

Research Article

The Influence of Work Discipline and Physical Work Environment on Employee Performance at CV X, Sidoarjo

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Abstract: The purpose of this study is to analyze the extent to which work discipline and the physical work environment influence employee performance at CV X. The research was conducted using a quantitative approach involving all 45 production employees, with a saturation sampling method to ensure that every member of the population was represented. Data were collected through a structured questionnaire using a five-point Likert scale, while hypothesis testing was carried out using the SEM-PLS method to obtain more accurate estimates of the relationships among variables. The results reveal that both work discipline and the physical workplace contribute significantly to performance improvement. The physical work environment shows a positive and meaningful effect on employee performance, as indicated by a path coefficient of 0.464, a T-statistic of 2.309, and a P-value of 0.002. Similarly, work discipline also demonstrates a constructive influence, supported by a path coefficient of 0.403, a T-statistic of 2.786, and a P-value of 0.006. Based on the R-square value of 0.701, the two variables collectively explain 70.1% of the variance in employee performance. These findings highlight the importance of fostering disciplined work behavior while simultaneously enhancing environmental conditions in the workplace. Improving the physical layout, comfort, and safety, along with reinforcing consistent adherence to organizational rules, can substantially elevate performance outcomes at CV X.

Keywords: Employee Performance; Human Resources Management; Physical Work Environment; Work Discipline; Work Productivity.

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1. Introduction

The rapid progress of industrial development has intensified competition across sectors, pushing organizations to continuously refine the quality of their management practices. One of the most crucial aspects that must be strengthened is human resource (HR) management, as employees represent a central element in determining whether organizational goals can be accomplished effectively (Susanti & Mardika, 2021) (Helmi & Prijati, 2022). High performing employees contribute directly to increased productivity and enhanced organizational competitiveness, while inadequate performance may slow operational activities and hinder business sustainability.

Work discipline is frequently identified as a major contributor to employee performance. It encompasses employees' willingness to comply with organizational regulations, uphold established work procedures, and carry out their assigned duties responsibly (Adipradana, 2021). A consistent body of research indicates that stronger discipline is associated with better performance outcomes (Nuriyah et al., 2022) (Gandesworo et al., 2025) (Estiana et al., 2023). Employees who demonstrate disciplined behavior typically show greater efficiency and higher levels of work productivity.

Another factor that plays a substantial role in shaping performance is the physical work environment. A workspace that supports comfort, safety, and concentration can enhance motivation and minimize the potential for stress arising from job demands (Susanti & Mardika, 2021). Empirical findings also reveal that the physical characteristics of the work environment have a meaningful and significant impact on employee performance (Yulistanty, 2022) (Yanuarso, 2025).

CV X, an automotive component manufacturing company located in Sidoarjo, is facing challenges related to employee performance. Internal data indicate a gap between production targets and actual output over the past three years, from 2022 to 2024. This decline in performance is suspected to be influenced by decreasing employee discipline, as shown by rising numbers of tardiness, absenteeism, and violations of safety regulations. In addition, inadequate physical working conditions such as poor lighting, limited air circulation, and high room temperatures also have the potential to reduce productivity.

Based on this fact, a study was carried out at CV X in Sidoarjo Regency to examine the impact of work discipline and the physical workspace on employee performance. It is anticipated that this study will contribute empirically to the literature on human resource management and offer useful suggestions for the organization in its endeavors to boost employee performance by fortifying work discipline and improving the physical work environment.

2. Preliminaries or Related Work or Literature Review

Work Discipline

Employee attitudes and actions that show adherence to the policies and procedures set forth by the organization are referred to as work discipline. Work discipline, according to Hasibuan in (Adipradana, 2021), is adherence to rules put in place to establish a productive, efficient, and orderly workplace via an appropriate regulatory framework. According to Fathoni in (Nugrahaningsih & Julaela, 2022), work discipline is also described as employees' understanding of and willingness to follow all corporate policies and prevailing social standards. Hasibuan (2016) in (Silalahi et al., 2021) lists the following as indicators of work discipline: (1) attendance at work; (2) adherence to work rules; (3) adherence to work standards; and (4) a high degree of awareness. In the meantime, Hasibuan (2019) lists the following as indications of work discipline: (1) attendance; (2) rule compliance; (3) adherence to work standards; (4) alertness; and (5) efficient use of time (Suryadi & Karyono, 2022).

The Physical Work Environment

The physical work environment refers to the observable conditions surrounding employees as they carry out their tasks, which can shape their level of comfort, safety, and overall productivity. Sedarmayanti, as referenced in (Oktariani et al., 2023), explains that this environment covers a range of physical elements in the workplace that can influence employees either directly or indirectly. In their study, aspects such as lighting quality, temperature conditions, noise intensity, air movement, workplace cleanliness and safety, as well as the organization of the workspace, are used to evaluate the physical work environment. A well-designed and comfortable workspace generally encourages employees to feel more motivated and perform their duties more effectively.

Afandi (2018), as referenced in (Hairudin et al., 2023), also outlines several indicators of the physical work environment, namely: (1) lighting, (2) air temperature, (3) noise, and (4) decoration or workspace layout.

Employee Performance

Employee performance represents the level of achievement demonstrated by an individual in fulfilling the tasks and obligations assigned by the organization. Mangkunegara, as cited in (Nahriyati, 2022), views employee performance as the extent to which a person produces work both in terms of quality and quantity in alignment with the responsibilities that have been given. Similarly, Robbins, as noted in (Suryadi and Karyono, 2022), defines performance as the output an employee generates, measured through the quality and quantity of work completed in accordance with established job standards and expected responsibilities.

Robbins in (Suryadi and Karyono, 2022) identifies several indicators of employee performance, namely: (1) quality, (2) quantity, (3) timeliness, (4) effectiveness, and (5) independence. In comparison, Mathis and Jackson (2006), as cited in (Khaeruman et al., 2024), outline

performance indicators consisting of: (1) quantity, (2) quality, (3) cooperation, (4) timeliness, and (5) independence. Overall, employee performance reflects how effectively and efficiently individuals contribute toward achieving organizational objectives.

Relationships Between Variables

The Influence of Work Discipline on Employee Performance

The connection between work discipline and employee performance has been widely discussed in the human resource management field. Theoretically, work discipline fosters consistency and order in the completion of tasks, which ultimately boosts productivity (Hasibuan, 2016). Employees who demonstrate strong discipline are generally more effective in managing their time, following established procedures, and delivering high-quality work outcomes.

Empirical research also reinforces this positive relationship. (Caraka and Azis, 2024) reported that work discipline significantly and positively influences the performance of production employees at PT Polindo Utama, as indicated by a T-statistic exceeding 1.96. Similarly, (Kartikasari and Irbayuni, 2021) found that both discipline and occupational safety (K3) positively impact the performance of production employees at PT X Sidoarjo. In addition, (Dirman and Setyaningrum, 2023) concluded that work discipline contributes to improved performance, with job satisfaction serving as a mediating variable.

The Effect of the Physical Work Environment on Employee Performance

Ergonomics and industrial psychology theories explain that a conducive physical work environment can enhance comfort, reduce fatigue, and increase work motivation (Sedarmayanti, 2009). Good physical conditions enable employees to work with greater focus and productivity.

Positive effects are consistently demonstrated by empirical research. (Yuliastanty, 2022) discovered a substantial positive coefficient showing how the physical workplace at PT Pos Indonesia Padang affects worker performance. The performance of employees at PT Mandiangin Batubara is significantly impacted by lighting, air temperature, noise, and workstation layout, according to (Oktariani et al., 2023). (Hardyansyah & Kustini, 2023) discovered that while work discipline has a big impact, the work environment's impact differs according to the organizational setting.

3. Research Methods

This research examines the effects of the physical work environment and work discipline on employee performance at CV X using a quantitative methodological approach. The study employs an explanatory design, which enables the assessment of causal interactions between variables based on numerical data. The population comprises all 45 production employees. Since the number of workers is below 100, a saturated sampling method is applied, allowing every individual in the population to serve as part of the research sample.

Questionnaires based on each variable's indications were used to gather primary data, and a 5-point Likert scale was used for measurement. Documents from the company, such as production reports, attendance records, and discipline records, provided secondary data. Employee performance is the dependent variable, work motivation is the moderating variable, and work discipline and the work environment are the independent factors.

The data were examined using the Partial Least Squares Structural Equation Modeling (PLS-SEM) approach through the SmartPLS application. This analytical technique was chosen because it is appropriate for research involving limited sample sizes and models with multiple or complex relationships. In this procedure, the measurement model is first reviewed to ensure that each indicator meets the required standards of validity and reliability. After that, the structural model is assessed to identify the connections among the variables, which are evaluated using R-square values, path coefficients, and hypothesis testing performed via the bootstrapping procedure.

Data Collection Technique

All of CV X's production workers received questionnaires as part of this study's survey procedure. Because of the tiny population size, saturated sampling is the method used, in which every member of the population is included as a respondent. A Likert scale of 1 to 5 was used to score the questionnaire's indications of work discipline, work atmosphere, work motivation, and employee performance. In order to uphold research ethics and guarantee

voluntary participation, the questionnaire was distributed directly along with an explanation of the study's goal.

Data Analysis Technique

The data was assessed using PLS-SEM with SmartPLS. Average Variance Extracted (AVE), cross-loading, outer loading values, and composite reliability values were used in the outer model evaluation to assess validity and reliability. The inner model evaluation involved calculating the R-square value to determine the model's ability to explain the dependent variable, while hypothesis testing was conducted using the bootstrapping approach to ascertain the relevance of path coefficients. This method is appropriate since it supports complex models and performs well even with tiny sample sets.

4. Results and Discussion

Result

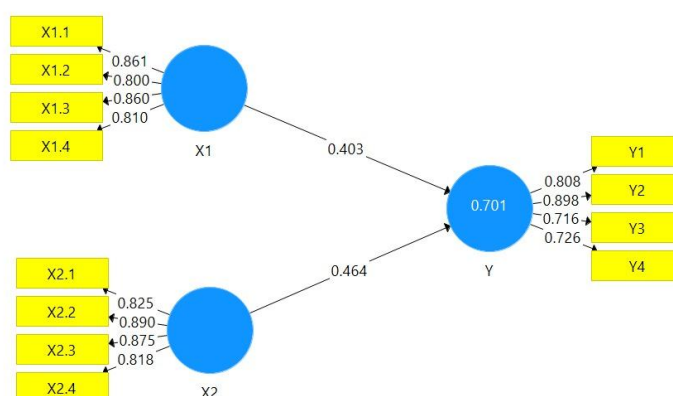


Figure 1. Outer Loading.

Based on the data analysis using SmartPLS, all indicators in this study have outer loading values above 0.7, indicating that they meet the validity criteria. For the work discipline variable (X1), the indicator with the highest loading value is workplace attendance (X1.1) at 0.861, followed by compliance with work standards (X1.3) at 0.860, alertness level (X1.4) at 0.810, and adherence to work regulations (X1.2) at 0.800. These results show that workplace attendance serves as the strongest indicator in representing employee discipline.

For the physical work environment variable (X2), the indicator with the highest loading value is air temperature (X2.2) at 0.890, followed by noise level (X2.3) at 0.875, lighting (X2.1) at 0.825, and workspace layout or decoration (X2.4) at 0.818. This indicates that air temperature is perceived as the most influential aspect in shaping the physical work environment at CV X.

Regarding the employee performance variable (Y), the indicator with the highest loading value is quantity (Y2) at 0.898. Other indicators, namely quality (Y1) at 0.808, effectiveness (Y4) at 0.726, and timeliness (Y3) at 0.716, also meet the validity requirements. This suggests that the quantity of work output is the most critical factor in assessing employee performance.

Furthermore, the cross-loading results reveal that each indicator loads more strongly on its intended construct than on others, confirming that all indicators possess good discriminant validity. The Average Variance Extracted (AVE) values also satisfy the convergent validity criteria, as all constructs have values above 0.5. The work discipline variable has an AVE of 0.694, the physical work environment has 0.726, and employee performance has 0.625. This indicates that more than 50 percent of the variance in the indicators is explained by their respective constructs.

Table 1. Construct Reliability and Validity.

Variables	Cronbach's Alpha	Composite Reliability	AVE	Note
Work Discipline	0.852	0.901	0.694	Valid & Reliable
The Physical Work Environment	0.860	0.914	0.726	Valid & Reliable
Employee Performance	0.796	0.868	0.625	Valid & Reliable

The reliability testing results using composite reliability show that all variables in this study are reliable, as each has a value greater than 0.7. Work discipline has a composite reliability value of 0.901, the physical work environment has 0.914, and employee performance has 0.868. Thus, all variables demonstrate good internal consistency in measuring the constructs under study.

Table 2. R-Square.

Variables	R Square
Employee Performance	0.701

The R-Square (R^2) value for the employee performance variable (Y) is 0.701. This indicates that work discipline (X1) and the physical work environment (X2) collectively account for 70.1% of the variance in employee performance, while the remaining 29.9% is influenced by variables not examined in this study. According to Chin's (1998) classification, this R^2 value falls into the strong or substantial category.

Table 3. Path Coefficients (Mean, STDEV, T-Values).

Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values
0.403	0.413	0.145	2.786	0.006
0.464	0.458	0.150	3.092	0.002

The Influence of Work Discipline (X1) on Employee Performance (Y). The findings show that work discipline has a path coefficient of 0.403, along with a T-statistic of 2.786, which exceeds the critical value of 1.96, and a P-value of 0.006, which is below 0.05. These outcomes indicate that work discipline has a positive and significant effect on employee performance. As a result, the first hypothesis stating that work discipline contributes to employee performance is accepted.

The Influence of the Physical Work Environment (X2) on Employee Performance (Y). The analysis also demonstrates that the physical work environment produces a path coefficient of 0.464, with a T-statistic of 2.309 > 1.96 and a P-value of 0.002 < 0.05. These metrics confirm that the physical work environment significantly and positively affects employee performance. Therefore, the second hypothesis is also validated.

Discussion

The findings of this research show that employee performance improves when work discipline is upheld and when the physical work environment is well-maintained. In other words, stronger adherence to organizational rules combined with better workplace conditions tends to result in employees performing their tasks more effectively.

Work discipline is proven to be an important factor that can enhance employee performance. Employees who arrive on time, comply with company regulations, and carry out their tasks according to established standards tend to produce better performance. This is because work discipline creates order and consistency in performing daily tasks. In the context of CV X, strong work discipline can minimize production delays, reduce work errors, and support the achievement of company targets. However, field conditions still indicate discipline-related issues, such as late arrivals and absenteeism. The findings of this study provide evidence that improving work discipline through rule enforcement, appropriate sanctions and rewards, and consistent supervision will contribute significantly to performance improvement.

These findings align with the research of Yuliastanty (2022) and Caraka & Azis (2024), which both confirm that work discipline has a significant positive effect on employee performance. Therefore, company management needs to prioritize improving employee discipline to strengthen organizational competitiveness.

In addition to discipline, the physical work environment is also proven to have a significant influence on employee performance, even with a stronger effect. An adequate physical work environment such as proper lighting, appropriate room temperature, well organized workspace layout, and controlled noise levels can create comfort and support employee productivity. At CV X, challenges remain in the physical work environment, particularly regarding high temperatures in the production area and suboptimal lighting. Nevertheless, the research findings show that improving the physical work environment will directly enhance employee performance. This is consistent with the studies of Aprilia & Safiih (2025) and Yanuarso (2025), which state that the physical work environment plays an important role in supporting employee motivation and effectiveness.

5. Conclusions

Based on the study's findings, it can be said that enhancing employee performance at CV X is largely dependent on both work discipline and the physical workspace. Because they demonstrate employees' accountability and dedication to their work, higher levels of discipline such as regular attendance, punctuality, and adherence to protocols are strongly linked to improved performance.

The study also demonstrates that performance is greatly impacted by the physical workplace. Employee comfort and concentration are influenced by a number of factors, the most important of which is air temperature. These factors include ventilation, lighting, noise levels, and air temperature. While unfavorable conditions may impede work, a supportive physical environment can boost motivation and lessen weariness.

Overall, work discipline and the physical work environment contribute meaningfully and complement each other in improving employee performance. Therefore, CV X needs to strengthen discipline development and consistently improve workplace facilities to create a productive and supportive work environment.

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