

The Influence of Work Environment on Work Productivity Through Work Discipline as an Intervening Variable on Production Employees of PT BSU Batang Hari

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ARTICLE INFO

Keywords: Work Productivity, Work Environment, Work Discipline

Received : 06, December

Revised : 23, December

Accepted: 29, January

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ABSTRACT

This research aims to analyze the influence of the work environment on work productivity through work discipline as an intervening variable in the production employees of PT Berkas Sawit Utama (BSU) Batang Hari. The method used is quantitative analysis with a sample of 94 respondents selected using a simple random sampling technique from a total population of 122 employees. Data was collected through a Likert scale-based questionnaire, and analysis was carried out using Structural Equation Modeling (SEM) techniques based on Partial Least Square (PLS) via SmartPLS 4 software. The results of the research show that: (1) the work environment has a positive and significant effect on work productivity, (2) the work environment has a positive and significant effect on work discipline, (3) work discipline has a positive and significant effect on work productivity, and (4) work discipline is able to mediate the influence of the work environment on work productivity.

INTRODUCTION

Human Resource Management (HRM) encompasses a comprehensive process that involves planning, organizing, directing, and supervising various aspects of employment. This includes the procurement, development, compensation, integration, maintenance, and eventual termination of employees, all aimed at achieving the organization's goals. HRM aims to ensure the effectiveness of human resource management so that it can provide optimal contribution to the achievement of organizational goals Schuler et al. in Sutrisno (2017:8) The organization functions as a tool to achieve various goals through key elements, such as individuals with certain roles, an organized work relationship structure, and division of tasks based on their respective expertise. Collaboration and synergy between these elements are important to achieve organizational efficiency and effectiveness. One of the key elements in an organization is human resource management (HRM), which plays a role in increasing employee work productivity. Effective strategic planning in HRM ensures that the workforce works optimally to support the achievement of organizational goals. (Dahlia Ayu Sulistiani et al., 2024).

Employee productivity is a crucial factor in supporting the success of a company. Productivity is defined as a comparison between the results achieved (output) and the resources used (input) (Darmawan, 2023). High productivity is a measure of an organization's success in achieving its targets. According to Sutrisno, (2017), factors that influence productivity include education, skills, work discipline, attitude and ethics, motivation, nutrition and health, income level, social security, work environment, work climate, technology, means of production, and performance management. Work productivity includes aspects of ability, increased results, work spirit, self-development, quality and efficiency (Sutrisno, 2017:104).

The work environment factor is also one of the main drivers of productivity. A comfortable and conducive work environment can provide a sense of security, motivate employees, and increase productivity. (Zuhriyah, 2019). The work environment includes physical aspects (workplace building, work equipment, work facilities, transportation facilities) and non-physical (relationships between colleagues at the same level, relationships between superiors and employees, cooperation between employees) (Siagian 2014:61). Previous research shows a positive and significant relationship between the work environment and employee productivity. (Mahargiono, 2023; Syahputra et al., 2022; Fau & Buulolo, 2023). However, different results were found in the study. (Revaldo et al., 2024), which states that the work environment has no influence on productivity at PDAM Tirta Bara, Banjarnegara Regency.

Apart from the work environment, work discipline also plays an important role in influencing employee productivity. According to Sutrisno (2017:89) explains that discipline is individual behavior that is in line with applicable work regulations and procedures. Discipline includes aspects of obedience to time regulations, obedience to company rules, obedience to rules of behavior at work and obedience to other rules. Sutrisno (2017:94). Research by Darmawan, (2023) shows that disciplined employees are more likely to have

higher output. Work discipline can also mediate the influence of the work environment on productivity, as stated by(Wardhana, 2023).

PT Berkas Sawit Utama (BSU), a company engaged in the palm oil plantation and palm oil processing sector, relies heavily on employee productivity, especially in the production sector. However, data shows that the productivity of production employees at PT BSU has not reached the expected target.

Table 1. Achievement of CPO Production Target of PT BSU Production Division (2021-2023)

Year	Number of employees	CPO Production Target (Kg/Year)	CPO Production Realization (Kg/Year)	Productivity per Employee (Kg/Year)	Percentage of Target Achievement (%)
2021	145	71,465,177	63,073,024	434,986	88.25
2022	145	73,596,654	67,986,324	468,871	92.37
2023	143	73,074,617	61,869,549	432,654	84.66

Source: Data processed by researchers 2024

Based on Table 1.1 during the period 2021-2023, the productivity level showed fluctuations. In 2023, employee productivity reached its lowest point, which was 84.66%, even though the company had made various efforts to improve the work environment. An initial survey of 10 production employees revealed that 15.7% of respondents felt that the work environment, both physical and non-physical, was not optimal. In addition to the work environment, work discipline also plays an important role in influencing employee productivity.

Table 2. Data on Employee Absences in the Production Division of PT BSU (2021-2023)

Year	Number of employees	Number of Working Days (Days)	Total Employee Working Days (Days)	Absent Day	Absenteeism Rate (%)
2021	145	288	41,760	379	0.90
2022	145	288	41,760	352	0.84
2023	143	288	41,184	392	0.95

Source: Data processed by researchers 2024

Based on Table 1.2, the increasing level of employee absenteeism in 2023 is one of the indicators of low work discipline. This shows that improving the work environment alone is not enough to encourage increased productivity without being accompanied by increased work discipline.

Prior research has separately examined how both the work environment and work discipline impact productivity.(Mahargiono, 2023; Santi & Prasetya, 2024). However, research examining the mediating role of work discipline in the relationship between work environment and productivity in the palm oil plantation sector, especially in PT BSU (Berkas Sawit Utama), is still limited. Given the unique characteristics of this sector, such as remote work locations and challenging physical conditions.

Therefore, this study aims to provide an overview of the work environment, work productivity, and work discipline of production employees of PT Berkas Sawit Utama (BSU) in Batang Hari. In addition, this study also aims to analyze the influence of the work environment on work productivity, both directly and through work discipline as an intervening variable. Furthermore, this study explores the influence of the work environment on work discipline and the influence of work discipline on employee productivity. With this approach, the study is expected to provide in-depth insight into the dynamics between the work environment, work discipline, and employee productivity in the palm oil plantation sector.

LITERATURE REVIEW

Human Resource Management

Human Resource Management (HRM) is a process that includes planning, organizing, directing, and supervising the procurement, development, compensation, integration, maintenance, and termination of employment to achieve organizational goals (Sutrisno, 2017:7), HRM aims to ensure the effectiveness of human resource management so that it can provide optimal contribution to achieving organizational goals Schuler et al. in Sutrisno (2017:8) stated that HRM has three main objectives, namely increasing the level of work productivity, improving the quality of work life, and ensuring that the organization complies with legal aspects in employee management. In addition, the function of HRM according to Sutrisno (2017:9) includes planning, organizing, directing, controlling, developing, compensation, integration, maintenance, discipline, and termination. In the context of this study, HRM becomes the theoretical basis for understanding how a conducive work environment and employee discipline can interact in increasing work productivity.

Work Productivity

Employee work productivity is a key element in a company's success, because increased productivity has a direct impact on achieving targets and increasing company profits.(Zahra, 2024). Productivity, according to The Greatest Showman (2017), is a measure of production efficiency that describes the comparison between output and input, where input generally refers to labor, while output is measured in physical units of economic value. Sedarmayanti (2017:341) added that productivity is a comparison between the results achieved with employee participation in a certain time unit, namely the number of goods or services that can be produced in a certain period. Furthermore, Darmawan (2023) explains that productivity is the ratio between output and total input used, involving a mental attitude to encourage employees to improve their performance continuously. Work productivity indicators according to Sutrisno, (2017), consisting of ability, increased results, work enthusiasm, self-development, quality and efficiency.

Work environment

The work environment in a company is not directly involved in the production process, but has a significant influence on employee performance in carrying out their duties. The work environment includes physical conditions such as work areas, equipment, facilities, lighting, and cleanliness, as well as non-physical aspects such as work atmosphere and relationships between individuals.(Ali & Septayudha, 2022). A conducive environment can create a sense of security and comfort for employees, motivating them to work more productively and efficiently.(Khaeruman et al., 2021).

Apart from thatThe Greatest Showman (2023)adding that a comfortable working environment also has an impact on employee attitudes and emotions, which encourages them to stay at home and optimize working time.Grace (2019)reinforces that a conducive work environment provides a sense of security and comfort, thereby improving performance and motivating employees to work better. Based on various views, an effective work environment includes not only adequate physical facilities, but also a work atmosphere that supports emotional comfort and interpersonal relationships, which overall contribute to increasing employee work productivity. Work environment indicators according to Siagian, (2013) consist of 2 dimensions, namely the physical work environment and the non-physical work environment.

Work discipline

Work discipline includes compliance with existing norms, both written and unwritten regulations. Discipline reflects individual behavior that is in line with work regulations and procedures, so that employees are able to carry out tasks according to established standards.(Sutrisno, 2017).Sinambela (2016:334)adding that discipline is obedience to organizational rules and instructions, which plays an important role in ensuring the effective implementation of tasks and responsibilities to achieve organizational goals.

DemandA. Mulawangsa M. (2019)emphasizes that work discipline is one of the main factors in increasing employee productivity, because discipline creates a consistent, responsible and obedient attitude towards organizational provisions, which ultimately contributes to optimizing work productivity. Work discipline indicators according toThe Greatest Showman (2017)consists of compliance with time rules, compliance with company rules, compliance with work behavior rules, and compliance with other rules.

H1: It is suspected that there is an influencepositive and significant impact of work environment (X) on employee work productivity (Y)

H2: It is suspected that there is an influencepositive and significant work environment (X) on work discipline (Z).

H3: It is suspected that there is an influencepositive and significant work discipline (Z) on employee work productivity (Y).

H4: AllegedlyThere is a positive and significant influence of the work environment (X) on employee work productivity (Y) through work discipline (Z) as an intervening variable.

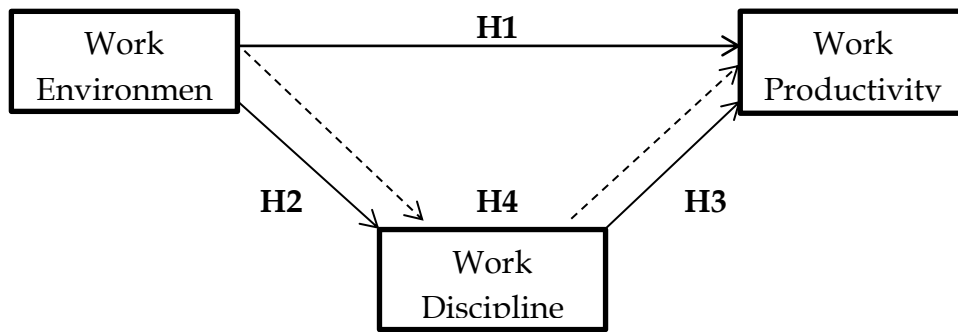


Figure 1. Thinking Framework Diagram

METHODOLOGY

This study employs a descriptive quantitative approach to examine how the work environment influences employee productivity, with work discipline serving as an intervening variable. This positivist philosophy-based approach emphasizes hypothesis testing through empirical data analysis using statistical methods and processed with the SmartPLS 4.0 application. The location of the study was PT Berkas Sawit Utama (BSU) in Bungku, Bajubang District, Batang Hari Regency, Jambi, with a population of 122 production employees. The sample was drawn using simple random sampling, guided by the Slovin formula and allowing for a 5% margin of error, which resulted in a total of 94 respondents.

The Partial Least Square (PLS) method used in this study is a variant-based Structural Equation Modeling (SEM) approach that allows simultaneous testing between the measurement model and the structural model. Testing the measurement model (outer model) includes validity tests, such as convergent validity and discriminant validity, as well as reliability tests through Composite Reliability and Cronbach's Alpha to ensure the quality of the instrument. The structural model, also known as the inner model, assesses the relationships between latent variables by conducting multicollinearity test, (VIF ≤ 5), R-Square values for predictive power, F-Square to measure the effects between variables, and hypothesis testing using bootstrapping with t-statistics values > 1.96 and p-values < 0.05. This approach ensures reliability and accuracy in explaining the causal relationship between variables in the study.

RESEARCH RESULT

Respondent Characteristics

Table 3. Respondent Characteristics

Characteristics		Amount	Percentage
Gender	Man	94	100%
	Woman	-	-0
Total		94	100%
Age Range	< 20 Years	-	-
	20-29 Years	3	3.2%
	30-39 Years	45	47.8%
	40-49 Years	46	49%

	>50 Years	-	-
Total		94	100%
	Junior High School	-	-
	High School	94	100%
Last education	D1/D2D3	-	-
	S1	-	-
	S2	-	-
Total		94	100%
	<1 Year	-	-
	1-3 Years	1	1.1%
Length of work	4-6 Years	4	4.2%
	7-10 Years	3	3.2%
	>10 Years	86	91.4%
Total		94	100%
	Marry	91	96.8%
Marital status	Not married yet	3	3.2%
Total		94	100%

Source: Data processed by researchers, 2025

Based on table 3, the research respondents consisted of 94 employees, all of whom were male (100%), with no female employees. This reflects the dominance of male workers at PT Berkas Sawit Utama, which is related to the characteristics of work in the palm oil plantation and processing sector. The majority of employees are of productive age, with the 40–49 age group as many as 46 people (49%) and the 30–39 age group as many as 45 people (47.8%), while the 20–29 age group is only 3 people (3.2%). There are no employees under the age of 20 or over 50 years.

All employees have a final education level equivalent to high school (100%), with no education below high school, diploma, bachelor's, or master's. In terms of length of service, the majority of employees (86 people or 91.4%) have worked for more than 10 years, while the rest are in the range of 4-6 years (4.2%), 7-10 years (3.2%), and 1-3 years (1.1%), with no employees with a work period of less than 1 year. In addition, the majority of employees (91 people or 96.8%) are married, while 3 people (3.2%) are not married. Overall, the characteristics of PT Berkas Sawit Utama employees show male dominance, productive age, secondary education level, long work experience, and the majority are married, which has the potential to support the level of work productivity in the company.

Table 4. Distribution of Respondents' Answers to Work Productivity (Y)

No	Dimensions	Amount	Category
1	Ability	398.5	Very high
2	Yield Improvement	404	Very high
3	Spirit at work	413	Very high
4	Self-development	406.5	Very high
5	Quality	415.5	Very high
6	Efficiency	413	Very high

Average	408.4	Very high
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Source: Data processed by researchers, 2025

Based on the data distribution in table 4, employee work productivity at PT Berkas Sawit Utama is classified as very high with an average overall score of 408.4. This shows that employees have excellent abilities, work enthusiasm, and efficiency, and are able to achieve optimal work results. In the dimension of improving work results, it assesses employees' ability to achieve targets and improve work quality with an average score of 404. In the dimension of work enthusiasm, it is measured through employee work ethic and motivation in carrying out tasks, with an average score of 413. In the dimension of self-development, it measures employees' openness to improvement and willingness to face new challenges, with an average score of 406.5.

In the work quality dimension, it reflects the employee's accuracy and effort in maintaining the quality of work, with an average score of 415.5. In the efficiency dimension, it assesses the employee's ability to optimize work results with minimal use of resources, with an average score of 413. However, the capability dimension is the dimension with the lowest average score, namely 398.5, which includes employee understanding and skills in completing tasks according to company standards.

Table 5. Distribution of Respondents' Answers to Work Environment (Z)

No	Dimensions	Amount	Category
1	Physical work environment	359.7	Conductive
2	Non-Physical Work Environment	377.3	Conductive
	Average	368.5	Conductive

Source: Data processed by researchers, 2025

Based on the data distribution in table 5, the work environment at PT BSU Production Section is conducive with an average score of 368.5. The work environment is measured through two dimensions, namely, physical dimensions and non-physical dimensions. The physical dimension includes aspects of the physical work environment, such as facilities, equipment, and workspace conditions, with a total average score of 359.7 which is included in the conducive category. Meanwhile, the non-physical dimension such as relationships between employees and relationships between subordinates and superiors has an average total score of 377.3, which is also in the conducive category and higher than the physical dimension.

Table 6. Distribution of Respondents' Answers to Work Environment (Z)

No	Dimensions	Amount	Category
1	Obey the rules of time	413.5	Very Disciplined
2	Comply with company rules	418.5	Very Disciplined
3	Comply with the rules of conduct at work	416.5	Very Disciplined
4	Comply with other rules	411	Very Disciplined

Average	414.9	Very Disciplined
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Source: Data processed by researchers, 2025

Based on table 6, the distribution of the analyzed data, the level of employee work discipline at PT Berkat Sawit Utama as a whole is in the Very Disciplined category with an average score of 414.9, with the first dimension, namely, obedience to time rules including employee arrival and return according to schedule. This dimension has an average score of 413.5. The second dimension, namely, obedience to company regulations, which includes compliance with Standard Operating Procedures (SOP) and implementation of tasks according to responsibilities, has the highest average score, namely 418.5. The third dimension, namely, obedience to work rules, includes aspects of work ethics and effective communication. with an average score of 416.5. The last dimension, namely, obedience to other rules, includes the use of facilities and compliance with company policies, has an average score of 411.

Outer Model Test

Convergent Validity

Table 7. Outer Loading Assessment

Indicator	Work Productivity (Y)	Work Environment (X)	Work Discipline (Z)	Information
Y1	0.711			Valid
Y2	0.718			Valid
Y3	0.720			Valid
Y4	0.732			Valid
Y5	0.704			Valid
Y6	0.715			Valid
Y7	0.815			Valid
Y8	0.753			Valid
Y9	0.723			Valid
Y10	0.785			Valid
Y11	0.808			Valid
Y12	0.723			Valid
X1		0.716		Valid
X2		0.757		Valid
X3		0.703		Valid
X4		0.732		Valid
X5		0.749		Valid
X6		0.810		Valid
X7		0.810		Valid
Z1			0.775	Valid
Z2			0.769	Valid
Z3			0.816	Valid
Z4			0.760	Valid
Z5			0.806	Valid
Z6			0.701	Valid

Z7	0.702	Valid
Z8	0.769	Valid

Source: SmartPLS output, 2025

Based on Table 7, the outer loading results for each indicator in the variables in this study show a value above 0.70. An indicator is considered valid if it has an outer loading value ≥ 0.70 (Hair et al., 2019). Thus, all indicators used have met the validity criteria, so they can be declared feasible and acceptable.

Table 8. Average Variance Extraordinary (AVE)

Variables	AVE Value	Information
Work Productivity (Y)	0.552	Valid
Work Environment (X)	0.570	Valid
Work Discipline (Z)	0.583	Valid

Source: SmartPLS output, 2025

Based on Table 8, the Average Variance Extracted (AVE) assessment for each variable in this study, namely work productivity (Y) 0.552, work environment (X) 0.570, and work discipline (Z) 0.583 shows a value of ≥ 0.50 . An indicator is considered valid if it has an AVE value ≥ 0.50 (Hair et al., 2019). Thus, all variables in this study have met the convergent validity criteria based on the AVE value.

Discriminant Validity

Table 9. Cross loading

Indicator	Work Productivity (Y)	Work Environment (X)	Work Discipline (Z)
Y1	0.711	0.333	0.337
Y2	0.718	0.405	0.373
Y3	0.720	0.504	0.373
Y4	0.732	0.498	0.373
Y5	0.704	0.280	0.292
Y6	0.715	0.301	0.421
Y7	0.815	0.482	0.563
Y8	0.753	0.355	0.511
Y9	0.723	0.338	0.415
Y10	0.785	0.338	0.444
Y11	0.808	0.435	0.400
Y12	0.723	0.356	0.353
X1	0.286	0.716	0.382
X2	0.288	0.757	0.339
X3	0.304	0.703	0.306
X4	0.287	0.732	0.318
X5	0.398	0.749	0.430
X6	0.533	0.810	0.638
X7	0.537	0.810	0.435

Z1	0.403	0.554	0.775
Z2	0.352	0.309	0.769
Z3	0.508	0.464	0.816
Z4	0.382	0.398	0.760
Z5	0.499	0.431	0.806
Z6	0.383	0.478	0.701
Z7	0.394	0.332	0.702
Z8	0.428	0.443	0.769

Source: SmartPLS output, 2025

Based on Table 9, it is known that all indicators in each variable have the highest cross loading value on their respective variables compared to other variables. A construct is declared valid if its cross loading value reaches ≥ 0.70 and is higher than the cross loading values of other constructs. (Hair Jr. et al., 2016). In conclusion, the indicators used in this study demonstrate strong discriminant validity, effectively representing each variable.

Composite Reliability

Table 10. Composite Reliability

Variables	Cronbach's Alpha	Composite Reliability (rho_a)	Composite Reliability (rho_c)
Work Productivity (Y)	0.926	0.931	0.937
Work Environment (X)	0.876	0.905	0.902
Work Discipline (Z)	0.897	0.902	0.918

Source: SmartPLS output, 2025

Based on Table 8, the Cronbach's Alpha value for each variable shows results ≥ 0.70 . A research instrument is considered to have adequate reliability if the Cronbach's Alpha and Composite Reliability values both reach ≥ 0.70 . (Hair et al., 2019) This shows that the Cronbach's Alpha value is acceptable and considered satisfactory, so that each construct in the research model has good reliability.

Inner Model Test

Multicollinearity Test

Table 11. VIF (Variance inflation Factor)

Variables	VIF
Work Environment (X) -> Work Productivity (Y)	1,476
Work Environment (X) -> Work Discipline (Z)	1,000
Work Discipline (Z) -> Work Productivity (Y)	1,476

Source: SmartPLS output, 2025

Based on the results of the multicollinearity test in table 11, the VIF value for the relationship between Work Environment (X) and Work Productivity (Y) is 1.476, for the relationship between Work Environment (X) and Work Discipline (Z) is 1.000, and for the relationship between Work Discipline (Z) and Work Productivity (Y) is also 1.476. All VIF values are below the threshold of <5 . A Variance Inflation Factor (VIF) value of less than <5 indicates that the predictor construct does not experience multicollinearity problems (Hair et al., 2019). So it

can be concluded that there is no multicollinearity between variables in the model. Thus, the regression model meets the basic assumptions and is feasible for further analysis.

R-Square

Table 12. R-Square

Variables	R Square	R Square Adjusted
Work Discipline (Z)	0.322	0.315
Work Productivity (Y)	0.374	0.360

Source: SmartPLS output, 2025

Based on the results of the determination coefficient test in Table 12, According to Hair et al. (2019), the R² value can be grouped into three categories: 0.25 (weak), 0.50 (moderate), and 0.75 (strong). In The Work Discipline (Z) variable has an R-Square value of 0.322, which means that 32.2% of the variation in Work Discipline can be explained by the Work Environment, while the remaining 67.8% is influenced by other factors outside the model. For the Work Productivity (Y) variable, the R-Square value of 0.374 indicates that 37.4% of the variation in Work Productivity is explained by the Work Environment and Work Discipline, while 62.6% is influenced by other factors outside the model.

Effect Size/F-Square

Table 13. F-Square of Direct Influence

Variables	F-Square	Information
Monkey Environment (X) -> Work Productivity (Y)	0.107	Low
Monkey Environment (X) -> Work Discipline (Z)	0.476	Tall
Work Discipline (Z) -> Work Productivity (Y)	0.152	Moderate

Source: SmartPLS output, 2025

According to the data presented in Table 13, the analysis reveals that the Work Environment (X) exerts a low level of influence on Work Productivity (Y), with a value of 0. 107. In contrast, the Work Environment (X) significantly impacts Work Discipline (Z), demonstrating a strong influence at 0. 476. Furthermore, the relationship between Work Discipline (Z) and Work Productivity (Y) shows a moderate influence, with a value of 0. 152. These findings indicate that Work Discipline (Z) plays a more substantial role in enhancing Work Productivity (Y) compared to the direct effects of the Work Environment (X). The classification for F-Square values is defined as follows: values of 0. 02 or below are considered low, 0. 15 moderate, and 0. 35 high. If the F-Square value is less than 0.02, then the effect can be ignored or considered insignificant (Sarstedt & Cheah, 2019).

To find out the indirect or mediating effect between the variables of Monkey Environment (X) on Work Productivity (Y) through Work Discipline (Z) as an intervening variable that is not available in Smart PLS, the Upsilon V formula is used = B2MX . B2YM · X . By multiplying the Path Coefficient value

or the original sample of the variable x against z squared and z against y squared.(Lachowicz & Preacher, 2018).

Table 14. F-Square of indirect effects

Variables	F-Square	Information
Work Environment (X) -> Work Discipline (Z) -> Work Productivity (Y)	$(0.568)^2 \times (0.375)^2 = 0.044$	Towards Medium

Source: Data processed by researchers 2025

Based on table 14, the results of the analysis show that Work Discipline (Z) is able to mediate the indirect influence between Work Environment (X) on Work Productivity (Y) with a value of 0.044. This value is included in the category of influence towards medium. This indicates that Work Discipline (Z) has a role as a significant intervening variable in increasing the impact of the work environment (X) on work productivity (Y) occurs indirectly, although the influence is not yet fully strong.

Bootstrapping/Hypothesis Testing

Table 15. Direct effect

Variables	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/S/STDEV)	P Values
Work Environment (X) -> Work Productivity (Y)	0.315	0.325	0.096	3,292	0.001
Work Environment (X) -> Work Discipline (Z)	0.568	0.581	0.065	8,785	0,000
Work Discipline (Z) -> Work Productivity (Y)	0.375	0.325	0.108	3,469	0.001

Source: SmartPLS output, 2025

Based on the direct effect results presented in table 15, Hypothesis testing is done by examining the t-statistics and p-values. If the t-statistics value is greater than the t-table value (1.96) and the p-values <0.05, then there is a significant influence between the variables, so the hypothesis can be accepted (Ghozali and Latan, 2015,).

as follows:

- 1) **The Influence of Work Environment (X) on Work Productivity (Y)**
The Original Sample (O) value is 0.315 with t-statistics of 3.292 (greater than t-table 1.96) and p-values of 0.001 (smaller than 0.05). These results indicate that the Work Environment (X) has a direct positive and significant effect on Work Productivity (Y). Thus, Hypothesis 1 is accepted.
- 2) **The Influence of Work Environment (X) on Work Discipline (Z)**

The Original Sample (O) value is 0.568 with t-statistics of 8.785 (greater than t-table 1.96) and p-values of 0.000 (smaller than 0.05). These results indicate that the Work Environment (X) has a direct positive and significant effect on Work Discipline (Z). Thus, Hypothesis 2 is accepted.

3) The Influence of Work Discipline (Z) on Work Productivity (Y)

The Original Sample (O) value is 0.375 with t-statistics of 3.469 (greater than t-table 1.96) and p-values of 0.000 (smaller than 0.05). These results indicate that Work Discipline (Z) has a direct positive and significant effect on Work Productivity (Y). Thus, Hypothesis 3 is accepted.

Table 16. Indirect effect

Variables	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (/O/S/STDEV)	P Values
Monkey Environment (X) -> Work Discipline (Z) -> Work Productivity (Y)	0.213	0.220	0.068	3,123	0.002

Source: SmartPLS output, 2025

The analysis of the indirect effect results displayed in Table 16 revealed that:

1) The Influence of Work Environment (X) on Work Productivity (Y) through Work Discipline (Z) as an intervening variable.

The Original Sample (O) value is 0.213, with a T-statistics value of 3.123 (greater than the t-table of 1.96) and a p-value of 0.002 (smaller than 0.05). These results indicate that the Work Environment (X) indirectly has a positive and significant influence on Work Productivity (Y) through Work Discipline (Z). Thus, Hypothesis 4 is declared accepted and proven.

DISCUSSION

Overview of Work Productivity, Work Environment, and Work Discipline

According to the findings of the study,, it shows that the description of employee work productivity at PT Berkas Sawit Utama is in the Very High category with an overall average in the descriptive analysis, namely with a score of 408.4 with the dimensions measured, namely ability, increased work results, work enthusiasm, self-development, work quality, and efficiency. The work quality dimension recorded the highest average score (415.5), indicating accuracy and consistency in maintaining work quality, while the ability dimension had the lowest score (398.5), although it remained in the very high category. This shows that the company has created a work environment that supports productivity, although the ability aspect can be a focus for improvement.

The employee work environment is also in the conducive category, with an overall average in the descriptive analysis, namely with a score of 368.5 with two dimensions measured: physical and non-physical. The non-physical dimension has a higher average score (377.3) than the physical dimension (359.7).

Non-physical aspects such as communication and work atmosphere contribute greatly to productivity, with the highest score. However, in the physical dimension, improvements to facilities to support more optimal productivity.

Employee work discipline is in the Very Disciplined category of 368.5, with an average score in all dimensions above 400. The dimension of compliance with company regulations recorded the highest score (418.5), reflecting high compliance with SOPs and job responsibilities. The statement with the highest score is Statement 5 regarding work ethics (429), while the lowest score is in Statement 7 regarding the use of company facilities (403), although it is still in the very disciplined category. Overall, employees at PT Berkas Sawit Utama demonstrate very good productivity, work environment, and work discipline. However, certain aspects, such as work ability indicators and work facilities, require attention to further support more optimal work productivity.

The Influence of the Work Environment on Work Productivity

The research findings indicate that the Work Environment (X) has a positive and significant direct impact on the Work Productivity (Y) of employees at PT Berkas Sawit Utama. With an Original Sample (O) value of 0.315, it can be inferred that improvements in the quality of the Work Environment will lead to an increase in employee Work Productivity. The P-value of 0.001 is well below the threshold of 1.96, further affirming the significance of this relationship. Additionally, the F-Square value of 0.107 suggests that the effect of the Work Environment on Work Productivity falls within the low category. Despite this low influence, it remains significant, reinforcing the idea that the Work Environment positively affects employee productivity.

This shows that improving aspects of the work environment, both physical and non-physical, can significantly increase employee work productivity in the production department. The physical work environment includes a well-organized work space, adequate and optimally functioning work equipment, complete work facilities, and a comfortable and harmonious work atmosphere. These factors can increase employee focus, enthusiasm, and work efficiency, which in turn contributes to increased work productivity.

In addition, non-physical aspects of the work environment such as effective communication, good working relationships between employees, and harmonious interactions between employees and superiors also create a supportive work atmosphere. This supportive work environment greatly enhances employee productivity. This work productivity includes several dimensions, namely increasing individual abilities, better work results, high work enthusiasm, continuous self-development, maintained work quality, and efficiency in carrying out tasks. Thus, improving the work environment as a whole will contribute to increasing work productivity.

This research is supported by research results by Fau & Buulolo, (2023), at the Teluk Dalam Samsat Office, South Nias Regency. This study concluded that a good working environment significantly increases employee productivity. In line with research by Irfan & Mahargiono (2023), the work environment has a significant influence on employee productivity, where improvements in the

quality of the work environment are directly proportional to increased productivity.

The Influence of the Work Environment on Work Discipline

The study's findings reveal that the Work Environment (X) positively and significantly impacts the Work Discipline (Z) of production employees at PT Berkat Sawit Utama. With an Original Sample (O) value of 0.568, it can be concluded that improvements in the quality of the Work Environment correspond to enhanced employee Work Discipline. Furthermore, the results show a P-value of 0.000 (less than 1.96), underscoring the significance of this relationship between the two variables. Additionally, the F-Square value of 0.476 places the influence of the Work Environment on Work Discipline in a high category. Therefore, it is clear that the Work Environment exerts a strong, positive, and significant effect on boosting employee Work Discipline.

This shows that improving aspects of the work environment, both physical and non-physical, can significantly improve employee work discipline in the production department. The physical work environment includes a well-organized work space, adequate and optimally functioning work equipment, complete supporting facilities, and a comfortable and harmonious work atmosphere. These aspects play an important role in supporting employees to comply with the established work rules and procedures.

On the other hand, non-physical aspects of the work environment such as effective communication, positive working relationships between employees, and harmonious interactions between employees and superiors contribute to creating a conducive work atmosphere. This supportive work environment directly motivates employees to improve work discipline, which includes compliance with time rules, compliance with company policies, compliance with work behavior regulations, and compliance with all applicable regulations. Thus, improving the physical and non-physical work environment contributes to the creation of order and efficiency in the work process, so that employees will tend to be more disciplined in their work.

This research is supported by Eka Suci Maharani Rivai et al. (2023), shows that a good working environment has a significant influence on work discipline at Lau Health Center. This finding is in line with research Alami et al. (2023), which indicates that the working environment conditions also contribute to the level of employee discipline at the PAM Tirta Kamuning Head Office, Kuningan Regency. Furthermore, research by The Son & Aprianti (2020), strengthens this understanding by showing a significant influence between the work environment and employee work discipline in Lambitu District, Bima Regency.

The Influence of Work Discipline on Work Productivity

These results indicate that Work Discipline (Z) has a positive and significant direct influence on Work Productivity (Y) of PT Berkat Sawit Utama production employees. Based on the Original Sample (O) value of 0.375, it can be concluded that every increase in the quality of Work Discipline will increase employee Work Productivity. With P-values of $0.000 < 0.05$ and T-Statistics of $3.584 > 1.96$. In addition, the F-Square value of 0.152 indicates that the influence

of Work Discipline on Work Productivity is included in the moderate category. Thus, it can be stated that Work Discipline has a moderate, positive, and significant influence on increasing employee Work Productivity.

This shows that improving work discipline can contribute significantly to improving employee work productivity. Work discipline includes aspects such as compliance with time rules, compliance with company policies, compliance with work behavior rules, and compliance with other regulations. These aspects play an important role in creating a structured and conducive work environment. Work productivity, which includes individual abilities, increased work results, work enthusiasm, skill development, quality of work results, and efficiency in carrying out tasks, is positively influenced by a high level of discipline. Thus, the implementation of consistent and effective work discipline not only supports the achievement of organizational targets, which ultimately contributes to increasing employee work productivity.

This research is supported by Irfan & Mahargiono (2023), Work discipline plays a crucial role in enhancing employee productivity. The study revealed that as work discipline improves, employee productivity tends to increase correspondingly. This aligns with existing research on the subject by Alami et al. (2023) at JNE Sub Agent Klaten. which states that the work discipline variable partially has a significant effect on employee productivity. This shows a close relationship between the two variables. In addition, darmawan (2023) also confirmed the influence of work discipline on employee productivity in a case study at PT Timur Raya Anugerah Damai.

The Influence of Work Environment on Work Productivity Through Work Discipline as an Intervening Variable

The findings suggest that Work Discipline serves as an effective intervening variable, positively and significantly mediating the relationship between the Work Environment and Work Productivity at PT Berkas Sawit Utama's production department. The Original Sample (O) value of 0.213 indicates that the Work Environment positively impacts Work Productivity through Work Discipline. Additionally, the P-value of 0.002 and T-Statistics of 3.179 comply with the established threshold, as P-Values greater than 1.96 affirm these results. Furthermore, an F-Square value of 0.044 classifies this influence as moderate. Therefore, we can conclude that the Work Environment significantly enhances Work Productivity through Work Discipline, demonstrating a noteworthy contribution in the medium range.

Thus, work discipline is able to mediate the influence of the work environment on the work productivity of PT Berkas Sawit Utama production employees. This means that a conducive work environment consisting of a physical work environment and a non-physical work environment has a positive and significant effect on work productivity consisting of ability, increased work results, work enthusiasm, self-development, quality, and work efficiency, this influence is strengthened through work discipline as an intervening variable consisting of obedience to time rules, obedience to company rules, obedience to rules of behavior at work, and obedience to other rules. By maintaining high

work discipline, the relationship between a conducive work environment and work productivity can be optimized,

This research is supported by Wardhana (2023), found that work discipline can mediate the influence of the work environment on employee productivity. This study, conducted at PT Indocement Tunggul Prakarsa Tbk, shows that work discipline has an important role in linking the quality of the work environment to employee productivity.

CONCLUSIONS AND RECOMMENDATIONS

Based on the results of the analysis and discussion, it can be concluded that the work productivity of PT Berkas Sawit Utama production employees is in the very high category with an average score of 408.4, the work environment is classified as conducive with an average score of 368.5, and work discipline is in the very disciplined category with an average score of 414.9. The work environment (X) has a positive and significant influence on work productivity (Y) with an F-Square value of 0.107, P-values of 0.001, and T-Statistics of 3.330, although the influence is relatively low. In addition, the work environment also has a positive and significant influence on work discipline (Z), with an F-Square value of 0.476, P-values of 0.000, and T-Statistics of 8.528, which indicates a high category influence. Work discipline (Z) also has a positive and significant influence on work productivity (Y), with an F-Square value of 0.152, P-values of 0.000, and T-Statistics of 3.584, which is classified as moderate. In addition, work discipline (Z) acts as an intervening variable that mediates the influence of the work environment (X) on work productivity (Y). This indirect influence is positive and significant with an F-Square value of 0.044, P-values of 0.002, and T-Statistics of 3.179, so that the work environment significantly affects work productivity through increased work discipline.

Based on the results of the analysis and discussion, the researcher provides several suggestions for improvement. First, for the work productivity variable, it is recommended that companies provide relevant and ongoing training, ensure that there are clear and easy-to-understand SOPs, and provide mentoring by experienced employees. Periodic evaluations also need to be carried out to improve employee understanding of their duties. Second, for the work environment variable, companies are advised to ensure that the quality of PPE meets safety standards through routine checks, provide training on the correct use of PPE, and monitor employee compliance in its use. Each employee must also receive PPE that is appropriate for their type of work. Third, for the work discipline variable, it is recommended that companies conduct routine socialization about the rules for using facilities, implement a system of sanctions and rewards to encourage discipline, and carry out good supervision and monitoring to ensure compliance with existing procedures. These steps are expected to improve employee discipline in using facilities, which ultimately supports the company's efficiency and productivity.

ADVANCED RESEARCH

For further researchers, it is recommended to add other variables that were not examined in this study, so that they can provide deeper insight into the factors that influence employee productivity.

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