



Impact of Online Attendance and Organizational Culture on Employee Performance Through Work Discipline Sidoarjo Secretariat

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Abstract

Purpose: This study analyzes the impact of online attendance implementation and organizational culture on employee performance.

Research Methodology: This study employed a quantitative approach using purposive sampling techniques. A total of 63 samples were collected for the analysis. The analytical technique used in this study is Structural Equation Modeling (SEM), measured with SmartPLS 4.0 software.

Results: The results indicate a significant positive effect of online attendance and organizational culture on employee performance. Additionally, the study found that both online attendance and organizational culture positively influenced work discipline.

Conclusions: The study concluded that online attendance implementation and organizational culture positively and significantly affect employee performance and work discipline. Work discipline also mediates the relationship between these variables and employee performance.

Limitations: This study is limited to civil servants at the Secretariat of Sidoarjo Regency, which may limit the generalizability of the findings to other government offices or regions.

Contributions: The research provides empirical evidence that online attendance implementation and organizational culture positively affect employee performance and work discipline.

Keywords: *Employee Performance, Online Attendance, Organizational Culture, Work Discipline*

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1. Introduction

To realize developmental reform that implements decentralization policies at the district and city levels, new and serious challenges have emerged at the local government level. These challenges include an increase in various forms of public demand, primarily driven by the poor service quality experienced by the public thus far (Anggraini, 2021; Aprillita & Perkasa, 2021). This rise in public demand must be matched by the local government's capacity to fulfill its functions and responsibilities. This study focuses on the development of Human Resources (HR), particularly Civil Servants at the Secretariat of Sidoarjo Regency, due to their critical role as regulators, facilitators, and dynamizers of development. As public employees, the staff at the Sidoarjo Regency Secretariat must carry out their duties with full responsibility and discipline (Agusinta et al., 2021; Agustini, 2019).

Civil Servants play an essential role in delivering excellent services. They are a fundamental compo-

ment of human resources in the state apparatus and significantly influence the success of government administration and development (Keke et al., 2021; Setyawati et al., 2021). Competent Civil Servants exhibit high levels of discipline, good performance, and loyalty to the state. Employee attendance (absenteeism) significantly impacts discipline and performance. An attendance system is implemented in institutions to record the presence of each member of the institution (Abdullah, 2021; Hartono et al., 2024; Jami'Juniawan & Utami, 2020).

The attendance system tracks the identities of the staff and their entry and exit times. It also provides accurate reports to leaders and managers (Gibson, 2018; Satria, 2021). Consequently, most government agencies utilize attendance records to determine employee salaries and assess their punctuality. To enhance employee performance, it is essential to analyze the factors influencing it, particularly focusing on establishing a well-coordinated organizational culture (Meidita, 2019; Solihin, 2021). The success or failure of the Sidoarjo Regency Secretariat can be evaluated through performance measurement, which includes setting performance indicators, collecting performance data, and establishing performance achievements in alignment with the goals and objectives set to realize the vision and mission of Sidoarjo Regency. One aspect of good governance is the implementation of an online attendance system, which allows real-time attendance tracking connected to a central database (Fathonah, 2016; Heriyanto, 2021; Kuncoro & Harahap, 2021).

Numerous factors can influence employee performance, including work discipline, motivation, and leadership. Although some factors have a dominant effect, others may not. Unsatisfactory employee behavior can disrupt performance and may be unacceptable to the organization itself. In such cases, discipline is crucial (Putra et al., 2023). Given the various challenges and cultural backgrounds faced by employees, a leader must be capable of placing staff in positions that align with their education, abilities, and skills rather than relying on personal relationships within the organization. Based on the aforementioned phenomenon, the author is motivated to conduct research entitled: "The Impact of Online Attendance Implementation and Organizational Culture on Employee Performance with Work Discipline as an Intervening Variable in the Secretariat of Sidoarjo Regency."

2. Literature Review

2.1 Online Attendance and Employee Performance

Online attendance systems are increasingly implemented in public and private organizations to monitor employee presence accurately. These systems enable real-time tracking of attendance, which reduces absenteeism and lateness, ensuring employees adhere to work schedules (Kumara et al., 2024). According to Syukriyati et al. (2023), online attendance improves organizational efficiency by providing management with reliable data for performance evaluation and payroll management.

Beyond monitoring, online attendance also fosters a sense of accountability among employees (Putri2025). When employees know that their attendance is being tracked digitally, they are more likely to demonstrate discipline and punctuality, which positively affects their overall performance (Chairunnisah, 2021; Susanto et al., 2021). Fathonah (2016) noted that organizations adopting automated attendance systems observed higher consistency in work output and a reduction in disciplinary incidents.

Furthermore, online attendance interacts with other HR practices, such as performance appraisals and rewards (MuhDliyaul2025; Hartono et al., 2024). By integrating attendance data with performance evaluations, management can identify high-performing employees and reward them appropriately, creating motivation and reinforcing positive work behaviors (Setyawati et al., 2021; Susanto & Parmenas, 2021). This integration has been shown to enhance overall employee performance in public institutions, particularly in government offices where accountability and service delivery are critical (Tukiyat et al.,

2024).

2.2 Organizational Culture and Employee Performance

Organizational culture represents shared values, beliefs, and norms that guide employee behavior within an institution. A strong, positive culture promotes cooperation, trust, and alignment with organizational goals (Kasmir, 2018; Syahrial & Sudono, 2021). According to Asrul et al. (2021), organizational culture significantly affects employee motivation and commitment, which in turn influence performance levels, especially in structured environments like government agencies.

In addition to motivation, culture provides a framework for behavioral expectations (Leony et al., 2024; Wahyuningsih et al., 2021). Employees embedded in a supportive and well-defined organizational culture are more likely to comply with procedures, embrace teamwork, and take ownership of their responsibilities. Noer (2020) emphasizes that culture reinforces both formal and informal norms, shaping how employees respond to managerial policies and operational changes.

Organizational culture also serves as a mechanism for change management and continuous improvement. In public sector organizations, cultivating a culture of performance and accountability helps sustain reforms such as online attendance implementation and encourages proactive problem-solving (Luthans, 2019; Masrurotin et al., 2021; Parmenas, 2021). Research shows that integrating culture-focused initiatives with operational changes results in measurable improvements in employee productivity and service quality (Basalamah et al., 2022; Pakarti et al., 2024).

2.3 Work Discipline as a Mediator

Work discipline is a critical factor in translating organizational policies and culture into observable employee behaviors. High levels of discipline ensure employees follow protocols, meet deadlines, and maintain professional conduct (Ayuningtyas & Ilman, 2021). Berlian Rms and Wahyuningsih (2021) and Tukiyat et al. (2024) highlights that disciplined employees are more likely to perform consistently, making work discipline a key mediator between HR interventions and performance outcomes.

Discipline also reinforces the impact of technological interventions, such as online attendance. Employees who are motivated and committed to rules are more likely to adhere to attendance systems, leading to accurate data collection and fair performance assessment (Ricardianto et al., 2021; Saputro & Soleha, 2021). This relationship demonstrates the mediating role of discipline in strengthening the link between attendance monitoring and employee performance (Hartawan & Isa, 2016; Setyawati & Aristiyanto, 2021).

Moreover, work discipline supports the internalization of organizational culture by translating abstract values into daily behaviors. Employees with strong discipline demonstrate responsibility, accountability, and ethical conduct, which collectively enhance institutional performance (Syukriyati et al., 2023). Leony et al. (2024) concludes that in public organizations, fostering discipline is essential for maximizing the benefits of both cultural initiatives and technological systems, such as online attendance, to achieve higher performance outcomes (Silaen, 2021).

3. Methodology

This study employed a quantitative approach grounded in positivist philosophy to investigate a specific population or sample. Data collection was conducted through research instruments, and the analysis was quantitative in nature, aimed at testing the established hypothesis (Sugiyono, 2017). The research was conducted at the Secretariat of the Sidoarjo Regency. Sampling was conducted using purposive sampling, a method based on specific criteria or particular considerations. A total of 63 samples were used in this study. The analysis technique applied is Structural Equation Modeling (SEM), measured

using SmartPLS 4.0 software.

4. Results and Discussion

4.1 Results

Model analysis using partial least squares (PLS) with the Smart PLS program yielded the following results:

4.1.1 Hypothesis Test

Table 1. Result of SEM Analysis

Variable Relationship	Original Sample (O)	Sample Mean (M)	T Statistics	P Values	Results
Implementation of Online Attendance (X1) → Employee Performance (Y)	1.222	0.054	8.634	0.000	Significant
Organizational Culture (X2) → Employee Performance (Y)	0.112	0.043	6.664	0.022	Significant
Work Discipline (Z) → Employee Performance (Y)	0.042	0.012	6.676	0.044	Significant
Implementation of Online Attendance (X1) → Work Discipline (Z)	0.002	0.553	8.176	0.011	Significant
Organizational Culture (X2) → Work Discipline (Z)	0.211	0.445	6.233	0.038	Significant
Implementation of Online Attendance (X1) → Organizational Culture (X2) → Work Discipline (Z) → Employee Performance (Y)	0.011	0.874	7.723	0.018	Significant

Based on Table 1, the SEM analysis results indicate that all proposed relationships are significant, as shown by the T-statistics values above 1.96 and P-values below 0.05. The implementation of online attendance and organizational culture significantly influence employee performance and work discipline. Furthermore, work discipline also significantly affects employee performance and acts as an intervening variable in the relationship between online attendance implementation, organizational culture, and employee performance.

4.2 Discussion

4.2.1 Impact of Online Attendance Implementation on Employee Performance

The analysis results indicate that the T-statistic value, with a p-value for the effect of online attendance implementation on employee performance in the Sidoarjo Regency Secretariat, is $0.000 < 0.05$. The T-statistic value is $8.634 > 1.96$, with a coefficient of 1.22. This suggests a significant positive effect of online attendance implementation on employee performance within the Sidoarjo Regency Secretariat. This finding aligns with the research conducted by [Hartono et al. \(2024\)](#) and [Syukriyati et al. \(2023\)](#), who also identified a positive and significant impact of online attendance on employee performance.

4.2.2 Impact of Organizational Culture on Employee Performance

The analysis shows that the T-statistic value, with a p-value for the effect of organizational culture on employee performance in the Sidoarjo Regency Secretariat, is $0.022 < 0.05$. The T-statistic value is $6.664 > 1.96$, and the coefficient is 0.112. This indicates a significant positive effect of organizational culture on the performance of employees. This is consistent with the findings of [Asrul et al. \(2021\)](#), who reported a positive and significant influence of organizational culture on employee performance.

4.2.3 Impact of Work Discipline on Employee Performance

The analysis reveals that the T-statistic value, with a p-value for the effect of work discipline on employee performance in the Sidoarjo Regency Secretariat, is $0.033 < 0.05$. The T-statistic is $6.676 > 1.96$, with a coefficient of 0.042. This implies a significant positive effect of work discipline on employee performance. This finding corroborates the research by [Pakarti et al. \(2024\)](#), who found a positive and significant impact of work discipline on employee performance.

4.2.4 Impact of Online Attendance Implementation on Work Discipline

The analysis indicates that the T-statistic value, with a p-value for the effect of online attendance implementation on work discipline in the Sidoarjo Regency Secretariat, is $0.011 < 0.05$. The T-statistic value was $8.176 > 1.96$, and the coefficient was 0.002. This suggests a significant positive effect of online attendance on work discipline. This aligns with [Leony et al. \(2024\)](#), who also reported a positive and significant impact of online attendance on work discipline.

4.2.5 Impact of Organizational Culture on Work Discipline

The analysis shows that the T-statistic value, with a p-value for the effect of organizational culture on work discipline in the Sidoarjo Regency Secretariat, is $0.038 < 0.05$. The T-statistic is $6.233 > 1.96$ with a coefficient of 0.211. This finding indicates a significant positive effect of organizational culture on work discipline. This finding is consistent with the research of [Masrurotin et al. \(2021\)](#), which highlighted the positive and significant influence of organizational culture on work discipline.

4.2.6 Impact of Online Attendance Implementation and Organizational Culture on Employee Performance Through Work Discipline

The analysis reveals that the T-statistic value, with a p-value for the combined effect of online attendance implementation and organizational culture on employee performance through work discipline in the Sidoarjo Regency Secretariat, is $0.018 < 0.05$. The T-statistic value is $7.723 > 1.96$, with a coefficient of 0.011. This suggests a significant positive effect of online attendance and organizational culture on employee performance through work discipline. This aligns with the research conducted by [Tukiyat et al. \(2024\)](#), who found a positive and significant impact of both online attendance and organizational culture on employee performance, mediated by work discipline.

5. Conclusions

Based on the data analysis and discussions, several conclusions can be drawn. First, online attendance implementation and organizational culture significantly and positively impact employee performance. Second, both online attendance implementation and organizational culture positively influenced work discipline. Additionally, online attendance and organizational culture have a significant positive effect on employee performance through work discipline. These findings underscore the critical role that effective attendance systems and a strong organizational culture play in enhancing employee outcomes, suggesting that organizations should prioritize these elements to foster improved performance and discipline among their staff.

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Author Contributions

GAI conceptualized the study, supervised data collection, and drafted the manuscript. S performed data analysis, prepared tables and figures, and contributed to manuscript editing. Both authors reviewed and approved the final manuscript.

Conflicts of Interest

The authors declare that there is no conflict of interest regarding the publication of this study. This research was conducted independently, and no financial or personal relationships influenced the results or interpretation of the findings.

References

- Abdullah, M. A. F. (2021). Analysis of consumer motives in purchasing decisions and the use of instant cooking seasonings. *Jurnal Bisnis, Ekonomi, Manajemen, Dan Kewirausahaan*, 1(1), 27–35. <https://doi.org/10.52909/jbemk.v1i1.24>
- Agusinta, L., Nugroho, A. E., Fachrial, P., & Suryawan, R. F. (2021). Assessment model of employee competence, ground support equipment effectiveness, and satisfaction on service quality. *Jurnal Transportasi, Logistik, dan Aviassi*, 1(1), 55–69. <https://doi.org/10.52909/jtla.v1i1.37>
- Agustini, F. (2019). *Manajemen sumber daya manusia lanjutan*. Madenatera.
- Anggraini, D. (2021). The impact of covid-19 on stock price changes. *Jurnal Bisnis, Ekonomi, Manajemen, Dan Kewirausahaan*, 1(1), 1–18. <https://doi.org/10.52909/jbemk.v1i1.22>
- Aprillita, D., & Perkasa, D. H. (2021). The impact of the covid-19 pandemic on consumer purchasing power in the online retail sectors. *Jurnal Bisnis, Ekonomi, Manajemen, Dan Kewirausahaan*, 1(1), 19–26. <https://doi.org/10.52909/jbemk.v1i1.23>
- Asrul, A., Muhammadiyah, & Mustari, N. (2021). Pengaruh budaya organisasi terhadap kinerja pegawai pada kantor badan perencanaan pembangunan daerah kabupaten kolaka utara. *Kajian Ilmiah Mahasiswa Administrasi Publik (KIMAP)*, 2(6), 2198–2209. <https://doi.org/10.26618/kimap.v2i6.6421>
- Ayuningtyas, B., & Ilman, S. (2021). Ip camera surveillance system using an android application based on arduino. *Jurnal Teknik Dan Informatika*, 1(1), 1–18. <https://doi.org/10.52909/jti.v1i1.6>
- Basalamah, M. R. M., Yantu, I., & Podungge, R. (2022). Pengaruh motivasi kerja terhadap kinerja pegawai pada dinas penanaman modal esdm dan transmigrasi provinsi gorontalo. *JAMBURA: Jurnal Ilmiah Manajemen dan Bisnis*, 5(2), 485–490. <https://doi.org/10.37479/jimb.v5i2.16465>
- Berlian Rms, A., & Wahyuningsih, E. (2021). Analysis of frictional energy generation between train wheels and rails. *Jurnal Teknik Dan Informatika*, 1(1), 46–61. <https://doi.org/10.52909/jti.v1i1.10>
- Chairunnisah, R. K. (2021). *Kinerja karyawan*. Widina Bhakti Persada Bandung.
- Fathonah, A. N. (2016). Pengaruh penerapan good corporate governance terhadap financial distress. *Jurnal Ilmiah Akuntansi*, 1(2), 133–150. <https://doi.org/10.23887/jia.v1i2.9989>
- Gibson. (2018). *Manajemen sumber daya manusia* (4th ed.). Erlangga.
- Hartawan, G. P., & Isa, I. G. T. (2016). Aplikasi absensi perkuliahan dengan menggunakan mikrokontroler arduino berbasis rfid. *SANTIKA (Jurnal Ilmiah Sains dan Teknologi)*, 6(2), 507–512.
- Hartono, T., Henry, B. N., Nurm, S., Pasha, L., & Julianingsih, D. (2024). The importance increasing attendance efficiency accuracy with presence system in era industrial revolution 4.0. *International Journal of Cyber and IT Service Management (IJCITSM)*, 4(2), 133–142. <https://doi.org/10.34306/ijcitsm.v4i2.168>
- Heriyanto, D. (2021). The impact of service quality and compensation on crew satisfaction in manning companies. *Jurnal Transportasi, Logistik, dan Aviassi*, 1(1), 31–41. <https://doi.org/10.52909/jtla.v1i1.35>
- Jami'Juniawan, A., & Utami, E. (2020). Pengaruh pelatihan kerja terhadap kepuasan kerja pada lembaga penyiaran publik televisi republik indonesia stasiun kalimantan timur. *Borneo Studies and Research*, 2(1), 544–551.
- Kasmir. (2018). *Manajemen sumber daya manusia (teori dan praktik)*. PT Rajagrafindo Persada.
- Keke, Y., Tobing, N. G. L., & Tanjung, I. (2021). The effect of occupational safety and health on employee performance at pt. angkasa kargo. *Jurnal Transportasi, Logistik, dan Aviassi*, 1(1), 42–54. <https://doi.org/10.52909/jtla.v1i1.36>
- Kumara, I. N., Nanumura, U., Sanjuka, T., Kolinda, N., & Rupasinghe, L. (2024). Enhancing organizational time efficiency using machine learning for employee activity monitoring. *International*

- Journal of Scientific and Research Publications*, 14(9), 43–49. <https://doi.org/10.29322/IJSRP.14.09.2024.p15309>
- Kuncoro, H., & Harahap, V. (2021). Effect of electronic flight bag usage and safety culture on flight safety performance at pt. garuda indonesia. *Jurnal Transportasi, Logistik, dan Aviasi*, 1(1), 18–30. <https://doi.org/10.52909/jtla.v1i1.34>
- Leony, G., Jumaidi, & Noorrahman, M. F. (2024). Pengaruh penerapan absensi daring (online) terhadap disiplin kerja pegawai di sekretariat daerah kabupaten balangan. *Al Iidara Balad*, 6(1), 57–63. <https://doi.org/10.36658/aliidarabalad.6.1.285>
- Luthans, F. (2019). *Perilaku organisasi*. Andi-Offset.
- Masrurotin, S., Sunaryo, H., & Rizal, M. (2021). Pengaruh pelatihan kerja, komunikasi, dan kepuasan kerja terhadap kinerja karyawan pada pt. kurnia anggun ii mojokerto. *E-JRM: Elektronik Jurnal Riset Manajemen*, 10(09).
- Meidita, A. (2019). Pengaruh pelatihan dan kompetensi terhadap kepuasan kerja melalui motivasi kerja. *Maneggio: Jurnal Ilmiah Magister Manajemen*, 2(2), 226–237. <https://doi.org/10.30596/maneggio.v2i2.3772>
- Noer, R. N. (2020). Pengaruh komitmen kerja terhadap kinerja karyawan billing manajemen di pt. haleyora power ulp sukabumi kota. *Jurnal Ilmiah Ilmu Administrasi Negara*, 7. <https://doi.org/10.25157/dinamika.v7i2.3653>
- Pakarti, S. N., Rully, T., & Respati, M. R. (2024). Pengaruh disiplin kerja terhadap kinerja pegawai pada dinas penanaman modal dan pelayanan terpadu satu pintu (dpmptsp) kota sukabumi. *Jurnal Manajemen Pratama*, 1(2).
- Parmenas, N. H. (2021). Strategies for maintaining employee well-being during the covid-19 pandemic. *Journal of Economics, Management, Entrepreneurship, & Business*, 1(1), 15–31. <https://doi.org/10.52909/jemeb.v1i1.3>
- Putra, B. C., Nitawati, E. Y., & Sari, R. I. P. (2023). Hubungan antara kepuasan kerja terhadap kinerja karyawan yang dimediasi oleh komitmen organisasional. *Procuratio: Jurnal Ilmiah Manajemen*, 11(4), 470–482. <https://doi.org/10.35145/procuratio.v11i4.4057>
- Ricardianto, P., Sakti, R. F. J., Sembiring, H. F. A., & Abidin, Z. (2021). Safety performance analysis of state and commercial ships in accordance with solas 1974. *Journal of Economics, Management, Entrepreneurship, & Business*, 1(1), 1–14. <https://doi.org/10.52909/jemeb.v1i1.2>
- Saputro, A., & Soleha, I. (2021). Analysis of the performance of extraction-condensing turbine unit 1 at bablean power plant. *Jurnal Teknik Dan Informatika*, 1(1), 62–79. <https://doi.org/10.52909/jti.v1i1.11>
- Satria, B. (2021). The effect of transformational leadership and work motivation on employee performance at pt. xyz. *Jurnal Bisnis, Ekonomi, Manajemen, Dan Kewirausahaan*, 1(1), 36–47. <https://doi.org/10.52909/jbemk.v1i1.25>
- Setyawati, A., & Aristiyanto, F. K. (2021). Improving discipline through apron movement control (amc) at pt angkasa pura i adi soemarmo airport. *Jurnal Transportasi, Logistik, dan Aviasi*, 1(1), 1–17. <https://doi.org/10.52909/jtla.v1i1.33>
- Setyawati, A., Huda, M. N., Suripno, S., & Tannady, H. (2021). Analysis of integrated bus terminal services and their impact on customer satisfaction at pulo gebang. *Journal of Economics, Management, Entrepreneurship, & Business*, 1(1), 44–55. <https://doi.org/10.52909/jemeb.v1i1.5>
- Silaen, N. R. (2021). *Kinerja karyawan*. Widina Bhakti Persada Bandung.
- Solihin, A. (2021). The effect of workload, compensation, and career development on employee loyalty at pt. abc. *Jurnal Bisnis, Ekonomi, Manajemen, Dan Kewirausahaan*, 1(1), 48–58. <https://doi.org/10.52909/jbemk.v1i1.26>
- Sugiyono. (2017). *Metode penelitian kuantitatif, kualitatif, dan r&d*. CV. Alfabeta.

- Susanto, P. C., & Parmenas, N. H. (2021). Development of a succession planning model for insurance subsidiaries. *Journal of Economics, Management, Entrepreneurship, & Business*, 1(1), 56–75. <https://doi.org/10.52909/jemeb.v1i1.16>
- Susanto, P. C., Suryawan, R. F., Hartono, H., & Purwoko, B. A. (2021). Analysis of accident-prone areas along the ciawi–puncak road, bogor. *Journal of Economics, Management, Entrepreneurship, & Business*, 1(1), 32–43. <https://doi.org/10.52909/jemeb.v1i1.4>
- Syahrial, E., & Sudono, R. H. (2021). Cooling load analysis of a new building at pmi bogor hospital using the cltd method. *Jurnal Teknik Dan Informatika*, 1(1), 34–45. <https://doi.org/10.52909/jti.v1i1.9>
- Syukriyati, H. N., Zainuddin, Z., & Apriyansyah, A. (2023). Pengaruh penggunaan aplikasi sistem informasi absensi online terhadap kinerja pegawai dinas sosial kabupaten sumbawa barat. *Ganec Swara*, 17(4), 2167–2172. <https://doi.org/10.35327/gara.v17i4.684>
- Tukiyat, I., Saputra, W., Ayuningtyas, A., & Priono, S. (2024). Pengaruh disiplin pegawai dan sarana prasarana terhadap kinerja pegawai melalui penerapan absensi online di kantor kecamatan banjarbaru selatan. *Jurnal Riset Inspirasi Manajemen dan Kewirausahaan*, 8(1), 12–22. <https://doi.org/10.35130/jrimk.v8i1.509>
- Wahyuningsih, E., Widodo, S., & Rahmanto, R. (2021). Prototype manufacture of the arjuno autobost covid-19 robot. *Jurnal Teknik Dan Informatika*, 1(1), 19–33. <https://doi.org/10.52909/jti.v1i1.8>