



The Influence of the E-Performance System and Leadership on Employee Performance: Work Discipline as an Intervening Variable

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Abstract

This research aims to discover the influence the E-Kinerja and Leadership System has on employee performance with the intervening variable Work Discipline at PT. Mutiara Agam Tiku V Jorong, Agam Regency. The data collection method is through surveys and distributing questionnaires, with a sample of 100 respondents. The analysis method used is path analysis using SMARTPLS 3. The research results showed that the E-Kinerja System had a positive and significant effect on Work Discipline. Leadership had a positive and significant effect on Work Discipline. The E-Kinerja system has a positive and significant effect on employee performance. Leadership has a positive and significant effect on employee performance. Work Discipline does not have a positive and significant influence on employee performance. Work Discipline does not mediate the influence of the E-Kinerja System on employee performance. Work Discipline does not mediate the influence of Leadership on employee performance. The contribution of the independent variables E-Kinerja System, Leadership and Work Discipline to the dependent variable Employee Performance is 83.6%. Meanwhile, the remaining 16.4% is influenced by other variables outside this research

Keywords: E-Performance System, Leadership, Employee Performance, Work Discipline

1. Introduction

One of the most potential and widely cultivated plantation crops in Indonesia is oil palm. The development of oil palm plantations in the past decade has become a focal point for the Indonesian government due to its significant contribution to both regional and national economies in terms of job creation, value addition, foreign exchange earnings, and food supply (Ba, 2016)

Indonesia's oil palm plantations have expanded rapidly, reflecting a plantation revolution. Oil palm plantations in Indonesia are spread across 22 out of 38 provinces. The two main islands that serve as oil palm plantation centers are Sumatra and Kalimantan. Around 90% of Indonesia's oil palm plantations are located on these two islands, producing 95% of the country's crude palm oil (CPO) (Purwanto et al., 2020)

The total plantation area for oil palm in Indonesia has generally increased over the past five years, except in 2016 when a decline occurred. In 2014, Indonesia's oil palm plantation area was recorded at 10.75 million hectares, increasing to 11.26 million hectares in 2015.

However, in 2016, the plantation area declined to 11.20 million hectares. Subsequently, in 2017, the plantation area grew again to 14.04 million hectares and was estimated to rise to 14.32 million hectares in 2018 and 14.67 million hectares in 2019. Meanwhile, Indonesia's oil palm production has increased annually, starting from IDR 29,278,189 in 2014 to an estimated IDR 42,869,429 in 2019 (Statistik, 2023).

In West Sumatra Province, the area of smallholder oil palm plantations has been increasing annually. This can be observed from 192,153 hectares in 2014, 194,089 hectares in 2015, 198,484 hectares in 2016, 236,536 hectares in 2017, 239,377 hectares in 2018, and 242,870 hectares in 2019. The production of smallholder oil palm plantations in West Sumatra has also shown consistent growth. Production in 2014 was 450,941 tons, rising to 459,793 tons in 2015, 471,429 tons in 2016, 555,529 tons in 2017, 575,286 tons in 2018, and reaching 600,399 tons in 2019 (Statistik, 2023).

The sub-district with the highest oil palm production in Agam Regency in 2018 was Tanjung Mutiara Sub-

district. Six sub-districts are engaged in oil palm cultivation, with the largest production coming from Tanjung Mutiara, Lubuk Basung, and Ampek Nagari. The total oil palm production in Agam Regency in 2018 was 27,745 tons, with Tanjung Mutiara contributing the highest amount at 18,812 tons, followed by Lubuk Basung with 7,779 tons, Ampek Nagari with 4,662 tons, Palembayan with 400 tons, Tanjung Raya with 60 tons, and Malalak with 31 tons (Statistik, 2020).

In Tanjung Mutiara Sub-district, a village cooperative unit called KUD Tikur V Jorong is located in Nagari Tikur V Jorong. KUD Tikur V Jorong operates an oil palm plantation business that continues to grow annually, with an available plantation area of approximately 2,400 hectares spread across several divisions or jorong. In its oil palm plantation business, KUD Tikur V Jorong collaborates with PT. Mutiara Agam as a palm oil mill for the sale of oil palm production.

A financial feasibility analysis is essential in the oil palm plantation business, as it determines investment plans through cost-benefit calculations, comparing expenditures, revenues, and payback periods (Darmawan, 2020). The financial aspect plays a crucial role in business feasibility studies, necessitating an assessment of income and cost factors to examine the role of leadership in improving efficiency and implementation. This serves as a consideration in

making strategic decisions regarding business operations (Shaheen, 2023).

However, a company's success is heavily influenced by leadership. Every leader strives to enhance employee performance in pursuit of company objectives. Human relationships within the workplace reflect employees' sense of responsibility in completing assigned tasks. In essence, every employee has a responsibility to complete their work, including those at PT Mutiara Agam, who must work hard and perform optimally to advance the company. Employees at PT Mutiara Agam also require a conducive work environment to support their performance.

The role of a leader in a company is highly strategic. Many researchers have studied work effectiveness in organizations, as leaders must understand employees' thought patterns to ensure compliance with work norms. Employee job satisfaction significantly impacts the organization.

Employee performance is crucial for a company's sustainability, particularly in achieving professional results in the automotive market. PT Mutiara Agam has faced challenges recently as employee performance levels have been unstable. Fluctuating sales have also hindered production outcomes. This situation has impacted employee performance at PT Mutiara Agam, as evidenced by the performance achievement data shown in the table.1 below.

Table. 1
Performance Achievement Data of PT Mutiara Agam

N	Year	Work Program	Percentage (%)
1	2018	Processing and marketing agricultural products	70.47%
	2019	Processing and marketing agricultural products	78.8%
	2020	Processing and marketing agricultural products	72.6%
2	2019	Pest and disease control	75.51%
	2020	Pest and disease control	74.2%
	2021	Pest and disease control	71%
3	2020	Seed distribution	74.50%
	2021	Seed distribution	74.30%
	2022	Seed distribution	75.20%

Source: PT Mutiara Agam, 2024

Based on Table 1, PT Mutiara Agam's performance results are suboptimal, with fluctuating and unstable annual achievement levels. The data show that three main work programs have experienced an average decline. This situation is attributed to the influence of the E-Performance System and Leadership, mediated by Work Discipline.

Pratiwi (2018) defines E-Performance as an application that helps organizations retain and motivate talented

individuals to deliver their best performance. E-Performance is a web-based application used to evaluate and measure employee performance based on job and workload analysis. It also serves as a basis for assessing work achievements.

Hamid (2019) defines leadership as influencing individuals to perform or refrain from performing specific actions. Leadership requires actively influencing others to achieve organizational goals.

Leadership is the ability to influence human behavior, either individually or in groups, regardless of established rules. When leadership is constrained by bureaucratic regulations or linked to a specific organization, it is referred to as management. Leaders are responsible for decision-making, work program development, contract creation, and the establishment of new regulations. Siswadi & Lestari (2021) states that work discipline is an individual's adherence to regulations or rules driven by internal awareness rather than coercion. Several studies support the impact of the E-Performance System and Leadership on Employee Performance, Work Discipline, and Organizational Outcomes: Niswaty et al. (2023) confirm a significant positive impact of the E-Performance System on Employee Performance. Niati et al. (2021) highlight a significant positive influence of Leadership on Employee Performance. Sembel et al. (2023) confirm the positive effect of the E-Performance System on Work Discipline. Adawiyah (2021) reinforces the significant positive influence of Leadership on Work Discipline (Shidiq, 2019) and highlights that Work Discipline has a significant positive impact on the E-Performance System.

2. Method

Sugiyono (2018) states that a sample is a subset of the population with similar characteristics. This study employs a non-probability sampling method. The total population in this study was 1250. The sample size was determined using quota sampling of 100 respondents. The research data was obtained using a questionnaire using a Likert scale of 1-5 (strongly disagree - strongly agree).

This study utilizes Structural Equation Modeling (SEM) with Partial Least Squares (PLS). PLS is a component-based approach for testing structural equation models, commonly referred to as SEM. This method uses iterative least squares estimation for both single and multiple-component models. PLS minimizes variance across all dependent variables, necessitating a clear definition of causal relationships between variables.

PLS consists of measurement models and structural models. It is a powerful method as it does not require strict assumptions, such as multivariate normal distribution, and accommodates categorical, ordinal, interval, and ratio-scale indicators within the same model. Additionally, PLS efficiently processes large, complex models with numerous latent variables and indicators.

In SmartPLS, three criteria are used to evaluate the outer model: (1) Convergent Validity: Assessed based on the correlation between item scores or component scores estimated using SmartPLS software. An indicator is considered reliable if its value exceeds 0.7, although values between 0.5 - 0.6 may still be acceptable in scale development research. (2) Composite Reliability: Evaluated using Composite Reliability and Cronbach's Alpha, both of which must be greater than 0.6. (3) Discriminant Validity: Assessed using cross-loading values, where an indicator's correlation with its construct should be higher than its correlation with other constructs. Alternatively, it can be tested by comparing the square root of Average Variance Extracted (AVE) with correlations among constructs.

The inner model is tested to examine relationships between variables, significance values, and R-square values. The R-square value changes indicate the influence of independent variables on dependent variables, determining their substantive impact.

3. Result and Discussion

This survey research collects primary data from a population sample using a processed questionnaire instrument. The population in this study consists of PT employees. Mutiara Agam Tiku V Jorong, Agam Regency. The sampling technique used in this study is probability sampling with a stratified random sampling model, which ensures that each member has an equal opportunity to be selected as a sample. This means that every member of the population has the same chance of being included in the study sample. The results of the questionnaire distribution to respondents are presented in the following table:

Table. 2
Results of Questionnaire Distribution

Characteristic	Questionnaires Distributed	Questionnaires Lost/Not Returned	Questionnaires Returned	Percentage
Questionnaire for instrument	100	0	100	100%

Source: Processed Primary Data, 2025

The characteristics of respondents in this study Tiku V Jorong, Agam Regency, including gender, age, represent the profile of employees at PT. Mutiara Agam education, work tenure, and income level.

Table. 3
Respondent Characteristics

Description	Quantity	Percentage (%)
Gender		
Male	37	36
Female	63	64
Age		
20-30 years	44	43
31-40 years	33	34
> 41 years	23	23
Education		
High School Equivalent	-	-
Diploma	-	-
Bachelor's Degree	77	77
Master's Degree	23	23
Doctorate	-	-
Work Tenure		
1-5 years	35	33
6-10 years	45	45
>10 years	20	20
Income		
< Rp 2,000,000 / Month	14	14
Rp 2,000,000 – 5,000,000 / Month	43	42
Rp 5,000,000 – 8,000,000 / Month	37	38
> Rp 8,000,000 / Month	6	1

Source: Processed Primary Data, 2025

Based on the characteristics of PT. Mutiara Agam employees, in terms of gender, out of 100 respondents in this study, 37 employees (36%) were male, while 63 employees (64%) were female. This indicates that the majority of employees are female. Regarding age distribution, 44 employees (43%) were aged between 20-30 years, 33 employees (34%) were between 31-40 years old, and 23 employees (23%) were above 41 years old. In terms of education, no respondents had only a high school diploma or a diploma. 77 employees (77%) held a bachelor's degree, while 23 (23%) held a master's degree. No respondents had a doctoral degree. Regarding work tenure, 35 employees (33%) had worked for 1-5 years, 45 employees (45%) had worked for 6-10 years, and 20 employees (20%) had worked for more than 10 years. In terms of income levels, 14 employees (14%) earned less than Rp 2,000,000 per month, 43 employees (42%) earned between Rp 2,000,000 – 5,000,000 per month, 37 employees (38%) earned between Rp 5,000,000 – 8,000,000 per month, and 6 employees (1%) earned more than Rp 8,000,000 per month.

The data processing technique used in this study is the SEM method based on Partial Least Squares (PLS). This method requires two stages to assess the research model: the outer and inner models. The evaluation of the outer model aims to assess the correlation between item scores (indicators) and their constructs, determining the validity of each statement item. The outer model test is conducted based on the questionnaire trial results for all research variables. There are three criteria for evaluating the outer model in data analysis techniques: Convergent Validity, Discriminant Validity, and Composite Reliability. A correlation value of 0.50 to 0.60 is considered acceptable in the development stage. In this study, the threshold for convergent validity is set above 0.5. The validity of a construct or variable can also be assessed through the Average Variance Extracted (AVE) value of each construct or variable. A construct is considered to have high validity if its AVE value is above 0.50. The AVE values for all constructs (variables) are presented in Table 4:

Table. 4
Average Variance Extracted (AVE) Values

Variable	AVE
Employee Performance (Y)	0.597
Work Discipline (Z)	0.633
E-Performance System (X1)	0.812
Leadership (X2)	0.517

Source: Processed Primary Data, 2025

Based on Table 4, it can be concluded that all constructs or variables meet good validity criteria. This is demonstrated by the Average Variance Extracted (AVE) values being above 0.50, as recommended.

After determining the validity level of the data, the next step is to assess the reliability of the data or the

reliability level of each construct or variable. This assessment is done by looking at the composite reliability value and the Cronbach's alpha value. A construct is considered reliable if the Cronbach's alpha value is greater than 0.70. The reliability test results are presented in Table 5.

Table. 5
Reliability Values

Construct (Variable)	Cronbach's Alpha	Composite Reliability	Rule of Thumb	Description
Employee Performance (Y)	0.924	0.936	0.7	Reliable
Work Discipline (Z)	0.917	0.918	0.7	Reliable
E-Performance System (X1)	0.971	0.975	0.7	Reliable
Leadership (X2)	0.917	0.905	0.7	Reliable

Source: Processed Primary Data, 2025

Based on the SmartPLS output in Table 4.4 above, it is evident that the composite reliability and Cronbach's alpha values for each construct or variable are above 0.70. Thus, it can be concluded that the data reliability level is good.

The next step is the inner model or structural model testing, which aims to determine the relationships between constructs as hypothesized. The structural model is evaluated by considering the R-Square value for the endogenous constructs based on the influence they receive from the exogenous constructs.

Table. 6
Coefficient Determination Test Result

Variables	R Square
Work Discipline (Z)	0.836
Employee Performance (Y)	0.810

Source: Processed Primary Data, 2025

In Table 6, the R-Square value for the Employee Performance construct is 0.810 or 81%, indicating the extent of influence received by the Employee Performance construct from the E-Performance System, Leadership, and Work Discipline constructs. Meanwhile, the R-Square value for the Work Discipline is 0.836 or 83.6%, showing the degree of influence exerted by the E-Performance System and Leadership constructs in explaining or affecting Work Discipline. The higher the R-Square value, the greater the ability of the exogenous constructs to explain the endogenous variable, resulting in a better-structured equation

Hypothesis testing aims to address the research problem by examining the influence of specific exogenous latent constructs on specific endogenous latent constructs, either directly or indirectly through an intervening variable. This study assesses hypothesis testing based on the t-statistic or t-value, compared to the t-table value of 1.96 at a 5% alpha level. Ho is rejected if the t-statistic/t-value < t-table 1.96 at a 5% alpha level. Ha is accepted if the t-statistic/t-value > t-table 1.96 at a 5% alpha level. The following SmartPLS output in Table 7 presents the estimation results for structural model testing.

Table.7
Hypothesis Testing Results

Hypothesis	Statement	t-Statistic	P-Value	Description
H1	The E-Performance System has a positive and significant effect on Work Discipline	6.258 > 1.96	0.000 < 0.05	Accepted, because the t-statistic is greater than 1.96 and the p-value is less than 0.05
H2	Leadership has a positive and significant effect on Work Discipline	19.684 > 1.96	0.000 < 0.05	Accepted, because the t-statistic is greater than 1.96 and the p-value is less than 0.05
H3	The E-Performance System has a positive and significant effect on Employee Performance	2.224 > 1.96	0.027 < 0.05	Accepted, because the t-statistic is greater than 1.96 and the p-value is less than 0.05
H4	Leadership has a positive and significant effect on Employee Performance	6.257 > 1.96	0.000 < 0.05	Accepted, because the t-statistic is greater than 1.96 and the p-value is less than 0.05
H5	Work Discipline does not have a positive and significant effect on Employee Performance	0.070 < 1.96	0.944 > 0.05	Rejected, because the t-statistic is less than 1.96 and the p-value is greater than 0.05
H6	The E-Performance System does not have a positive and significant effect on Employee Performance through Work Discipline	0.069 < 1.96	0.945 > 0.05	Rejected, because the t-statistic is less than 1.96 and the p-value is greater than 0.05
H7	Leadership does not have a positive and significant effect on Employee Performance through Work Discipline	0.070 < 1.96	0.944 > 0.05	Rejected, because the t-statistic is less than 1.96 and the p-value is greater than 0.05

Source: Processed Primary Data, 2025

The Influence of the E-Performance System on Work Discipline Data testing using the SmartPLS program found that the coefficient value of the E-Performance System was 6.258, indicating the magnitude of the influence of this construct on Work Discipline. A comparison is made between the t-statistic (t-calculated) and the t-table value of 1.96 at a 5% alpha level to determine whether this hypothesis is accepted or rejected. Since the t-statistic > t-table (6.258 > 1.96) with a p-value of 0.000 < 0.05, H0 is rejected, and H1 is accepted. In other words, the E-Performance System significantly positively influences work discipline. This research result aligns with studies conducted by (Gusty et al., 2020) which found that the E-Performance System significantly positively impacts Work Discipline.

The Influence of Leadership on Work Discipline Data testing using the SmartPLS program found that the Leadership coefficient was 19.684, indicating the magnitude of Leadership's influence on Work Discipline. The hypothesis is accepted by comparing the t-statistic with the t-table value (19.684 > 1.96) at a 5% alpha level and a p-value of 0.000 < 0.05, meaning

H0 is rejected and H2 is accepted. Thus, there is a significant positive influence of Leadership on Work Discipline. This research result in line with previous studies conducted by (Aryanti & Perkasa, 2024) which found different results regarding the influence of Leadership on Work Discipline.

The Influence of the E-Performance System on Employee Performance Data testing using SmartPLS shows that the E-Performance System coefficient was 2.224, reflecting the impact of the E-Performance System on Employee Performance. With the t-statistic > t-table (2.224 > 1.96) at a 5% alpha level and a p-value of 0.027 < 0.05, H0 is rejected, and H3 is accepted. Thus, the E-Performance System has a significant positive influence on employee performance. This result is consistent with studies conducted by (Faizatun & Mufid, 2020) and (Rianti, 2017), which also found a significant positive influence of the E-Performance System on Employee Performance.

The Influence of Leadership on Employee Performance Data testing using SmartPLS found that the Leadership

coefficient was 6.257, indicating the magnitude of Leadership's influence on Employee Performance. With the $t\text{-statistic} > t\text{-table}$ ($6.257 > 1.96$) at a 5% alpha level and a $p\text{-value}$ of $0.000 < 0.05$, H_0 is rejected, and H_4 is accepted. This indicates that leadership has a significant positive influence on employee performance. This research result aligns with studies conducted by (Yeni, 2020) and (Eliyana & Ma'arif, 2019) which also found a significant positive influence of Leadership on Employee Performance.

The Influence of Work Discipline on Employee Performance Based on data processing using SmartPLS, the Work Discipline coefficient was 0.070. The hypothesis is rejected by comparing the $t\text{-statistic}$ with the $t\text{-table}$ value ($0.070 < 1.96$) and a $p\text{-value}$ of $0.944 > 0.05$, meaning H_0 is accepted, and H_5 is rejected. This indicates that Work Discipline does not significantly influence Employee Performance. This result is consistent with the study conducted by (Riana & Aghata, 2019), which also found that Work Discipline does not significantly affect Employee Performance.

The Influence of the E-Performance System on Employee Performance through Work Discipline: an indirect effect test was conducted to test the mediation effect. With the $t\text{-statistic} < t\text{-table}$ ($0.069 < 1.96$) and a $p\text{-value}$ of $0.945 > 0.05$, the hypothesis is rejected, meaning H_0 is accepted, and H_6 is rejected. In other words, the E-Performance System has no significant influence on Employee Performance through Work Discipline. This research result contradicts the study conducted by (Pratiwi, 2018) which found that the E-Performance System significantly influences Employee Performance through Work Discipline.

An indirect effect test was conducted to determine the influence of leadership on employee performance through work discipline to test whether work discipline mediates the relationship between leadership and employee performance. With the $t\text{-statistic} < t\text{-table}$ ($0.070 < 1.96$) and a $p\text{-value}$ of $0.944 > 0.05$, the hypothesis is rejected, meaning H_0 is accepted, and H_7 is rejected. This indicates no significant influence of Leadership on Employee Performance through Work Discipline. This research result contradicts the study conducted by (Suhartono et al., 2023) which found that Leadership significantly influences Employee Performance through Work Discipline.

4. Conclusion

Based on the discussions in the previous chapters, several conclusions can be drawn regarding the relationships between the E-Performance System, Leadership, Work Discipline, and Employee Performance.

First, the study found that the E-Performance System significantly influences Work Discipline, indicating that the implementation of such a system plays a crucial role in shaping employee discipline. Similarly, Leadership also significantly influences Work Discipline, highlighting the importance of effective leadership in maintaining employee discipline within an organization.

However, the findings suggest that the E-Performance System does not significantly influence Employee Performance. This implies that while the system may impact other aspects, it does not directly enhance employee performance. In contrast, Leadership significantly influences Employee Performance, reaffirming the crucial role of leadership in driving better performance outcomes.

Moreover, the results indicate that Work Discipline does not significantly influence Employee Performance, suggesting that discipline alone may not be a determining factor in performance levels. Additionally, the E-Performance System has no significant influence on Employee Performance through Work Discipline, meaning that work discipline does not mediate the relationship between the system and performance. Lastly, Leadership does not significantly influence Employee Performance through Work Discipline, further confirming that work discipline does not serve as a key mediating factor in this context.

Overall, these findings emphasize the importance of Leadership in both Work Discipline and Employee Performance, while also questioning the direct impact of the E-Performance System on performance outcomes.

This study, while providing valuable insights into the influence of the E-Performance System, Leadership, and Work Discipline on Employee Performance, is not without its limitations. First, the research only focused on a specific population and organizational setting, which may limit the generalizability of the findings to other industries or workplaces with different structures and operational dynamics. Future studies could expand the scope by including multiple organizations or sectors to better understand the relationships among these variables.

Second, this study relied on quantitative methods, which, while effective in measuring relationships, do not fully capture the underlying reasons and contextual factors influencing employee behavior. Future research could incorporate qualitative approaches, such as interviews or case studies, to provide deeper insights

into how employees perceive and respond to the E-Performance System, Leadership, and Work Discipline.

Another limitation is the use of Work Discipline as the sole intervening variable in the model. The results suggest that Work Discipline does not mediate the relationship between the E-Performance System and Leadership on Employee Performance. This indicates that other potential mediating variables, such as motivation, job satisfaction, or organizational culture, could play a more significant role. Future research should explore these additional variables to develop a more holistic model of employee performance.

Several recommendations can be made for organizations and future researchers based on these limitations. Organizations should consider complementing the E-Performance System with leadership development programs to maximize its effectiveness in shaping Work Discipline and enhancing Employee Performance. Additionally, management should explore alternative performance assessment methods that are not solely dependent on discipline but also focus on motivation and job satisfaction.

For researchers, expanding the scope of study to different industries, employing mixed-method approaches, and incorporating additional mediating and moderating variables will help enrich the existing body of knowledge. Moreover, using more sophisticated analytical methods will enable a deeper exploration of the complexities involved in employee performance dynamics.

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