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Address: JL. Z.A. Pagar Alam No. 89, Bandar Lampung, Indonesia

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Email: innovator@ubl.ac.id

Online Attendance Systems, Supervision, and Employee Performance: An Empirical Study in the Public Sector

Muhammad Faisal Sidiq¹,

Irma Khirana²

M. Jaelani³

University of Bandar Lampung, Lampung, Indonesia

ABSTRACT

Employee performance is a critical determinant of organizational effectiveness, particularly in public institutions. The implementation of online attendance systems and effective supervision are considered essential mechanisms for improving discipline, accountability, and productivity. Online attendance systems enhance the accuracy of attendance records, minimize fraudulent practices, and enable real-time monitoring, while supervision ensures that employees perform their responsibilities efficiently and professionally. This study examines the effects of online attendance systems and supervision on employee performance using a quantitative survey approach. Data were collected through questionnaires and analyzed using statistical methods. The findings reveal that online attendance systems have a significant positive effect on employee performance, contributing 41.5%, whereas supervision contributes 48.6%. Simultaneously, both variables explain 65.1% of the variation in employee performance, indicating their substantial combined influence. The study concludes that strengthening digital attendance practices, supervisory processes, and performance evaluation mechanisms is necessary to promote greater transparency, fairness, and organizational effectiveness.

Keywords: *Online Attendance Implementation, Supervision, Employee Performance.*

INTRODUCTION

The development of digital technology has driven transformation in human resource management across various organizations (Zhang & Chen, 2024). Various institutions are increasingly adopting digital systems to enhance the efficiency, transparency, and accountability of personnel administration. One of the commonly implemented innovations is the online attendance system, which allows for real-time attendance recording, reduces administrative errors, and minimizes the potential for data manipulation (Ariyanto, 2025). In performance-oriented organizations, attendance management is no longer merely an administrative function, but has become a strategic instrument to strengthen discipline and organizational effectiveness (Fauzan et al., 2024).

However, the success of the online attendance system is not only determined by technological readiness but also by managerial support and employee compliance (Putri et al., 2025). In practice, technical constraints, limited user understanding, and non-compliance with procedures still often reduce the system's effectiveness. Internal data shows that the average employee attendance reaches 82% of the ideal attendance level, while the remaining 18% consists of permissions, leave, sick leave, absences, and external assignments. The attendance rate fluctuates between 81% and 85% during the observation

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*Corresponding Author

Email address: mfaisalsidiqga@gmail.com

period, indicating that the digital attendance system still requires governance reinforcement to improve work consistency and discipline (Handayani et al., 2025).

Beside technological factors, supervision is an important mechanism in directing employee behavior and maintaining organizational standards (Usman et al., 2023). Effective supervision can enhance accountability, ensure compliance with procedures, and encourage work productivity. Conversely, weak supervision can reduce discipline and diminish the benefits of the digital control system. Wahyuni et al. (2024) state that active leadership and consistent supervision significantly influence the success of technology implementation and the improvement of service quality. Therefore, supervision needs to be viewed as a managerial instrument that complements the online attendance system.

The study on the relationship between online attendance systems, supervision, and employee performance is important both theoretically and practically. Theoretically, this research expands the literature on human resource management through the integration of digital control mechanisms and supervisory practices. Practically, the research results are expected to help organizations improve attendance governance, refine performance evaluation systems, and enhance employee productivity through appropriate managerial interventions (Habiburrahman et al., 2019).

Although previous research has discussed digital attendance systems and supervision separately, studies analyzing the simultaneous influence of both on employee performance are still limited. Moreover, many previous studies have focused more on attendance discipline rather than broader performance outcomes, such as productivity, accountability, and work effectiveness. This gap highlights the need for empirical evidence on how online attendance systems and supervision together affect employee performance, which is the main objective of this research.

LITERATURE REVIEW

a. Online Attendance System

The online attendance system is a digital innovation in human resource management designed to enhance the efficiency, transparency, and accuracy of attendance administration (Ali et al., 2022). Unlike manual methods, this system allows for real-time attendance recording, reduces administrative errors, and minimizes the potential for data manipulation (Barusman et al., 2021). In modern organizations, online attendance systems also support faster data processing and are integrated with other managerial functions, such as payroll and performance evaluation (Mathis & Jackson, 2011; Wahyudi, 2020).

The effectiveness of the online attendance system is reflected in its ability to strengthen work discipline and provide reliable attendance data for management decision-making. However, the success of its implementation is influenced by organizational readiness, user capability, technological infrastructure, and management commitment. Previous research shows that digital attendance systems positively

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*Corresponding Author

Email address: mfaisalsidiqga@gmail.com

contribute to employe efficiency, productivity, and compliance when supported by adequate governance (Jalaman & Encarnacion, 2024; Ussher-Eke et al., 2025).

b. Supervision

Supervision is a managerial process aimed at ensuring that all organizational activities run according to the established plans, standards, and procedures (Alamsyah et al., 2024). Supervision includes monitoring the execution of tasks, evaluating work results, and taking corrective actions if deviations are found. Thru effective supervision, organizations can maintain control, enhance accountability, and ensure operational consistency (Rothwell et al., 2021).

From the perspective of organizational behavior, supervision also serves as a motivational mechanism because employes tend to perform better when expectations, feedback, and evaluation standards are communicated clearly (Lutfi et al., 2022). Several studies show that structured and continuous supervision significantly impacts the improvement of discipline, service quality, and employe performance . Therefore, supervision remains an important instrument in organizational governance, both in conventional and digital systems (Monkiewicz & Monkiewicz, 2022).

c. Employee Performance

Employe performance is the work result achieved by individuals in carrying out tasks and responsibilities according to the established standards (Zaqiyah et al., 2024). Performance is generally measured thru the quality of work, quantity of output, timeliness, adherence to rules, and effectiveness in task execution. As an organizational output, performance reflects the extent to which human resources can contribute to the achievement of the organization's strategic goals (Nafari & Rezaei, 2022).

Performance is influenced by various factors, such as individual competence, motivation, leadership, work systems, and the organizational environment. Kiyabo & Isaga (2020) emphasize that work results are simultaneously influenced by both personal and structural factors. Therefore, performance improvement not only requires competent employes but also an effective management system and adequate supervision practices.

d. Framework and Hypotheses

The online attendance system provides accurate and real-time attendance data, thereby enhancing discipline, punctuality, and the effectiveness of managerial evaluations. On the other hand, supervision ensures that employes adhere to procedures, receive corrective feedback, and remain aligned with the organization's goals. The integration between the digital attendance system and effective supervision is expected to create stronger accountability and improve employe performance.

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*Corresponding Author

Email address: mfaisalsidiqga@gmail.com

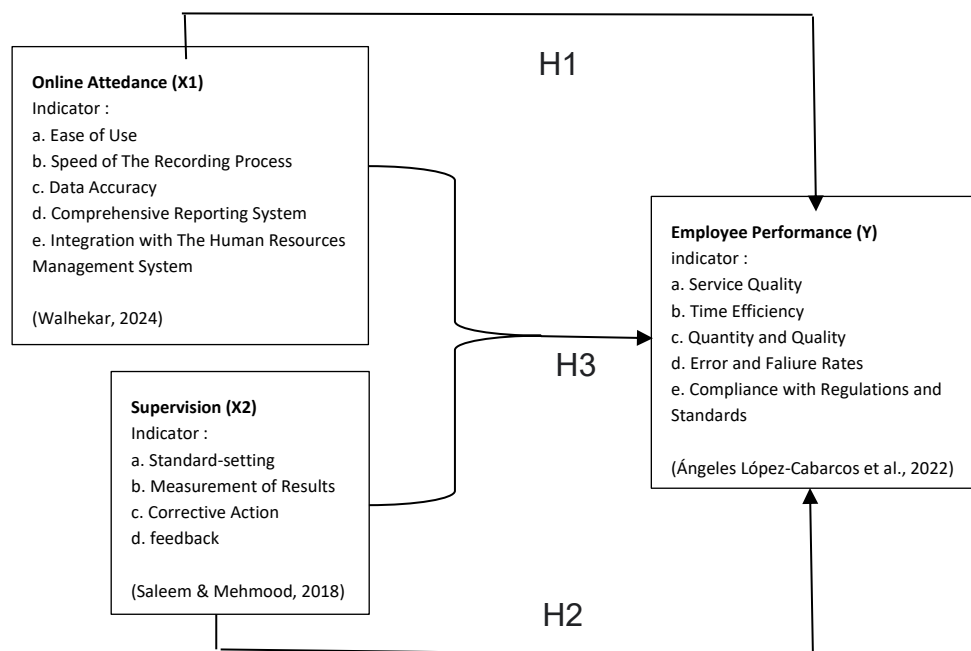


Figure 1. Conceptual Framework

Source: Processed data, 2025

Based on the theoretical arguments and previous empirical findings, the hypotheses are formulated as follows:

H1: The implementation of online attendance has a positive impact on employe performance.

H2: Supervision has a positive impact on employe performance.

H3: The implementation of online attendance and simultaneous supervision has a positive impact on employe performance.

METHODOLOGY

This study uses a quantitative approach with descriptive and associative designs to analyze the relationship between the implementation of online attendance, supervision, and employe performance at the Transportation Agency of South Lampung Regency. The descriptive approach is used to describe the actual condition of each variable, while the associative approach aims to empirically test the influence of independent variables on dependent variables (Almquist et al., 2020). The focus of the research is directed toward issues of attendance discipline, the effectiveness of supervision, and efforts to improve employe performance thru the utilization of a digital-based administrative system.

The research population consists of 113 active employes at the Transportation Agency of South Lampung Regency. The sample was determined using the proportional random sampling technique so that each work unit receives balanced representation. The sample size was calculated using the Slovin

formula with a 10% margin of error (Nurkholis et al., 2024), resulting in 53 respondents as the research sample.

$$n = \frac{N}{1 + N(e^2)} = \frac{113}{1 + 113(0,1)^2} = 53,05 = 53 \text{ orang}$$

Explanation: n = Total Sample Size, N = Total Population Size, e = Margin of Error. Based on these calculations, a sample size of 53 respondents was obtained, which is considered representative of the research population.

Table 1. Determination of Research Sample

No	Section / Division	Population	Sample
1	Secretariat	19	$(19/113) \times 53 = 9$
2	Traffic Division	54	$(54/113) \times 53 = 25$
3	Transportation Division	16	$(16/113) \times 53 = 8$
4	Infrastructure and Safety Division	24	$(24/113) \times 53 = 11$
Total		113	53

Source: Processed data, 2025

Primary data were collected thru the distribution of closed questionnaires using a five-point Likert scale, while secondary data were obtained from internal organizational documents, attendance reports, and performance evaluation records. The research instruments were developed based on the theoretical indicators of each variable, namely ease of system use, recording speed, and data accuracy for online attendance; standard setting, result evaluation, corrective actions, and feedback for supervision; as well as service quality, time efficiency, work output quantity, error rate, and compliance with standards for employe performance.

Before the main analysis is conducted, the instrument is tested for validity and reliability using Pearson correlation and Cronbach's Alpha coefficient to ensure measurement consistency. Data analysis includes descriptive statistics and multiple linear regression with the help of SPSS software version 26.0. The t-test is used to assess the partial influence of each independent variable, while the F-test is used to examine the simultaneous influence of both independent variables on employe performance at a significance level of 5%.

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*Corresponding Author

Email address: mfaisalsidiqga@gmail.com

RESULT AND DISCUSSION

RESULT

a. Characteristics of respondents

Research data were collected thru the distribution of questionnaires filled out directly by 53 employees at the Transportation Agency of South Lampung Regency as research respondents. The characteristics of the respondents are presented based on gender and age groups to provide an overview of the research participants' profiles.

Table 2. Respondent Distribution by Gender

No.	Gender	Frequency	Percentage
1	Male	36	67.9%
2	Female	17	32.1%
Total		53	100%

Source: Processed data, 2025

Based on Table 2, the majority of respondents were male, totaling 36 individuals (67.9%), while the female respondents numbered 17 (32.1%). This composition indicates that the research sample was dominated by male employees.

Table 3. Respondent Distribution by Age

No.	Age Group	Frequency	Percentage
1	26–30 Years	14	26.4%
2	31–35 Years	12	22.6%
3	36–40 Years	10	18.9%
4	41–45 Years	9	17.0%
5	46–50 Years	5	9.4%
6	Above 51 Years	3	5.7%
Total		53	100%

Source: Processed data, 2025

Based on Table 3, the age group of 26–30 years is the largest category with 14 respondents (26.4%), followed by the age group of 31–35 years with 12 respondents (22.6%). The age group of 36–40 years has 10 respondents (18.9%), while the age group of 41–45 years has 9 respondents (17.0%). Respondents aged 46–50 years number 5 people (9.4%), and the age group above 51 years constitutes the smallest proportion with 3 respondents (5.7%).

b. Validity and Reliability Tests

Instrument testing is conducted to ensure that each statement item in the questionnaire can accurately and consistently measure the research variables. The validity test uses the corrected item–total

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*Corresponding Author

Email address: mfaisalsidiqga@gmail.com

correlation method, where an item is considered valid if the correlation value is greater than the r-table value of 0.271 ($n = 53$; $\alpha = 0.05$). Meanwhile, the reliability test was conducted using Cronbach's Alpha, with a value above 0.60 indicating that the instrument has a good level of internal consistency.

Based on the test results, all indicators on the Online Attendance Implementation variable (X_1) meet the criteria for validity and reliability. The details of the test results are presented in the following Table 4.

Table 4. Validity and Reliability Test of Online Attendance Variable (X_1)

Variable	Item	Corrected Item–Total Correlation	r-table	Cronbach's Alpha	Cronbach's Alpha if Item Deleted
Online Attendance (X_1)	1	0.351	0.271	0.809	0.806
	2	0.522			0.789
	3	0.354			0.805
	4	0.482			0.793
	5	0.455			0.796
	6	0.631			0.775
	7	0.636			0.775
	8	0.517			0.789
	9	0.477			0.794
	10	0.435			0.800

Source: Processed data, 2025

Based on Table 4, the corrected item-total correlation values range from 0.351 to 0.636 and all exceed the r-table value of 0.271. The Cronbach's Alpha value of 0.809 indicates that the instrument for this variable is reliable and suitable for further analysis.

Next, the testing of the Supervision variable (X_2) also shows results that meet the validity and reliability criteria. The complete results are displayed in Table 5 below.

Table 5. Validity and Reliability Test of Supervision Variable (X_2)

Variable	Item	Corrected Item–Total Correlation	r-table	Cronbach's Alpha	Cronbach's Alpha if Item Deleted
Supervision (X_2)	1	0.538	0.271	0.831	0.816
	2	0.549			0.812
	3	0.378			0.829
	4	0.432			0.824
	5	0.496			0.818
	6	0.540			0.814
	7	0.554			0.812
	8	0.560			0.811
	9	0.548			0.813

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*Corresponding Author

Email address: mfaisalsidiqga@gmail.com

Variable	Item	Corrected Item–Total Correlation	r-table	Cronbach's Alpha	Cronbach's Alpha if Item Deleted
	10	0.635			0.802

Source: Processed data, 2025

Based on Table 5, the corrected item-total correlation values range from 0.378 to 0.635, all of which are above the r-table value. The Cronbach's Alpha value of 0.831 indicates that the monitoring instrument has a very good level of reliability.

Next, the testing of the Employee Performance variable (Y) also showed very satisfactory results in terms of both validity and reliability. The details of the test results can be seen in Table 6 below.

Table 6. Validity and Reliability Test of Employee Performance Variable (Y)

Variable	Item	Corrected Item–Total Correlation	r-table	Cronbach's Alpha	Cronbach's Alpha if Item Deleted
Employee Performance (Y)	1	0.613			0.921
	2	0.547			0.920
	3	0.675			0.916
	4	0.704			0.916
	5	0.696	0.271	0.914	0.915
	6	0.752			0.913
	7	0.670			0.916
	8	0.704			0.916
	9	0.758			0.913
	10	0.729			0.912

Source: Processed data, 2025

Based on Table 6, the corrected item-total correlation values range from 0.547 to 0.758, indicating that all items are valid. The Cronbach's Alpha value of 0.914 shows a very high level of reliability. Thus, all research instruments have met the validity and reliability requirements, making them suitable for hypothesis testing and subsequent regression analysis.

c. Descriptive Analysis

Descriptive analysis was conducted to illustrate the tendency of respondents' answers toward the variables of Online Attendance Implementation (X_1), Supervision (X_2), and Employee Performance (Y) at the Transportation Agency of South Lampung Regency. Data were obtained from 53 respondents and measured using a five-point Likert scale. To determine the assessment categories, the class intervals were first calculated based on the minimum and maximum scores of each variable.

The lowest score for each variable is 10 (10 items \times score 1), while the highest score is 50 (10 items \times score 5). With five assessment categories, the class interval is calculated as follows:

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*Corresponding Author

Email address: mfaisalsidiqga@gmail.com

$$\text{Interval} = \frac{NT - NR}{A} = \frac{50 - 10}{5} = 8$$

The results of the calculations are used as a basis for categorizing the respondents' assessment levels for each research variable.

Descriptive analysis was conducted to illustrate respondents' perceptions of the research variables, namely the Implementation of Online Attendance (X_1), Supervision (X_2), and Employee Performance (Y) at the Transportation Agency of South Lampung Regency. This analysis uses frequency distribution, percentage, and average score values to show the tendency of respondents' answers for each variable.

Based on the data processing results, the majority of respondents rated the implementation of online attendance as being in the positive category. The distribution of respondents' ratings for this variable can be seen in Table 7 below.

Table 7. Frequency Distribution of Online Attendance Implementation (X_1)

No	Score Interval	Frequency	Percentage (%)	Category
1	42.00–50.00	22	41.51	Very Good
2	34.00–41.00	24	45.28	Good
3	26.00–33.00	7	13.21	Fair
4	18.00–25.00	0	0.00	Poor
5	10.00–17.00	0	0.00	Very Poor
Total		53	100	

Source: Processed data, 2025

Based on Table 7, 45.28% of respondents rated the implementation of online attendance as Good, followed by 41.51% in the Very Good category. There were no respondents who gave a negative assessment. This indicates that the online attendance (X_1) system has been well received by the employees.

To determine the respondents' assessment on each indicator, the results are presented in the following Table 8.

Table 8. Percentage of Research Results Based on Online Attendance Indicators (X_1)

No	Statement	Achievement Score	Maximum Score	%	Category
1	The online attendance system is easy to use without complex training.	226	265	85.28	Very Good
2	Usage guidelines are available and easy to understand.	210	265	79.25	Good
3	Attendance recording is completed quickly.	209	265	78.87	Good
4	Attendance is recorded in real time.	208	265	78.49	Good
5	Attendance data matches field conditions.	194	265	73.21	Good

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*Corresponding Author

Email address: mfaisalsidiqga@gmail.com

No	Statement	Achievement Score	Maximum Score	%	Category
6	The system minimizes recording errors.	205	265	77.36	Good
7	Reports are accurate and accessible.	210	265	79.25	Good
8	Reporting helps monitor employee performance effectively.	203	265	76.60	Good
9	The system is integrated with personnel management platforms.	224	265	84.53	Very Good
10	The system supports fair data processing.	216	265	81.51	Good
Average		210.50		79.43	Good

Source: Processed data, 2025

Based on Table 8, the highest indicator is the ease of system use (85.28%), while the lowest score is the alignment of attendance data with field conditions (73.21%). Overall, the variable of Online Attendance Implementation falls into the Good category. Next, respondents' perceptions of the Supervision variable (X_2) also show positive results. The frequency distribution of supervision scores can be seen in the following Table 9.

Table 9. Frequency Distribution of Supervision Scores (X_2)

No	Class Interval	Frequency	Percentage (%)	Category
1	42.00–50.00	21	39.62	Very Good
2	34.00–41.00	19	35.85	Good
3	26.00–33.00	13	24.53	Fair
4	18.00–25.00	0	0.00	Poor
5	10.00–17.00	0	0.00	Very Poor
Total		53	100	

Source: Processed data, 2025

Based on Table 9, the majority of respondents rated the supervision as Very Good and Good, with no negative assessments. This indicates that the organization's supervision system has been functioning effectively.

Table 10. Percentage of Research Results Based on Supervision Indicators (X_2)

No	Statement	Achievement Score	Maximum Score	%	Category
1	Supervision by leaders has been implemented hierarchically.	226	265	85.28	Very Good
2	Work has been carried out according to standards.	209	265	78.87	Good
3	Work standards are updated and understood.	197	265	74.34	Good

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*Corresponding Author

Email address: mfaisalsidiqga@gmail.com

No	Statement	Achievement Score	Maximum Score	%	Category
4	Results are measured according to regulations.	190	265	71.70	Good
5	Measurement follows institutional standards.	208	265	78.49	Good
6	Supervision results are evaluated and corrected.	193	265	72.83	Good
7	Corrective actions solve work problems.	223	265	84.15	Very Good
8	Corrective actions do not create new problems.	204	265	76.98	Good
9	Supervision provides feedback for future tasks.	228	265	86.04	Very Good
10	Employees and leaders understand mutual expectations.	191	265	72.08	Good
Average		206.90		78.08	Good

Source: Processed data, 2025

Based on Table 10, the highest indicator is the supervisory feedback function (86.04%), while the lowest indicator is the measurement of work results according to regulations (71.70%). In general, the Supervision variable falls into the Good category.

Next, the Employee Performance variable (Y) shows a predominantly positive evaluation. The distribution of employee performance scores is shown in the following Table 11.

Table 11. Frequency Distribution of Employee Performance Scores (Y)

No	Class Interval	Frequency	Percentage (%)	Category
1	42.00–50.00	22	41.51	Very High
2	34.00–41.00	17	32.08	High
3	26.00–33.00	9	16.98	Moderate
4	18.00–25.00	5	9.43	Low
5	10.00–17.00	0	0.00	Very Low
Total		53	100	

Source: Processed data, 2025

Based on Table 11, 73.59% of respondents rated employee performance as being in the High and Very High categories, indicating that employee work performance is relatively good.

Table 12. Percentage of Research Results Based on Employee Performance Indicators (Y)

No	Statement	Achievement Score	Maximum Score	%	Category
1	Services meet user needs.	212	265	80.00	High
2	Employees respond quickly to complaints.	209	265	78.87	High
3	Work processes are efficient.	196	265	73.96	High

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*Corresponding Author

Email address: mfaisalsidiqga@gmail.com

No	Statement	Achievement Score	Maximum Score	%	Category
4	Employees prioritize tasks effectively.	191	265	72.08	High
5	Work targets are achieved.	203	265	76.60	High
6	Work quality is consistently maintained.	206	265	77.74	High
7	Errors are minimized through procedures.	199	265	75.09	High
8	Errors are corrected quickly.	203	265	76.60	High
9	Work follows quality standards and regulations.	215	265	81.13	High
10	Employees demonstrate discipline and responsibility.	203	265	76.60	High
Average		203.70		76.87	High

Source: Processed data, 2025

Based on Table 12, the highest indicator is compliance with standards and regulations (81.13%), while the lowest score is on work process efficiency (73.96%). Overall, employe performance falls into the High category, indicating that employes have been able to carry out their tasks well according to the organization's demands.

d. Inferential Analysis

Inferential analysis was conducted to examine the influence of Online Attendance Implementation (X_1) and Supervision (X_2) on Employee Performance (Y) at the Transportation Agency of South Lampung Regency, both partially and simultaneously. Data processing was carried out using the Statistical Package for Social Sciences (SPSS) version 26.0 so that the relationships between variables could be empirically explained thru regression, correlation, and the coefficient of determination.

Multiple linear regression analysis is used to determine the extent of changes in employe performance influenced by the implementation of online attendance and supervision. The test results are shown in the table below.

Table 13. Percentage of Research Results Based on Employee Performance Indicators (Y)

Model	Unstandardized Coefficients (B)	Std. Error	Standardized Coefficients (Beta)	t	Sig.
(Constant)	10.438	2.905	—	3.593	.001
Online Attendance Implementation (X_1)	.379	.065	.528	5.843	.000
Supervision (X_2)	.315	.064	.441	4.883	.000

Dependent Variable: performance

Source: Processed data, 2025

Based on the results, the regression equation can be formulated as follows:

$$Y = 10.438 + 0.379X_1 + 0.315X_2 + e$$

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*Corresponding Author

Email address: mfaisalsidiqga@gmail.com

The equation shows that every one-unit increase in the Online Attendance Implementation variable (X_1) will increase Employee Performance (Y) by 0.379, assuming other variables remain constant. Meanwhile, every one-unit increase in the Supervision variable (X_2) will increase Employee Performance (Y) by 0.315. The larger regression coefficient value of variable X_1 compared to X_2 indicates that the implementation of online attendance has a more dominant contribution to the improvement of employee performance.

Next, the Product Moment correlation analysis was conducted to determine the strength of the relationship between each research variable. The test results can be seen in the table below.

Table 14. Correlations

Variables	X_1	X_2	Y
Online Attendance Implementation (X_1)	1	.384**	.644**
Supervision (X_2)	.384**	1	.697**
Employee Performance (Y)	.644**	.697**	1

Correlation is significant at the 0.01 level (2-tailed)

Source: Processed data, 2025

Based on the table, the correlation between Online Attendance Implementation (X_1) and Employee Performance (Y) is 0.644, which falls into the strong relationship category. The value indicates that the better the online attendance system is implemented, the more employee performance tends to improve. The coefficient of determination value obtained is 41.5%, which means that the variation in employee performance can be explained by the implementation of online attendance by 41.5%, while the rest is influenced by other factors outside the research model.

Meanwhile, the relationship between Supervision (X_2) and Employee Performance (Y) is 0.697, which also falls into the strong category. These results indicate that increasingly effective supervision will encourage an improvement in employee performance. The coefficient of determination of 48.6% indicates that the contribution of supervision to the variation in employee performance is greater than the variable of online absenteeism in a partial manner.

To determine the simultaneous effect of the two independent variables on the dependent variable, a model summary analysis is used, as shown in Table 15 below.

Table 15. Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.807	.652	.638	2.261

Predictors: (Constant), Online Attendance Implementation (X_1), Supervision (X_2)

Source: Processed data, 2025

The simultaneous correlation value ($R = 0.807$) indicates a very strong relationship between Online Attendance Implementation (X_1) and Supervision (X_2) collectively on Employee Performance (Y).

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*Corresponding Author

Email address: mfaisalsidiqga@gmail.com

Meanwhile, the R Square value = 0.652 shows that 65.2% of the variation in employe performance can be explained by the two independent variables in this model, while the remaining 34.8% is influenced by other factors not examined.

Overall, the results of the inferential analysis prove that the implementation of an effective online attendance system and good supervision are important factors in improving employe performance at the South Lampung Transportation Agency. The combination of these two variables is capable of making a strong contribution to the organization's work effectiveness.

e. Hypothesis Testing

Hypothesis testing is conducted to determine the significance of the influence of Online Attendance Implementation (X_1) and Supervision (X_2) on Employe Performance (Y), both partially and simultaneously. Partial testing uses the t-test, while simultaneous testing uses the F-test, with a significance level of 5% ($\alpha = 0.05$).

The first hypothesis tests whether Online Attendance Implementation (X_1) has a significant effect on Employe Performance (Y). The test results are presented in the following Table 16.

Table 16. Hypothesis Test of Online Attendance Implementation Effect

Model	Unstandardized Coefficients (B)	Std. Error	Standardized Coefficients (Beta)	t	Sig.
(Constant)	10.438	2.905	—	3.593	.001
Online Attendance Implementation (X_1)	.315	.064	.441	4.883	.000

Dependent Variable: Employee Performance (Y)

Source: Processed data, 2025

Based on the test results, the Online Attendance Implementation variable (X_1) has a t-value of 4.883 with a significance level of 0.000. This value is greater than the t-table value of 2.008, thus H_0 is rejected and the hypothesis is accepted. These findings indicate that the implementation of online attendance has a positive and significant impact on employe performance. The better the online attendance system is implemented, the higher the level of employe performance achieved.

The second hypothesis tests whether Supervision (X_2) has a significant effect on Employe Performance (Y). The test results can be seen in Table 17 below.

Table 17. Hypothesis Test of Supervision Effect on Employee Performance

Model	Unstandardized Coefficients (B)	Std. Error	Standardized Coefficients (Beta)	t	Sig.
(Constant)	20.983	2.808	—	7.472	.000
Supervision (X_2)	.442	.071	.659	6.257	.000

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*Corresponding Author

Email address: mfaisalsidiqga@gmail.com

Dependent Variable: Employee Performance (Y)

Source: Processed data, 2025

The analysis results show that the Supervision variable (X_2) has a t-value of 6.257 with a significance level of 0.000. This value is greater than the t-table value of 2.008, thus H_0 is rejected and the hypothesis is accepted. Thus, supervision has been proven to have a positive and significant effect on employee performance. This means that the more effective the supervision conducted by the leaders, the better the performance achievements of the employees.

The third hypothesis tests the influence of Online Attendance Implementation (X_1) and Supervision (X_2) together on Employee Performance (Y). The test results using the F-test are shown in Table 18 below.

Table 18. Simultaneous Hypothesis Test

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	472.330	2	236.165	41.855	.000
Residual	282.122	50	5.642	—	—
Total	754.453	52	—	—	—

Dependent Variable: Employee Performance

Source: Processed data, 2025

Based on the test results, an F value of 41.855 was obtained with a significance level of 0.000. This value is greater than the F table value of 3.18, so H_0 is rejected and the hypothesis is accepted. This indicates that the implementation of online attendance and simultaneous supervision has a positive and significant impact on employee performance. In other words, the combination of an effective digital attendance system and consistent supervision can optimally enhance employee productivity and work quality.

Overall, all hypotheses in this study were accepted. The results confirm that the improvement in the quality of the online attendance system and the effectiveness of supervision are important factors in driving the performance enhancement of employees at the Transportation Agency of South Lampung Regency.

DISCUSSION

This study shows that the performance of employees at the South Lampung Transportation Agency is significantly influenced by the implementation of online attendance and supervision. Partially, online attendance contributes 41.5% to performance thru improved discipline, recording accuracy, and attendance transparency. These findings are in line with research stating that online attendance systems positively impact employee performance (Jalanan & Encarnacion, 2024; Ussher-Eke et al., 2025). However, the constraints of field data consistency indicate the need for system improvement and data integration.

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*Corresponding Author

Email address: mfaisalsidiqga@gmail.com

Supervision has a greater influence, namely 48.6%, making it a dominant factor in improving performance. Consistent supervision encourages adherence to procedures, work responsibility, and the quality of work results. This finding supports the view that supervision aims to ensure that work proceeds according to plan and correct deviations (Rothwell et al., 2021). However, the evaluation of work results still needs to be made more objective and measurable.

Simultaneously, online attendance and supervision explain 65.1% of the variation in employee performance. This indicates that technology and supervision complement each other, as digitization without control is less effective, while supervision without technology is less efficient. These findings are in line with research that emphasizes that the combination of effective supervision and technology enhances organizational productivity (Monkiewicz & Monkiewicz, 2022).

CONCLUSION AND SUGGESTION

a. Conclusions

This study concludes that the implementation of online attendance and supervision has a positive and significant impact on the performance of employees at the Transportation Agency of South Lampung Regency, both partially and simultaneously. Supervision shows a greater contribution compared to online attendance, while together both variables are able to explain most of the variation in employee performance. These findings affirm that the integration of digitalization of the personnel system and managerial oversight is an important strategy in enhancing the effectiveness of public sector organizations.

b. Suggestion

It is recommended that the agency improve the accuracy and reliability of the online attendance system, strengthen consistent monitoring mechanisms, and implement performance evaluations based on objective and measurable indicators. Subsequent research is recommended to expand the research locations, increase the number of respondents, and include other variables such as work motivation, leadership, organizational culture, or job satisfaction to provide a more comprehensive understanding of the factors affecting employee performance.

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*Corresponding Author

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