

Modelling the Impact of Occupational Health and Safety, Work Motivation, and Work Discipline on Employee Performance and Achievement Using Structural Equation Modelling

Arif Syaifudin¹ Vera Firdaus[✉] Wisnu Panggah Setiyono³

^{✉,1,3} *Department of Management, Faculty of Business, Law, and Social Sciences, Universitas Muhammadiyah Sidoarjo, Indonesia*

Abstract

This study examines the influence of occupational safety and health, work motivation, and work discipline on employee achievement and performance at PT. Lautan Kayu Abadi Sejahtera. The study employs a quantitative descriptive approach with a cluster sampling technique. The research was conducted at PT. Lautan Kayu Abadi Sejahtera, located on Jl. Raya Sumobito KM. 02, Betek Barat Village, Mojoagung District, Jombang Regency, East Java Province. The respondents consisted of 89 employees from the production department. Data were collected through observation and questionnaire distribution and subsequently analyzed using a quantitative approach. Furthermore, this study employs Structural Equation Modeling (SEM) with AMOS software. The SEM analysis was conducted in two stages: (1) measurement model analysis, which includes goodness-of-fit (GOFI), validity, and reliability tests to ensure model adequacy; and (2) structural model analysis, which comprises overall model feasibility testing, causal relationship analysis, and hypothesis testing.

Keywords: *occupational safety and health, work motivation, work discipline, employee achievement, employee performance.*

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✉ Corresponding author :

Email Address: verafirdaus@umsida.ac.id

INTRODUCTION

Companies can operate with employee support, enabling them to achieve organizational objectives. A company can be considered successful when its human resources are managed optimally, not only by utilizing employees' labor but also by managing them effectively and efficiently. Proper human resource management can have a positive impact on the organization and support the sustainability of company operations, ultimately contributing to the welfare of its human resources. This implies that a company's human resources quality determines the level of performance it can achieve.

A similar condition is found at PT. Lautan Kayu Abadi Sejahtera, a furniture manufacturing company that produces wooden household furniture, all of which is exported to the United States. In carrying out its operations, PT. Lautan Kayu Abadi Sejahtera faces several challenges, one of which is production completion times that

exceed the company's targets. This condition indicates a low level of employee performance and work achievement. This situation can be observed from the employee performance data presented in Table 1.

Table 1. Employee Performance Data

Year	Product Name									
	Staircase Carving Type 4040-30"		Staircase Carving Type 5040-30"		Staircase Carving Type 6040-30"		Staircase Carving Type 7040-30"		Staircase Carving Type 8040-30"	
	Target	Actual	Target	Actual	Target	Actual	Target	Actual	Target	Actual
2020	60 days	65 days	70 days	73 days	80 days	118 days	-	-	-	-
2021	70 days	73 days	65 days	65 days	90 days	93 days	130 days	120 days	45 days	47 days
2022	-	-	60 days	65 days	120 days	127 days	-	-	-	-
2023	-	-	-	-	-	-	65 days	70 days	35 days	40 days

Based on Table 1, it can be observed that employee performance is considered unsatisfactory, as the actual production completion time frequently exceeded the targets set by company management. This condition indicates that the level of employee performance and work achievement at PT. Lautan Kayu Abadi Sejahtera is relatively low. Employee performance is a crucial aspect for any organization. Good employee performance can have a positive impact on the company as a whole, such as improved responsibility fulfillment and timely completion of work targets in accordance with management-determined schedules. Consequently, high employee performance supports the company's success in achieving its organizational objectives. Conversely, poor employee performance may fail to achieve these objectives.

Based on field observations and interviews conducted by the researchers, it is assumed that the decline in employee performance is influenced by several factors, namely occupational safety and health, work motivation, and work discipline. Occupational safety and health is a process that involves the active participation of both the company and employees in identifying and preventing potential risks of workplace accidents and occupational diseases arising from work activities. Through this process, various causes of accidents and work-related illnesses can be identified, followed by the implementation of preventive measures to minimize the likelihood of such incidents.

In addition, work motivation plays a vital role in enhancing employee performance. Without sufficient motivation, employees may struggle to develop their abilities and skills and may be unable to perform optimally. Furthermore, work discipline is a key factor in supporting work achievement. The higher the level of discipline possessed by employees, the greater the likelihood of achieving optimal work performance, which ultimately contributes to the development of high-quality human resources.

Therefore, companies need to pay particular attention to occupational safety and health, work motivation, and work discipline. By focusing on these three aspects, organizations can design policies and work programs that improve the quality of employee output, thereby enhancing employee achievement and performance. This is consistent with previous research findings indicating that improvements in occupational safety and health standards have a positive, significant effect on employee performance.

Along with the ongoing operational activities at PT. Lautan Kayu Abadi Sejahtera inevitably faces various challenges and potential hazards that may affect employee safety and health, particularly with production machinery operated by

untrained workers. Therefore, PT. Lautan Kayu Abadi Sejahtera has implemented occupational safety and health practices in its operations. The company has been committed to properly implementing occupational safety and health measures since the beginning of its operations in early 2020—the total number of workplace accidents at PT. Lautan Kayu Abadi Sejahtera during the period from 2020 to 2023 is presented in Figure 1.

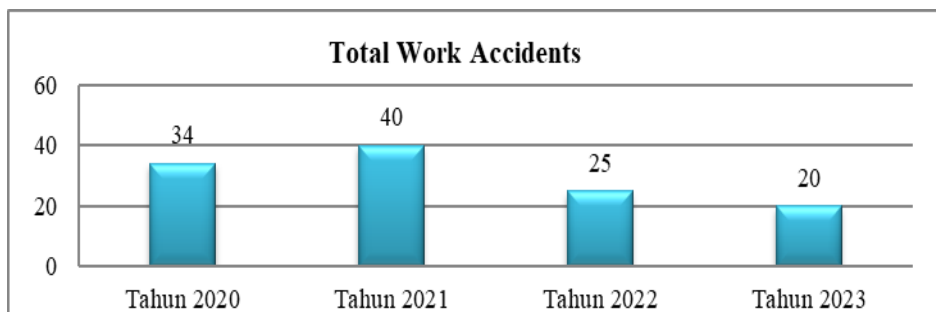


Figure 1. Workplace Accident Report of PT. ABC for the 2020–2023 Period

Source: Processed data (2024)

As shown in Figure 1, 34 workplace accidents were recorded in 2020. The number of workplace accidents increased to 40 incidents in 2021. However, following the comprehensive and effective implementation of occupational safety and health (OSH) practices by the company in 2022, the number of workplace accidents decreased to 25 incidents, and further declined to 20 incidents in 2023. The data indicate a downward trend in workplace accident rates from 2021 to 2023. This decline can be attributed to the gradual implementation of OSH measures by the company, including the provision of personal protective equipment such as masks, gloves, ear muffs, ear plugs, and other safety devices designed to prevent workplace accidents.

The following section presents a classification of workplace accidents that occurred at PT. Lautan Kayu Abadi Sejahtera.

Table 2. Types of Work Accidents

No	Work Accident	Year 2020	Year 2021	Year 2022	Year 2023
1	Light Work Accident	23	27	18	17
2	Moderate Work Accident	8	9	6	3
3	Heavy Work Accident	3	4	1	0

Source: Processed Data (2024)

Table 3. Employee Health Data

No	Type of Disease	Year 2020	Year 2021	Year 2022	Year 2023
1	Headache	15	12	6	4
2	Eye pain	8	8	7	5
3	Fever and chills	6	7	5	4
4	Skin Irritation and itching	4	5	3	-
5	Vomiting and nausea	3	2	1	1

Source: Processed Data (2024)

Based on Table 2, it can be observed that employees at PT. Lautan Kayu Abadi Sejahtera most frequently experienced minor-scale workplace accidents from 2020 to 2023. The occurrence of workplace accidents may be influenced by several factors, such as a lack of concentration during work activities, employees' negligence in

using personal protective equipment, unsafe working environments, and other related factors.

Based on Table 3, it can be observed that employees at PT. Lautan Kayu Abadi Sejahtera most frequently suffered from various health complaints, including muscle cramps, nausea, eye discomfort, fever, and dizziness. Several factors, including dust exposure, excessive sunlight, and other environmental conditions, may cause these health issues. Another phenomenon observed at PT. Lautan Kayu Abadi Sejahtera is the frequent occurrence of workplace accidents, particularly among newly hired employees. These accidents often occur in succession, leading some employees to perceive that forces beyond human control may be contributing to them. This study seeks to examine whether such perceptions are valid. The frequent occurrence of workplace accidents inevitably results in a decline in employee performance.

Based on the above facts, the implementation of occupational safety and health (OSH) practices directly affects employee performance and achievement. Another phenomenon observed at PT. Lautan Kayu Abadi Sejahtera has a relatively low level of employee motivation and discipline. This is evident in the fact that some employees do not perform their duties optimally and often experience delays in completing their assigned tasks. In addition, several employees were found to be less compliant with existing regulations, such as the rule requiring employees to arrive five minutes before working hours. There are still employees who arrive later than the stipulated time, as well as cases of absenteeism without prior notice. Such conditions indicate a lack of discipline in adhering to company regulations. This situation also reflects insufficient employee motivation, which may contribute to low overall motivation.

Good employee discipline enables companies to achieve their objectives more effectively, whereas poor discipline can become a major obstacle in achieving organizational goals. For example, employees who fail to comply with working-hour regulations may delay task completion. Previous research [1] indicates that work discipline significantly influences work achievement, suggesting that disciplined employees tend to achieve higher levels. Therefore, a manager can be considered successful if subordinates exhibit high levels of discipline, as strong discipline facilitates effective communication between managers and employees, helping raise awareness of applicable rules and norms. Furthermore, research by [2] shows that work motivation has a positive and significant effect on employee performance. These findings suggest that high levels of motivation can enhance future employee performance, indicating that work motivation has a positive impact on performance.

Previous studies [3] examined the influence of work discipline, work motivation, and occupational safety and health on employee performance. However, the present study introduces an additional mediating variable, namely work achievement (Z). Moreover, the previous study employed saturated sampling, whereas this study uses cluster sampling. Another study [4] investigated the influence of work discipline, work motivation, and occupational safety and health on employee performance at PT. Surya Pratama Natural Padang identified a research gap: the absence of a work achievement variable as a mediating variable. In addition, there are differences in research focus and sampling techniques: the previous study used saturated sampling, while this study uses cluster sampling.

Furthermore, a prior study [5] examined the influence of work discipline, work motivation, and occupational safety and health on employee performance at

PT. Tirta Investama. In contrast, the present study includes an additional mediating variable, work achievement, and employs a purely quantitative research method, whereas the previous study applied a mixed-methods approach. Additionally, the sampling technique used in the previous study was saturated sampling, while this study applies cluster sampling.

Another previous study [6] analysed the influence of occupational safety and health, motivation, and work discipline on employee performance. It revealed a research gap in the form of the inclusion of work achievement as a mediating variable in the present study. Moreover, the previous study used saturated sampling, whereas this study uses cluster sampling. A study by [7], which examined the influence of work motivation and job satisfaction on employee achievement at the Raba Bima Primary Tax Office, also presents a research gap. The present study includes additional variables such as work discipline, work motivation, and work achievement, while excluding job satisfaction. In addition, the previous study focused on a government institution, whereas this study focuses on a manufacturing industry. Differences are also evident in the sampling techniques: the previous study used purposive sampling, while this study uses cluster sampling.

Based on the phenomena described above, occupational safety and health, work motivation, and work discipline are interrelated elements that support optimal employee performance and work achievement.

Problem Formulation

Do occupational safety and health, work motivation, and work discipline have a positive, significant effect on employee achievement and performance at PT? Lautan Kayu Abadi Sejahtera?

Research Questions

- Does occupational safety and health have a significant effect on employee achievement at PT. Lautan Kayu Abadi Sejahtera?
- Does work motivation have a significant effect on employee achievement at PT. Lautan Kayu Abadi Sejahtera?
- Does work discipline have a significant effect on employee achievement at PT. Lautan Kayu Abadi Sejahtera?
- Does occupational safety and health have a significant effect on employee performance at PT. Lautan Kayu Abadi Sejahtera?
- Does work motivation have a significant effect on employee performance at PT. Lautan Kayu Abadi Sejahtera?
- Does work discipline have a significant effect on employee performance at PT. Lautan Kayu Abadi Sejahtera?
- Does employee achievement have a significant effect on employee performance at PT. Lautan Kayu Abadi Sejahtera?

SDGs Category

This study aligns with the Sustainable Development Goals (SDGs), particularly those aimed at promoting inclusive and sustainable economic growth, productive employment, and decent work for all.

Occupational Safety and Health (X1)

Occupational safety and health (OSH) is a method used to prevent workplace accidents and the spread of diseases resulting from workplace operations [8]. Companies are required to ensure the safety and health of all employees. Occupational health refers to efforts to maintain the physical, mental, and social well-being of all workers by addressing health problems arising from general illnesses, work environments, or job-related activities [9].

Several indicators are used to assess occupational safety and health [10], namely:

- **Health Financing:** The company's responsibility for covering employees' health-related expenses.
- **Health Services:** Periodic medical examinations provided by the company through medical personnel.
- **Equipment:** The availability and completeness of production equipment used to prevent workplace accidents.
- **Procedures:** A sequence of production activities that workers must follow to avoid errors or workplace accidents.
- **Storage Facilities:** The provision of lockers for employees to safely store personal belongings.
- **Job Authority:** The rights and responsibilities assigned to employees in performing their tasks.
- **Negligence:** Carelessness or lack of caution in carrying out production procedures.

Previous studies [9], [5], [6] demonstrate that occupational safety and health have a significant effect on employee performance. In contrast, other studies [11], [12], [13] indicate that occupational safety and health do not significantly affect employee performance. Nevertheless, occupational safety and health play a vital role in improving employee performance in various aspects. A safe and healthy working environment enables employees to feel comfortable and focus more effectively on task completion. When the risks of workplace accidents and health disorders are minimized, employees can work optimally, thereby enhancing overall performance.

Furthermore, prior studies [14], [15], [16] indicate that occupational safety and health influences employee achievement. However, other findings [14], [17] suggest that occupational safety and health do not have a significant impact on employee achievement. Despite these mixed results, effective implementation of OSH programs can foster a sense of safety, comfort, and well-being among employees, which, in turn, increases enthusiasm for work, improves production quality, and enhances output quantity in line with company targets. Consequently, employee achievement tends to improve as employees work under optimal conditions.

Work Motivation (X2)

Motivation is an internal drive that encourages individuals to act to fulfill their needs or expectations. Motivation may arise through interactions among individuals within a particular environment, prompting them to act [2]. Work motivation is defined as an internal drive that stimulates enthusiasm and willingness to act [18]. According to various sources, work motivation refers to the

encouragement organizations provide to employees to improve work quality and direct behavior toward achieving predetermined goals.

The aspects used to measure work motivation, according to [19], include:

- Goal Achievement Drive: A strong drive to achieve optimal performance, which contributes to the attainment of organizational objectives.
- Work Enthusiasm: Enjoyment that motivates individuals to work harder, perform better, and consistently pursue organizational goals.
- Initiative: An employee's ability to initiate and continue tasks energetically without external encouragement.
- Creativity: The ability to develop new combinations or approaches in work, leading to innovation or previously unrecognized solutions.
- Sense of Responsibility: A sense of accountability toward assigned tasks, ensuring timely completion.

Previous studies [20], [2], [5] indicate that work motivation significantly influences employee performance, while other studies [21], [22], [23] report no significant effect. Highly motivated employees tend to be more focused, enthusiastic, and productive in completing tasks. Therefore, work motivation plays a crucial role in enhancing employee performance. Organizations that effectively motivate their employees benefit from increased productivity, improved work quality, and stronger employee loyalty. Thus, effective management of work motivation is a key factor in achieving organizational success.

Moreover, prior findings [24], [25], [26] demonstrate that work motivation significantly affects employee achievement, whereas other studies [7], [27] suggest no significant influence. High work motivation encourages employees to achieve optimal results by working efficiently, maintaining focus, and minimizing distractions, thereby improving work achievement.

Work Discipline (X3)

Work discipline is defined as an attitude of respect and obedience toward applicable rules, both written and unwritten, as well as the fulfillment of duties and the exercise of authority entrusted to employees [28]. Discipline reflects an individual's voluntary awareness and willingness to comply with company regulations and social norms, accompanied by an understanding of assigned responsibilities [1]. Discipline is also regarded as an essential factor and a corrective tool for employees who are unwilling to change inappropriate behaviour [3]. Based on these definitions, work discipline refers to an employee's behaviour in complying with the company's established rules and regulations.

Indicators of work discipline according to [29] include:

- Punctuality: Employees with low discipline tend to arrive late for work.
- Compliance with Work Standards: The level of responsibility employees demonstrate in performing assigned tasks.
- Adherence to Regulations: Employees who comply with working hour regulations consistently follow established procedures.
- Level of Alertness: Employees demonstrate caution, accuracy, and efficiency in carrying out tasks.
- Ethical Conduct: The avoidance of inappropriate behaviour toward customers or involvement in unethical actions.

Previous studies [1], [5], [30] indicate that work discipline significantly influences employee achievement, while other findings [7] suggest no significant effect. Nevertheless, work discipline remains a critical determinant of organizational success. Employees who adhere to discipline tend to focus on achieving the organization's quality and quantity targets. Companies that implement fair and consistent disciplinary policies generally achieve higher employee performance than those with lax disciplinary enforcement.

Work Achievement (Z)

Work achievement refers to the results individuals achieve in fulfilling their responsibilities, based on their abilities, experience, and commitment [31]. High levels of work achievement contribute to the attainment of organizational objectives [24]. Employee achievement represents the outcomes achieved in performing assigned tasks in terms of quantity and quality, following procedures aligned with organizational goals and established standards [1]. In general, work achievement can be defined as employee accomplishments that exceed predetermined targets.

Indicators of employee achievement according to [32] include:

- **Work Results:** The quantity and quality of outputs produced and the extent of supervision required.
- **Job Knowledge:** The level of job-related knowledge influencing work quality and quantity.
- **Initiative:** The degree of initiative shown in performing tasks, particularly in problem-solving.
- **Mental Agility:** The ability and speed in understanding instructions and adapting to work situations.
- **Attitude:** The level of work enthusiasm and positive behavior displayed during task execution.
- **Time Discipline and Attendance:** Punctuality and attendance consistency.

Employee Performance (Y)

Employee performance is a system used to assess whether employees have completed their work comprehensively, encompassing work outcomes (what is achieved) and competencies (how it is achieved) [33]. Another definition describes performance as the results achieved by individuals or groups within an organization in accordance with their authority and responsibilities to achieve organizational goals [34]. Based on these definitions, employee performance is the extent to which employees execute their job duties.

Indicators of employee performance according to [18] include:

- **Quality:** Measured by employees' perceptions of the quality of work produced and task completion relative to skills and abilities.
- **Quantity:** The amount of output produced, expressed in terms of units or completed activity cycles.
- **Timeliness:** The degree to which activities are completed within specified time frames while optimizing available time.

- Effectiveness: The extent to which organizational resources (labor, funds, technology, and raw materials) are utilized efficiently to maximize output per resource unit.

Hypotheses

- H₁:** Occupational Safety and Health has a positive and significant effect on employee work achievement at PT. Lautan Kayu Abadi Sejahtera.
- H₂:** Work Motivation has a positive and significant effect on employee work achievement at PT. Lautan Kayu Abadi Sejahtera.
- H₃:** Work Discipline has a positive and significant effect on employee work achievement at PT. Lautan Kayu Abadi Sejahtera.
- H₄:** Occupational Safety and Health has a positive and significant effect on employee performance at PT. Lautan Kayu Abadi Sejahtera.
- H₅:** Work Motivation has a positive and significant effect on employee performance at PT. Lautan Kayu Abadi Sejahtera.
- H₆:** Work Discipline has a positive and significant effect on employee performance at PT. Lautan Kayu Abadi Sejahtera.
- H₇:** Work Achievement has a positive and significant effect on employee performance at PT. Lautan Kayu Abadi Sejahtera.

METHODOLOGY

This study employed a quantitative research approach. The research was conducted at PT. Lautan Kayu Abadi Sejahtera, located at Jl. Raya Sumobito Km. 2, Betek Barat Hamlet, Betek Village, Mojoagung District, Jombang Regency, East Java Province. PT. Lautan Kayu Abadi Sejahtera was established on December 15, 2019, as per the company's deed of establishment, with Mr. X serving as President Director. The company operates in the furniture industry, producing wooden household furniture that is fully exported to the United States.

The research was conducted over 2 months, from December 2024 to January 2025. The population of this study comprised all employees of PT. Lautan Kayu Abadi Sejahtera, totaling 140 employees. The sampling technique used was cluster sampling, with production department employees selected as respondents, resulting in a sample size of 100 respondents. Data were collected through observation and questionnaires.

This study utilized Structural Equation Modeling (SEM) using AMOS software. The SEM analysis was conducted using a two-stage approach: (1) measurement model analysis, including goodness-of-fit index (GOFI) testing, validity testing, and reliability testing until the model achieved a good fit; and (2) structural model analysis, which included overall model fit testing, causal relationship analysis, and hypothesis testing.

Operational Definitions

Occupational Safety and Health (X1)

- Occupational Safety and Health is operationally defined as efforts to prevent work-related accidents and occupational diseases. The indicators of occupational safety and health [10] include:
Health Financing: Company support for occupational safety and health costs in the form of BPJS Health and BPJS Employment contributions.

- Equipment: Tools and protective equipment used to prevent workplace accidents.
- Procedures: Production workflow that must be followed by employees to avoid errors or workplace accidents.
- Storage Facilities: Facilities provided to store employees' personal belongings to ensure security.
- Work Authority: Rights and responsibilities assigned to employees in carrying out their work.
- Negligence: Employee carelessness in performing work tasks.

Work Motivation (X2)

- Work motivation is operationally defined as the enthusiasm that drives employees to perform their job duties and responsibilities. The indicators used to measure work motivation according to [19] include: Goal Achievement Drive: Employees' strong desire to achieve optimal work targets.
- Work Enthusiasm: Pleasure that encourages employees to work more effectively.
- Initiative: Employees' ability to initiate actions without waiting for instructions from others.
- Creativity: Employees' ability to generate new ideas in completing work tasks.
- Sense of Responsibility: Employees' commitment to completing work in a timely manner.

Work Discipline (X3)

- Work discipline is operationally defined as employees' attitudes and behaviors in complying with and adhering to company regulations. Work discipline is measured using the following indicators [29]: Punctuality: Employees' timeliness in attending work.
- Compliance with Work Standards: Understanding and adherence to established work procedures.
- Compliance with Regulations: Obedience to all company rules and regulations.
- Level of Alertness: Employees' caution and accuracy in performing work.
- Ethical Behavior: Acting politely and ethically without violating company rules.

Work Achievement (Z)

- Work achievement is operationally defined as the results of employee work performance that exceed predetermined targets. The level of work achievement is measured using the following indicators [32]: Work Results: Employee achievements in terms of quantity and quality of work.
- Job Knowledge: Employees' understanding and skills in performing their jobs.
- Mental Agility: Speed in completing work tasks.
- Attitude: Employees' level of enthusiasm while performing their work.
- Time Discipline and Attendance: Employees' ability to comply with work schedules and task completion timelines.

Employee Performance (Y)

- Employee performance is defined as the achievement of work results in accordance with predetermined work targets. The indicators of employee

performance used in this study [18] include:

Quality: The quality of employees' work output.

- Quantity: The amount of work produced by employees.
- Timeliness: Completion of work according to time and maximum standards set by the company.
- Effectiveness: Employees' ability to utilize work facilities efficiently.

RESULTS AND DISCUSSION

Validity and Reliability Test Results

An instrument can be considered valid if its measurement results align with its measurement objectives. Meanwhile, reliability indicates the extent to which a measuring instrument is dependable or consistent.

The summarized results of the validity and reliability tests are presented in Table 4.

Table 4. Validity and Reliability Test Results

Variable	Indicator	Loading Factor (l)	λ^2	$1 - \lambda^2$	CR
X1	X11	0,851	0,724	0,276	0,972
	X12	0,867	0,752	0,248	
	X13	0,897	0,805	0,195	
	X14	0,876	0,767	0,233	
	X15	0,869	0,755	0,245	
	X16	0,853	0,728	0,272	
	X17	0,836	0,699	0,301	
	X18	0,857	0,734	0,266	
	X19	0,885	0,783	0,217	
	X110	0,869	0,755	0,245	
	X111	0,812	0,659	0,341	
	X112	0,857	0,734	0,266	
	Total	10,329		3,104	
X2	X21	0,919	0,845	0,155	0,974
	X22	0,928	0,861	0,139	
	X23	0,948	0,899	0,101	
	X24	0,916	0,839	0,161	
	X25	0,692	0,479	0,521	
	X26	0,919	0,845	0,155	
	X27	0,799	0,638	0,362	
	X28	0,843	0,711	0,289	
	X29	0,964	0,929	0,071	
	X210	0,924	0,854	0,146	
	Total	8,852		2,101	
X3	X31	0,917	0,841	0,159	0,969
	X32	0,877	0,769	0,231	
	X33	0,893	0,797	0,203	
	X34	0,882	0,778	0,222	
	X35	0,878	0,771	0,229	
	X36	0,892	0,796	0,204	
	X37	0,889	0,790	0,210	
	X38	0,914	0,835	0,165	
	Total	7,142		1,622	
Z	Z1	0,882	0,778	0,222	0,985
	Z2	0,928	0,861	0,139	
	Z3	0,922	0,850	0,150	
	Z4	0,936	0,876	0,124	
	Z5	0,877	0,769	0,231	
	Z6	0,934	0,872	0,128	
	Z7	0,973	0,947	0,053	

	Z8	0,940	0,884	0,116	
	Z9	0,971	0,943	0,057	
	Z10	0,930	0,865	0,135	
	Total	9,293		1,355	
Y	Y1	0,854	0,729	0,271	
	Y2	0,888	0,789	0,211	
	Y3	0,863	0,745	0,255	
	Y4	0,880	0,774	0,226	
	Y5	0,848	0,719	0,281	0,963
	Y6	0,839	0,704	0,296	
	Y7	0,919	0,845	0,155	
	Y8	0,899	0,808	0,192	
	Total	6,990		1,887	

Sources: Data processed in 2025

Based on Table 4, each indicator used in the research variables has a loading factor greater than 0.50. This indicates that the indicators employed in this study are appropriate and valid for use as data collection instruments. The test results also show that the Construct Reliability (CR) values for each latent variable exceed the 0.70 cut-off. Therefore, it can be concluded that each latent variable used in this study is reliable.

Structural Equation Modelling (SEM) Assumption Tests

The SEM assumption tests at this stage are conducted to determine whether the prerequisites for SEM modeling have been met. These prerequisites include the assumptions of multivariate normality, the absence of multicollinearity or singularity, and the absence of outliers.

Normality Test

The normality test should be conducted for both univariate and multivariate normality when several variables are used in the final analysis. To examine whether the normality assumption is met, the empirical z-statistics for skewness and kurtosis can be assessed using the Critical Ratio (CR). At a significance level of 5%, data are considered normally distributed if the CR values fall within the range of $-2.58 \leq CR \leq 2.58$, both univariately and multivariately [27].

The results of the normality test, as presented in Appendix 4, show a multivariate CR value of 1.767, which lies within the acceptable range of -2.58 to 2.58 . Therefore, the data are multivariate normally distributed. In addition, univariate normality is indicated by all indicator critical ratios falling within the range $-2.58 \leq CR \leq 2.58$.

Multicollinearity Test

Multicollinearity can be identified by examining the determinant of the covariance matrix; a very small or near-zero value indicates multicollinearity or singularity, rendering the data unsuitable for analysis. The results of the multicollinearity test (Appendix 4) show that the determinant of the sample covariance matrix is 28.266. This value is far above zero, indicating that there are no multicollinearity or singularity issues in the analyzed data.

Outlier Test

Outliers are observations that exhibit extreme values, either univariately or multivariately, arising from unique combinations of characteristics that differ substantially from other observations. When outliers occur, special treatment may be applied provided that their causes are clearly identified. Multivariate outliers are detected by examining Mahalanobis Distance values. The criterion is based on the Chi-square statistic with degrees of freedom equal to the number of indicator variables, with a significance level of $p < 0.01$.

Appendix 4 presents the Mahalanobis d-squared values. Observations with probability values (p_1 and p_2) greater than 73.683 are considered to contain outliers, whereas values smaller than 73.683 indicate the absence of outliers. Based on the test results, the p_1 and p_2 values are less than 73.683, indicating that the data do not contain outliers; in other words, there is no significant difference between individual data points and the overall data group.

Structural Equation Modelling (SEM) Analysis

At this stage, the analysis discusses the model fit assessment and the causality significance test. The results of the analysis using the AMOS program produce the SEM model, as illustrated in the following figure.

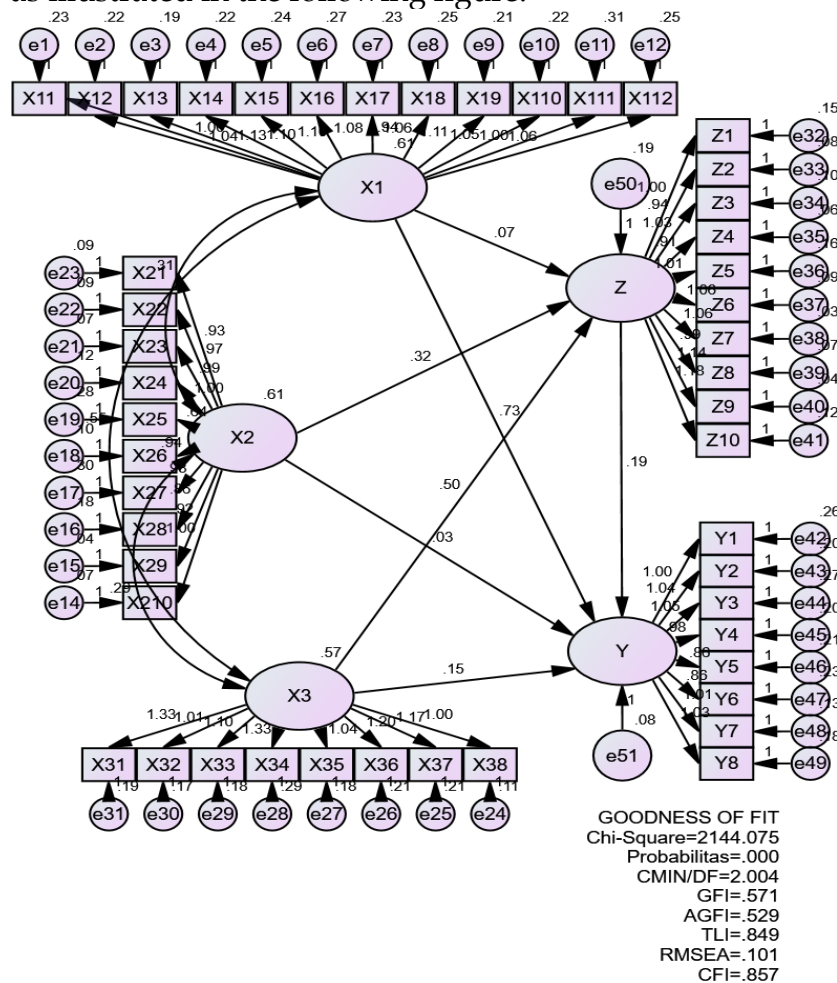


Figure 1. SEM Analysis Results (Initial Model)

Source: Appendix 4

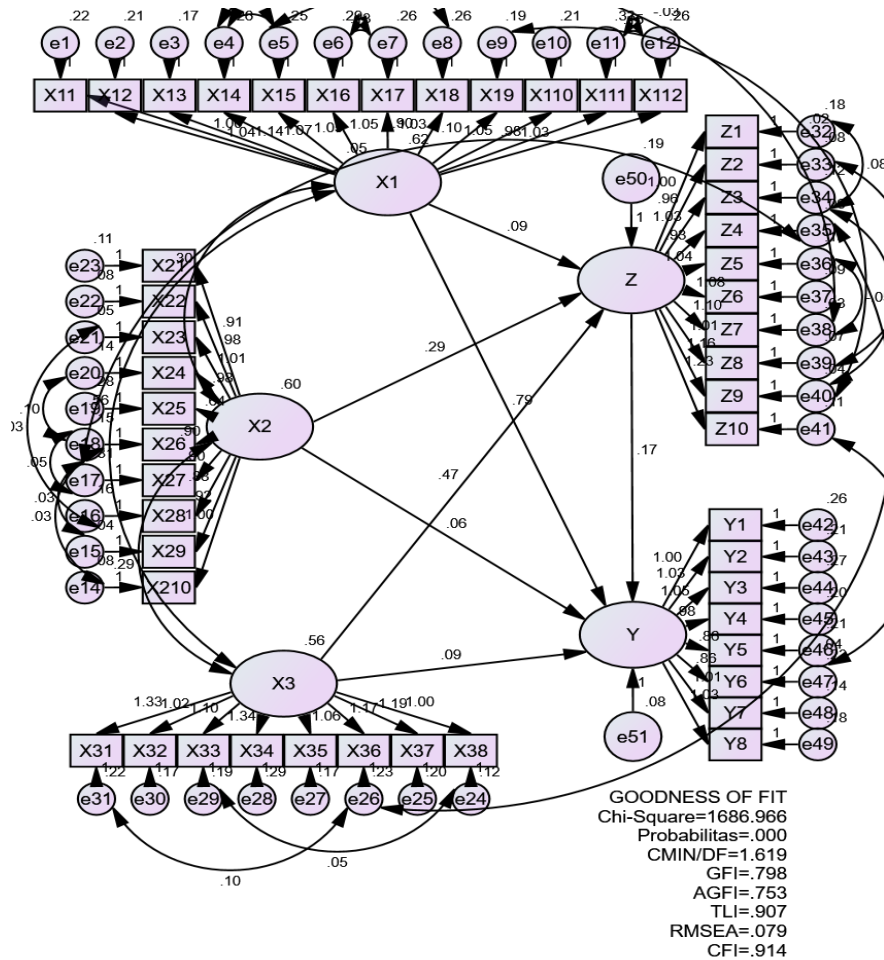


Figure 2. SEM Analysis Results (Saturated Model)

Source: Appendix 5

Model Fit Test (Goodness of Fit Test)

SEM model testing aims to evaluate the model's goodness-of-fit. The results of the model fit assessment in this study are presented in Table 5.

Table 5. SEM Goodness of Fit Indices (Initial Model)

Criteria	Cut Off Value	Test Results	Info
Chi Square	Expected to be less than χ^2 df = 1070, that is 1180,549	2144.075	Poor Fit
Sig. Probability	$\geq 0,05$	0,000	Poor Fit
RMSEA	$\leq 0,08$	0,120	Poor Fit
GFI	$\geq 0,90$	0,571	Poor Fit
AGFI	$\geq 0,90$	0,529	Poor Fit
CMIN/DF	≤ 2 atau 3	2,004	Good Fit
TLI	$\geq 0,95$	0,849	Marginal Fit
CFI	$\geq 0,95$	0,857	Marginal Fit

Source: Appendix 4

Based on Table 5, it can be observed that most of the eight criteria used to assess the model's feasibility have not yet been satisfied. Therefore, the model is considered not to have achieved an adequate fit with the data and requires modification, as indicated by the Modification Indices (MI). The results of the model modification are illustrated in Figure 2, and the model fit assessment results are presented in the following table 6.

Table 6. SEM Goodness of Fit Indices (Saturated Model)

Criteria	Cut Off Value	Test Results	Info
Chi Square	Expected to be less than χ^2 df = 1042, Expected to be less than 1151,132	1686,966	Poor Fit
Sig. Probability	$\geq 0,05$	0,000	Poor Fit
RMSEA	$\leq 0,08$	0,062	Good Fit
GFI	$\geq 0,90$	0,798	Poor Fit
AGFI	$\geq 0,90$	0,753	Poor Fit
CMIN/DF	≤ 2 atau 3	1,619	Good Fit
TLI	$\geq 0,95$	0,907	Good Fit
CFI	$\geq 0,95$	0,914	Good Fit

Source: Appendix 5

Based on Table 6, the model meets most goodness-of-fit criteria and is therefore acceptable. This conclusion refers to the opinion of [35], which states that according to the parsimony rule, if most of the model fit criteria are met, the model can be considered fit. Consequently, the proposed modified model is a good fit.

Direct Effect Test

At this stage, the testing aims to examine causal relationships in order to interpret each path coefficient. The detailed results of the path coefficient testing are presented in Table 7.

Table 7. Results of the Direct Effect Test

	Estimate	S.E.	C.R.	P	Info
X1 → Z	0,093	0,212	0,440	0,660	H1 rejected
X2 → Z	0,288	0,071	4,038	0,000	H2 accepted
X3 → Z	0,473	0,226	2,095	0,036	H3 accepted
X1 → Y	0,787	0,174	4,513	0,000	H4 accepted
X2 → Y	0,062	0,057	1,095	0,273	H5 rejected
X3 → Y	0,086	0,175	0,492	0,622	H6 rejected
Z → Y	0,168	0,074	2,073	0,038	H7 accepted

Source: Appendix 5

Based on Table 7, it can be stated that the results of the path coefficient test for the effect of occupational safety and health (X1) on job performance (Z) show a positive path coefficient of 0.093, with a Critical Ratio (C.R.) of 0.440 and a probability (p-value) of 0.660. Since the C.R. value is smaller than 1.980 and the p-value is greater than 0.05, H1 is rejected. This indicates that occupational safety and health has a positive but not significant effect on job performance. Therefore, the hypothesis stating that occupational safety and health has a positive and significant effect on job performance at PT. Lautan Kayu Abadi Sejahtera is not supported, and H1 is rejected.

The results of the path coefficient test for the effect of work motivation (X2) on job performance (Z) show a positive path coefficient of 0.288, with a C.R. value of 4.307 and a p-value of 0.000. Since the C.R. value is greater than 1.980 and the p-value is smaller than 0.05, H2 is accepted. This indicates that work motivation has a positive and significant effect on job performance. Thus, the hypothesis stating that work motivation has a positive and significant effect on job performance at PT. Lautan Kayu Abadi Sejahtera is supported, and H2 is accepted.

The results of the path coefficient test for the effect of work discipline (X3) on job performance (Z) show a positive path coefficient of 0.011, with a C.R. value of 2.095 and a p-value of 0.036. Since the C.R. value is greater than 1.980 and the p-value is smaller than 0.05, H3 is accepted. This indicates that work discipline has a positive and significant effect on job performance. Therefore, the hypothesis stating that work discipline has a positive and significant effect on job performance at PT. Lautan Kayu Abadi Sejahtera is supported, and H3 is accepted.

Furthermore, the results of the path coefficient test for the effect of occupational safety and health (X1) on employee performance (Y) show a positive path coefficient of 0.787, with a C.R. value of 4.513 and a p-value of 0.000. Since the C.R. value is greater than 1.980 and the p-value is smaller than 0.05, H4 is accepted. This indicates that occupational safety and health has a positive and significant effect on employee performance. Thus, the hypothesis stating that occupational safety and health has a positive and significant effect on employee performance at PT. Lautan Kayu Abadi Sejahtera is supported, and H4 is accepted.

The results of the path coefficient test for the effect of work motivation (X2) on employee performance (Y) show a positive path coefficient of 0.062, with a C.R. value of 1.095 and a p-value of 0.273. Since the C.R. value is smaller than 1.980 and the p-value is greater than 0.05, H5 is rejected. This indicates that work motivation has a positive but not significant effect on employee performance. Therefore, the hypothesis stating that work motivation has a positive and significant effect on employee performance at PT. Lautan Kayu Abadi Sejahtera is not supported, and H5 is rejected.

The results of the path coefficient test for the effect of work discipline (X3) on employee performance (Y) show a positive path coefficient of 0.086, with a C.R. value of 0.492 and a p-value of 0.622. Since the C.R. value is smaller than 1.980 and the p-value is greater than 0.05, H6 is rejected. This indicates that work discipline has a positive but not significant effect on employee performance. Therefore, the hypothesis stating that work discipline has a positive and significant effect on employee performance at PT. Lautan Kayu Abadi Sejahtera is not supported, and H6 is rejected.

Finally, the results of the path coefficient test for the effect of job performance (Z) on employee performance (Y) show a positive path coefficient of 0.168, with a C.R. value of 2.073 and a p-value of 0.038. Since the C.R. value is greater than 1.980 and the p-value is smaller than 0.05, H7 is accepted. This indicates that job performance has a positive and significant effect on employee performance. Therefore, the hypothesis stating that job performance has a positive and significant effect on employee performance at PT. Lautan Kayu Abadi Sejahtera is supported, and H7 is accepted.

Indirect Effect Testing Using the Sobel Test

The Sobel Test is conducted to address the research problem regarding the indirect effects of exogenous variables on the endogenous variable (Y) through the intervening endogenous variable (Z). The results of the calculations for each variable are presented as follows.

Table 8. Results of the Indirect Effect Test

	Estimate	S.E.	C.R.	P	Info
X1 → Z → Y	0,016	0,036	0,431	0,667	H8 rejected
X2 → Z → Y	0,048	0,024	1,981	0,048	H9 accepted
X3 → Z → Y	0,079	0,052	1,539	0,124	H10 rejected

Source: Appendix 5

The results of the Sobel Test for the effect of occupational safety and health on employee performance through job performance show a calculated t-value of 0.431 and a p-value of 0.667. Since the p-value is greater than the significance level of $\alpha = 5\%$, it can be concluded that, statistically, job performance does not act as an intervening variable in the relationship between occupational safety and health and employee performance. Therefore, the hypothesis that occupational safety and health have a positive and significant effect on employee performance, with job performance as a mediating variable, is not supported (H8 rejected).

The Sobel Test results for the effect of work motivation on employee performance through job performance yield a calculated t-value of 1.981 and a p-value of 0.045. Since the p-value is smaller than $\alpha = 5\%$, it can be concluded that job performance acts as an intervening variable in the relationship between work motivation and employee performance. Thus, the hypothesis that work motivation has a positive and significant effect on employee performance, with job performance as a mediating variable, is supported (H9 accepted).

Furthermore, the Sobel Test results for the effect of work discipline on employee performance through job performance show a calculated t-value of 1.539 and a p-value of 0.124. As the p-value exceeds $\alpha = 5\%$, job performance is not an intervening variable in this relationship. Consequently, the hypothesis that work discipline has a positive and significant effect on employee performance, with job performance as a mediating variable, is not supported (H10 rejected).

Discussion

Effect of Occupational Safety and Health on Job Performance

The analysis shows that occupational safety and health have a positive but not significant effect on job performance. This finding indicates that management efforts to prevent workplace accidents and occupational diseases do not directly influence employees' achievement of performance targets beyond expected levels. Employees at PT. Lautan Kayu Abadi Sejahtera tends to view occupational safety and health not as a means to enhance performance, but rather as an inherent part of productive work. In addition, safety procedures are sometimes perceived as slowing down work rhythms. The use of personal protective equipment (PPE), discomfort in its application, and bureaucratic risk-reporting procedures are often considered obstacles to task completion speed, resulting in suboptimal performance in terms of output quantity. These findings are inconsistent with [10], [15], and [16], but align with [14] and [17]. Occupational safety and health in this study are measured through indicators such as health financing, health services, equipment, procedures, storage facilities, job authority, negligence prevention, and safety contribution. The procedure indicator shows the strongest contribution, supported by the majority of respondents who strongly agree that they understand their employment rights in the

event of workplace accidents. This is likely influenced by the fact that most employees have worked for more than five years.

Effect of Work Motivation on Job Performance

The results indicate that work motivation has a positive and significant effect on job performance. This confirms that higher employee enthusiasm in fulfilling tasks and responsibilities leads to improved achievement of work targets beyond those set by the company. This condition may be attributed to daily morning briefings regarding work targets and the provision of monthly bonuses for employees who exceed performance targets. These findings are consistent with previous studies [24], [25], [26], and [27], which all conclude that work motivation significantly affects job performance. Work motivation is measured using indicators such as goal achievement drive, work enthusiasm, initiative, creativity, and sense of responsibility. Among these indicators, goal achievement drive contributes the most, as most employees strongly agree that they have a strong desire to achieve company targets. This may be influenced by the average employee age being over 40 years and tenure exceeding five years.

Effect of Work Discipline on Job Performance

The analysis shows that work discipline has a positive and significant effect on job performance. This suggests that higher levels of employee compliance with company regulations lead to improved achievement of work targets beyond expectations. This effect may be attributed to periodic training that emphasizes discipline and the clear enforcement of sanctions for rule violations. These results are consistent with previous studies [1], [7], and [30], which conclude that work discipline significantly affects job performance. Work discipline is measured through punctuality, adherence to work standards, compliance with regulations, vigilance, and ethical behavior. The strongest contributing indicator is adherence to work standards, supported by employees' strong agreement that they promptly understand procedural changes. This may be influenced by the majority of employees having a senior high school educational background.

Effect of Occupational Safety and Health on Employee Performance

The findings indicate that occupational safety and health have a positive and significant effect on employee performance. This suggests that increased efforts to prevent workplace accidents and occupational diseases improve employee work outcomes and target achievement. This result is likely due to both management and employees recognizing the importance of safety, as reflected in the installation of safety signage and the provision of safety facilities. These findings are consistent with studies [3], [4], [5], and [6], which state that occupational safety and health significantly influence employee performance. Among the indicators, safety procedures contribute the most, supported by employees' understanding of their rights in workplace accident situations. This is likely influenced by employees' long tenure and predominantly senior high school education.

Effect of Work Motivation on Employee Performance

The analysis shows that work motivation has a positive but not significant effect on employee performance. This indicates that employee enthusiasm alone does not necessarily translate into successful job execution. This may be due to several

factors: (1) extrinsic motivation, such as facilities or working conditions, may be insufficient if intrinsic motivation, such as self-development, is lacking; (2) limited appreciation or bonuses may weaken motivation; and (3) motivational incentives provided may not align with employees' actual needs, such as career development. These findings are inconsistent with previous studies [2], [3], [4], [5], [6], [18], [19], [20], and [21], which report a significant effect of work motivation on employee performance. However, goal achievement drive remains the most dominant indicator, influenced by employee age and long tenure.

Effect of Work Discipline on Employee Performance

The results indicate that work discipline has a positive but not significant effect on employee performance. This suggests that compliance with company rules does not necessarily guarantee performance success. Possible explanations include employees not perceiving a direct link between procedural compliance and performance targets, inconsistent supervision, selective rule enforcement, and an unsupportive organizational culture. These findings differ from studies [3], [4], [5], and [6], which found a significant relationship between work discipline and employee performance. Adherence to work standards remains the strongest contributing indicator, influenced by employees' educational background.

Effect of Job Performance on Employee Performance

The analysis shows that job performance has a positive and significant effect on employee performance. Higher achievement beyond performance targets enhances employees' career success, supported by company policies that promote employees who exceed targets for 3 consecutive years. This finding aligns with the study [18]. Job performance is measured through work results, job knowledge, mental agility, attitude, and time discipline. The most influential indicator is job knowledge, as employees agree they can adapt to technological developments and new systems, supported by their long tenure and adequate educational backgrounds.

CONCLUSION

Based on the discussion, it can be concluded that to enhance job performance, PT. Lautan Kayu Abadi Sejahtera should focus on work motivation and work discipline. Meanwhile, to improve employee performance, the company should prioritize occupational safety and health, as well as job performance. These aspects represent effective strategic efforts to optimize job performance and improve overall employee performance.

This study has limitations, particularly in not fully linking occupational safety and health with broader performance outcomes. Therefore, future research is recommended to examine further the effects of occupational safety and health on employee performance using expanded performance indicators.

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