
- Pramularso, E. Y. (2018). Pengaruh Kompetensi terhadap Kinerja Karyawan CV Inaura Anugerah Jakarta. *Widya Cipta*, II(1), 40–46.
- Pratama, T. O., MS, M. Z., & Hapsara, O. (2023). Pengaruh Pelatihan dan Motivasi terhadap Kompetensi Serta Dampaknya pada Kinerja Guru SMA Negeri 1 Batang Hari. *J-MAS (Jurnal Manajemen Dan Sains)*, 8(2), 1750. <https://doi.org/10.33087/jmas.v8i2.1463>
- Sapar, J. F. (2022). Pengaruh Kepuasan Kerja dan Motivasi terhadap Kinerja Karyawan pada PT. Astra International Tbk Daihatsu Banjarmasin. *Jurnal Riset Inspirasi Manajemen Dan Kewirausahaan*, 6(2), 101–107. <https://doi.org/10.35130/jrimk.v6i2.350>
- Senapan, A. W. M., & Senapan, S. T. (2022). Studi Literatur: Peran Desentralisasi Dalam Meningkatkan Kinerja Manajerial. *Seminar Nasional Akuntansi Dan Call for Paper (SENAPAN)*, 2(1), 28–35. <https://doi.org/10.33005/senapan.v2i1.169>
- Setyawati, A. N., Kusumaningsih, W., & Sulianto, J. (2024). Pengaruh Supervisi Akademik, Disiplin Guru dan Budaya Kerja terhadap Kinerja Guru SD Negeri di Wilayah Pedurungan. *Islamika*, 6(4), 1717–1726. <https://doi.org/10.36088/islamika.v6i4.5308>
- Sianturi, H. F., & Siregar, O. M. (2023). Pengaruh K3 (Keselamatan Dan Kesehatan Kerja) Dan Pelatihan Terhadap Kinerja Karyawan. *Jurnal Administrasi Bisnis*, 13(2), 91–98. <https://doi.org/10.35797/jab.13.2.91-98>
- Suparwo, A., & Pratama, A. F. (2021). Pengaruh Advertising dan Harga Penjualan Paket Umrah Plus Wisata Terhadap Minat Beli (Studi Pada PT.Sanabil Madinah Barakah Bandung). *Jurnal Sain Manajemen*, 3(1), 21–29. <http://ejurnal.ars.ac.id/index.php/jsm/index>
- Yunimas, A., & Putro, T. A. (2016). Analisis Disiplin Dan Motivasi Terhadap Kinerja Karyawan Pada CV Putra Luhur Blitar. *Jurnal Penelitian Manajemen Terapan*, 1(1), 50–64. <http://journal.stieken.ac.id/index.php/penataran/article/view/317>
- Yusuf, R. M., Taroreh, R. N., & Lumintang, G. G. (2019). Terhadap Kinerja Karyawan Pada Cv . Indospice Di Manado the Influence of Employee Engagement , Workload , and Job Satisfaction of the Employee Performance At Cv . Indospice in Manado. *Jurnal Emba*, 7(4), 4787–4797.
- Zillah, F., Husniati, R., & Alfida, A. (2023). Pengaruh Pelatihan dan Disiplin Kerja Terhadap Kinerja Karyawan The Influence of Training and Work Discipline on Employee Performance. *Jurnal Ilmiah Pariwisata Dan Bisnis*, 2(8), 1751–1771.