TEKNOLOGI JOURNAL
LPPM Universitas Putra Indonesia YPTK Padang
Lubuk Begalung Main Street, Padang, Zip Code: 25221, Sumatera Barat, Indonesia
Volume: 15, Issue: 1, Page: 14 - 21, June 30th, 2025, e-ISSN: 2541-1535
Available online at website: https://jitekin-upiyptk.org/ojs/index.php/Teknologi/index

The Effect of K3 Implementation on Productivity using *SEM -PLS*

Reza Wulandari [1]
[1] Department of Industrial Engineering, Faculty of Engineering, Putra Indonesia University YPTK Padang, Padang, 25221, West Sumatra, Indonesia.
correspond_author_email: rezawulandar0905@gmail.com

Abstract

Occupational safety and health is an effort to create a workplace that is comfortable, safe, healthy and free from environmental pollution, so that workers are protected from accidents at work, so that in the end they are able to increase efficiency in any aspect and are also able to increase productivity. The conflict that occurred in the CNG Tofu Factory was the lack of implementation based on K3 as a result of which work accidents were not uncommon and decreased productivity. The purpose of this study was to determine the impact of the application of K3 on productivity at the CNG Tofu Factory. The method used in this research is the Structural Equation Modeling - Partial Least Square (SEM-PLS) method. The data used is the output based on the distribution of questionnaires to 22 respondents which is then processed using the SmartPLS application. The results obtained indicate that the work safety variable (X1) has a positive and significant effect on the productivity variable (Y) = 53.3%. And the occupational health variable (X2) has a positive and significant effect on the productivity variable (Y) = 44.6%. Thus, it can be concluded that the application of K3 has a positive and significant effect on productivity (Y) = 86.2%.

Keywords: Safety, Health, Occupational, Workplace, Productivity, Tofu Industry, SEM-PLS

1. Introduction

Occupational safety and health (K3) is a way to create a comfortable, safe, healthy and pollution-free workplace so that workers can avoid work accidents, and ultimately increase efficiency in all aspects and increase work productivity [1] .

"CNG" Tofu Factory is one of the largest tofu producers in Solok City, located at Jl. Sersan Basir No. 6, Gawan, Tanah Garam, Solok City. In addition to being the largest tofu factory in Solok City, the "CNG" tofu factory also has very good tofu quality. where the turnover obtained per day can reach an average of Rp. 7,000,000, -. The distribution reach of tofu is not only within Solok City, but also to several areas in Solok Regency.

Structural Equation Modeling (SEM) is a multivariate technique that is a collaboration between factor analysis using regression analysis (correlation), which aims to test the interaction between variables contained in a model, both the relationship between indicators and constructs and the relationship between constructs and constructs. *Partial Least Square* (PLS) is one of the other methods of the *Structural Equation Modeling* (SEM) method that can be used to overcome conflicts where the interaction between variants is very complex, but the sample size is very small (minimal) [2] [3] .

This study uses a saturated sampling technique, where the population is all samples. Measurement of the effect of the implementation of K3 on productivity is calculated based on *the output of* the distribution of questionnaires to 22 respondents. The questionnaire calculation system uses a *Likert scale* . The following will show some previous studies that are the same as this case:

The Impact of Occupational Safety and Health (K3) on Employee Work Productivity in the *Service Section* at PT. Mayangsari Berlian Motors Sidoarjo. *The output* of this research simultaneously explains that occupational safety and health (K3) have an influence on employee work productivity of 46.2%, and the shortcomings are driven by other unobserved variables. While if partially, occupational safety has an influence of 0.42 and occupational health has an influence of 1.947. So from *the output* it can be concluded that occupational safety which has a great influence on employee work productivity is analogous to occupational health [4].

Occupational Safety and Health (K3) and also the work environment can affect work productivity in a construction project. Based on *the output of* the research analysis, it was concluded that the occupational safety and health variable (X1) had a positive and significant effect on work productivity (Y) using the values (T-statistic = 14.487 > 1.96) and (P-values = 0.000 < 0.05). While the work environment variable (X2) had a significant effect on work productivity (Y) with the values (T-statistic = 3.962 > 1.96) and (P-values = 0.000 < 0.05) [5].

In order to find out how Occupational Safety and Health (K3) affects worker productivity at PT. X. For the calculation used is SEM. Where the occupational safety variable has a positive and significant effect on the

Submitted: April 20th, 2025 | Revised: May 1st, 2025 | Accepted: May 25, 2025 | Published: June 30th, 2025

productivity variable with a path coefficient value of 0.31. The occupational health variable has a positive and significant effect on the productivity variable with a path coefficient value of 0.46. And then Occupational Safety and Health (K3) is able to explain the productivity variable by 52% [6].

To find the influence of Occupational Safety and Health (K3) on the work productivity of employees working at PT Timurjaya Dayatama in Sonder. Intended to find the influence of Occupational Safety and Health on the work productivity of employees working at PT Timurjaya Dayatama in Sonder [7].

The purpose of this study is to see the impact or influence of the implementation of K3 on the work productivity of *service employees* simultaneously and partially. By using the research method of the Quantitative Descriptive Method of Linear Regression (SPSS 16.00). The results of this study explain simultaneously that K3 has an impact on employee work productivity of 46.2%. So that the shortcomings are determined by other variables that are not studied. While partially, safety has an effect of 0.42 and health as much as 1.947. As a result, based on *the output* , it can be concluded that work safety has an impact on employee work productivity, analogous to work health [8].

Testing and analyzing how much influence and level of awareness of Occupational Safety and Health (K3) culture for Industrial Engineering Students of Muhammadiyah University of Surakarta. The calculation used in this study is *Partial Least Square* (PLS-SEM). The results of the study indicate that environmental, organizational, and work factors have a significant effect on awareness, and individual factors are not significant on awareness. So that an improvement strategy is obtained by increasing environmental, organizational and work preferences so that the implementation of K3 Culture can be maximized [9].

PT. Japfa Comfeed Indonesia (PT. JCI) is a livestock feed company with a high level of production. The research results explain that the variables of competence, motivation, and work equipment that can affect the productivity of the workforce itself, along with their respective values are, 0.274; 0.337; 0.197. The variables that drive employee job satisfaction are ability and also work methods. By increasing competence, and motivation can increase workforce productivity at PT. Japfa Comfeed Indonesia [10].

The problem that occurred at PT Gaharu Putra Baja Mandiri, was the less than maximum quality assurance system procedures carried out by the company and the minimal attention of the company to employees in the field of occupational health and safety which led to a decline in performance from 2018-2019. This study uses a multiple linear regression calculation method. *The output* obtained from this research is that the quality assurance system separately has no effect and is not significant on employee performance and occupational health and safety (K3) separately has an effect and is significant on employee performance. In this study, the quality assurance system, occupational health and safety (K3) had an impact on performance of 47.9% [11].

To analyze the influence of work safety, work skills, and work ability on stress and its implications on the work productivity of construction service workers in JABODETABEK. Using the SEM method, that safety, skills, suitability of the work location, and stress on workers have a direct effect on work productivity [12].

This research was conducted on employees of PT. Java Prima Abadi Semarang. The end of this study tested that there was a direct influence by occupational safety, occupational health, and positive and significant job satisfaction on employee performance, and there was an indirect influence of occupational safety and occupational health through positive and significant job satisfaction on employee abilities, but did not have an impact on employee abilities, because the estimated influence was smaller than the direct influence [13].

Evaluation of factors based on the implementation of SMK3 that affect worker productivity in *mall fit out work* . The method used is RII (*Relative Importance Index*). The most dominant factor influencing worker productivity in DKI Jakarta *mall fit out work* is the worker communication factor (X5) with a significance of = 0.0022 and a multiple regression coefficient of = 0.821 [14]

To stabilize and advance employee performance productivity at RS. Soepraoen Malang. The method used is the SEM method, where the results of this study indicate that there is a positive and significant influence and the t test shows 6.665> t table (2,000), which is that occupational safety and health (K3) has a significant effect on job satisfaction and there is a significant effect and the t test shows 6.802> t table (2,000), meaning that the layout of the room has a relevant impact on employee job satisfaction [15].

This study aims to find out whether there is an influence of Occupational Safety and Health (K3) on employee work productivity at PT. Kutai Timber Indonesia, Probolinggo City. The conclusion of this research confirms that Occupational Safety and Health (K3) has a positive and significant influence on employee work productivity at PT. Kutai Timber Indonesia. This can be shown from *the output of the r- Square* value of 67.9% [16].

To determine the impact of occupational safety, occupational health, and work environment on work productivity at PT. Yambala Indonesia. By distributing questionnaires to respondents and processing data using the SPSS 24.0 application. The results based on this study indicate that occupational safety has no effect on work productivity, while occupational health and work environment have a significant effect on work productivity at PT. Yambala Indonesia [17].
To find out how the impact of SMK3 on work productivity at PT. Sermani Steel Indonesia. Using the calculation method with the help of SPSS *software* . With research *output* that SMK3 has a very significant impact on employee work productivity at PT. Sermani Steel Indonesia, which is = 44.9% [18].

From the previous research presentation, it can be concluded that K3 does have an effect on productivity, the difference is that this research will be conducted in UMKM , using the SEM-PLS method. Because it is also necessary to pay attention to the stability of productivity in the CNG Tofu Factory .

2. Research methodology

A. Research methods

The method used in this study is *Structural Equation Modeling* (SEM)-PLS. To measure the influence of indicators on variables.

B. Place and time of research

This research was conducted at the CNG Tofu Factory, Solok City from December 22, 2021-January 21, 2022.

C. Data Used

The data used in this study are primary data and secondary data. Primary data was obtained from the results of answers to the distribution of questionnaires to respondents, in this study there were 22 respondents. For the sampling technique using a saturated sampling technique, where the population is the sample. The questionnaire assessment uses a Likert scale assessment system (*5* scales). After that, the data obtained will be processed using the *Smart* PLS application. And the secondary data used is production data from January-October 2021.

Table 1. Summary of Questionnaire Results

Questionnaire Summary						
X1.1	X1.2	X1.3	X1.4	X1.5	X2.1	X2.2
3	5	5	5	5	5	4
4	5	4	4	4	4	4
4	5	4	4	4	4	4
4	4	3	3	3	3	4
3	4	4	4	4	4	4
4	5	4	4	4	4	4
3	5	4	4	5	4	4
3	4	4	4	4	4	4
4	5	4	4	4	4	4
3	4	3	3	3	3	3
3	4	4	4	4	4	3
4	4	4	4	4	4	4
4	4	4	4	4	4	4
4	4	4	4	4	4	4
4	4	4	4	5	4	4
4	4	4	4	4	4	4
3	4	4	4	3	4	4
2	3	3	3	2	3	3
4	5	4	4	4	4	4
3	4	4	4	5	4	4
4	4	4	5	4	4	4
4	4	4	4	5	4	4

Table 2. Summary of Questionnaire Results (Advanced)

Questionnaire Summary							
X2.3	X2.4	X2.5	Y1	Y2	Y3	Y4	Y5
4	4	4	4	5	5	5	4
4	2	4	4	5	4	4	4
4	3	4	4	4	4	4	4
4	4	4	4	4	3	3	4
3	4	4	5	4	4	4	4
4	4	4	4	4	4	4	4
5	5	5	3	5	4	5	4
2	4	4	4	4	4	4	4
4	4	3	4	4	4	4	4
3	3	3	4	4	3	3	3
4	2	3	4	4	4	4	3
4	5	4	5	5	4	4	4
4	3	4	4	5	4	4	4
3	4	4	4	4	4	4	4
4	4	4	4	4	4	5	4
3	3	4	4	4	4	4	4
4	4	4	5	4	4	3	4
3	3	3	3	4	3	4	3
4	3	4	4	4	4	4	4
4	4	4	4	4	4	3	4
4	4	4	4	5	5	4	4
5	4	4	4	4	4	4	4

Of the three variables, each variable has five indicators where each indicator, one indicator is represented by one question in the questionnaire content, the indicators of the variables can be seen in the description below:

1. Variable 1 Occupational Safety (X1), with indicators:
   X1.1 = Workplace Conditions

X1.2 = Machine Arrangement
X1.3 = K3 Training
X1.4 = Use of PPE
X1.5 = Use of Work Procedures

2. Variable 2 Occupational Health (X2), with indicators:
X2.1 = Lighting system
X2.2 = Air temperature
X2.3 = Noise
X2.4 = How it Works
X2.5 = Psychological Mentality

3. Variable 3 productivity (Y), with indicators:
Y1 = Work Skills
Y2 = Inter-Worker Relations
Y3 = Relationship between Workers and Owners
Y4 = Labor Efficiency
Y5 = Overtime Pay

3. Results and Discussion

A. The Effect of K3 Implementation on Productivity Using SEM-PLS

To see the effect of the implementation of Occupational Safety and Health (K3) on productivity, *Structural Equation Modeling* (SEM)-PLS calculations can be used. The latent variables in this study are as follows: exogenous latent variable Occupational Safety (X1) with five manifest variables (indicators) coded X1.1, X1.2, X1.3, X1.4, and X1.5. Exogenous variable Occupational Health (X2) with five manifest variables (indicators) coded X2.1, X2.2, X2.3, X2.4, and X2.5. While the endogenous latent variable in this study is Productivity (Y) with five manifest variables (indicators) coded Y1, Y2, Y3, Y4, and Y5.

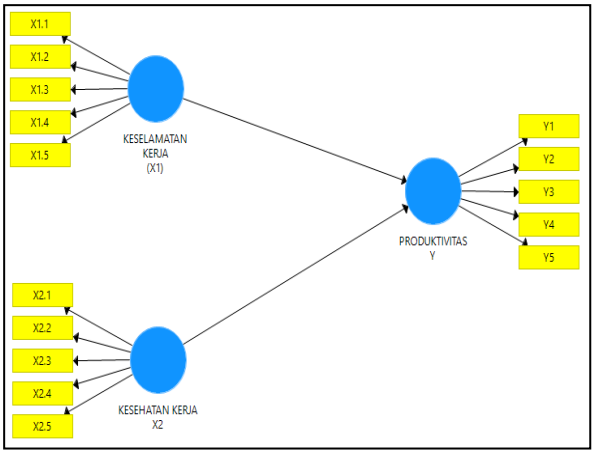

Figure 1 Design of the Measurement Model

a. Measurement Model (*Outer Model*)

The measurement model is also divided into several parts, namely convergent validity , discriminant validity , and composite reliability testing:

1) Convergent *Validity*

The following are the results of the PLS algorithm calculations using the SmartPLS application:

	KESEHATAN KE...	KESELAMATAN...	PRODUKTIVITA...
X1.1		0.458	
X1.2		0.660	
X1.3		0.931	
X1.4		0.897	
X1.5		0.839	
X2.1	0.756		
X2.2	0.889		
X2.3	0.466		
X2.4	0.582		
X2.5	0.837		
Y1			0.218
Y2			0.626
Y3			0.891
Y4			0.613
Y5			0.758

Figure 2 Convergent Validity Test

The results of the validity test using convergent validity of factors by looking at the *loading factor value* . Data is said to be valid if the value of *the loading factor* of each indicator has a value > 0.4.

In the results of the convergent validity test above, there is one indicator (Y1) = 0.218 that does not meet the assumptions, so it can be said that the indicator is not good enough to measure the Productivity variable (Y). for that, indicators that have no effect or whose values are <0.4 must be removed from the measurement model, then re-calculate the PLS algorithm (second iteration).

	KESEHATAN KE...	KESELAMATAN...	PRODUKTIVITA...
X1.1		0.454	
X1.2		0.662	
X1.3		0.931	
X1.4		0.896	
X1.5		0.841	
X2.1	0.755		
X2.2	0.886		
X2.3	0.475		
X2.4	0.580		
X2.5	0.839		
Y2			0.644
Y3			0.885
Y4			0.661
Y5			0.735

Figure 3.3 Convergent Validity Test (Second Iteration)

After the second iteration of the PLS algorithm calculation was carried out again, the results obtained showed that *the loading factor value* of each indicator

was > 0.4. It can be said that all remaining indicators have an effect on the variable. After all indicators meet the convergent validity requirements, it can be continued to the discriminant validity stage.

2) Discriminant *Validity*

discriminant validity test , the aim is to test the validity of the data by comparing the *loading factor value* of each variable indicator with other variable indicators. A variable indicator is said to be valid if the variable indicator has a higher *loading factor value compared to the loading factor value* of other variables. The following are the results of the discriminant validity test using *Smart* PLS:

	KESEHATAN KERJA_X2	KESELAMATAN KERJA_(X1)	PRODUKTIVITAS_Y
X1.1	0.416	0.454	0.400
X1.2	0.515	0.662	0.505
X1.3	0.755	0.931	0.845
X1.4	0.704	0.896	0.885
X1.5	0.745	0.841	0.705
X2.1	0.755	0.931	0.845
X2.2	0.886	0.658	0.735
X2.3	0.475	0.410	0.353
X2.4	0.580	0.216	0.370
X2.5	0.839	0.504	0.650
Y2	0.428	0.420	0.644
Y3	0.704	0.896	0.885
Y4	0.442	0.562	0.661
Y5	0.886	0.658	0.735

Figure 4 *Output Result of Cross Loading*

3) Composite Reliability Test

After conducting the discriminant validity test, it will be continued with a composite reliability test by looking at *the construct validity and reliability values* in the *Smart* PLS application:

	Cronbach's Alpha	rho_A	Reliabilitas Komposit	Rata-rata Varians Diekstrak (AVE)
KESEHATAN KERJA_X2	0.765	0.829	0.840	0.524
KESELAMATAN KERJA_(X1)	0.824	0.891	0.879	0.604
PRODUKTIVITAS_Y	0.723	0.766	0.824	0.544

Figure 5 *Construct Validity and Reliability*

The requirement for good reliability for a variable is if the processed data can produce CR and CA values greater than 0.7 (> 0.7).

In the image of the results of the reliability test above, it shows that all latent variable indicators in this study have a CR value > 0.7, as well as a CA value > 0.7. So it can be said that all variables in this study meet the reliability requirements of a variable.

b. Structural Model (*Inner Model*)

This structural model also consists of several parts that need to be tested, namely as follows:

1) *Square* Testing

From the test results, the R- *Square value can be obtained* , where this value is used to determine the level of influence of the Occupational Safety variable (X1), the Occupational Health variable (X2) on the Productivity variable (Y). The following image below will show the results of the R- *Square value* :

R Square

Matriks | R Square | Adjusted R Square

	R Square	Adjusted R Square
PRODUKTIVITAS_Y	0.862	0.847

Square Test Results

Where a research model is said to be good if it has an R-Square value > 0.67. The results of the R-Square test in this study showed a value = 0.862, so it can be concluded that in this study the K3 variable has a fairly strong effect on the Productivity variable.

2) Significance Test

As for the significance test stage in this study in the SEM-PLS model, it aims to determine how much influence the exogenous variables in this study, namely Occupational Safety (X1) and Occupational Health (X2) have on the Productivity variable (Y) at the CNG Tofu Factory, Solok City. By using the help of the SmartPLS application. Hypothesis testing is carried out by carrying out the *bootstrapping process* . From the *bootstrapping process* , results will be obtained that show the influence of an exogenous variable on Occupational Safety (X1) and the Occupational Health variable (X2) on the Productivity variable (Y). The following will present the results of the *bootstrapping process* , namely:

Koefisien Jalur

Mean, STDEV, T-Values, P-Values | Keyakinan Interval | Keyakinan Interval Bias-Dikore... | Sampel | Salin ke Clipboard: | Format Excel | Format R

	Sampel Asli (O)	Rata-rata Sampel (M)	Standar Deviasi (STDEV)	T Statistik (|O/STDEV|)	P Values
KESEHATAN KERJA_X2 -> PRODUKTIVITAS_Y	0.425	0.381	0.204	2.089	0.037
KESELAMATAN KERJA_(X1) -> PRODUKTIVITAS_Y	0.546	0.594	0.190	2.870	0.004

Bootstrapping Calculation Results

The image above will be used as a reference for hypothesis testing in this study. One of them is by comparing the t- *table value* with its t- *statistic* . With a total of 22 respondents and a significance level of 5%, it can be concluded that the t- *table value* in this study = 0.05.

From the *output results of the bootstrapping-statistic* calculation in Figure 4.6 above for the variable about Work Safety (X1) on the Productivity variable (Y) = 2.089 is greater than the t- *table value* . In other words, the hypothesis stating that there is an influence of Work Safety (X1) on the Productivity variable (Y) can be accepted. The path coefficient value shows a positive result, namely = 0.425, which indicates that the direction of the relationship between the Work Safety variable (X1) and the Productivity variable (Y) is positive or significant.

Based on the *output results -statsitic* for the Occupational Health variable (X2) on the Productivity variable (Y) as shown in Figure 4.6 above, the t-statistic value = 2.870 is greater than the t- *table value* . So the hypothesis that states Occupational Health (X2) has an effect on Productivity (Y) can be accepted. In addition, the path coefficient value for the Occupational Health variable (X2) shows a positive value of = 0.546. This shows that the direction of the relationship between the Occupational Health variable (X2) and Productivity (Y) is positive. So in this study Occupational Health (X2) has a significant effect on Productivity (Y).

B. Indicators that Influence K3 on Productivity

Of the 15 indicators processed, 14 indicators are left that are stated to have an effect on K3 on productivity. Because there is one indicator (Y1) that does not meet the assumption requirements (*loading factor value* <0.04), where the value of the Y1 variable = 0.218. This means that the Y1 indicator (Work Skills) does not have an effect or is significant on the Y variable (productivity) so it must be removed from the measurement model.

Table 2. Influential Indicators

***Loading Factor* Value**			
Indicator	**(X1)**	**(X2)**	**(Y)**
X1.1	0.454		
X1.2	0.660		
X1.3	0.931		
X1.4	0.897		
X1.5	0.839		
X2.1		0.756	
X2.2		0.889	
X2.3		0.466	
X2.4		0.582	
X2.5		0.837	
Y2			0.626
Y3			0.891
Y4			0.613
Y5			0.758

Based on the results of the loading factor values based on table 4.2 above, it can be concluded that the indicators that influence Occupational Safety and Health (K3) on productivity are as follows:

1. Workplace Conditions
   Workplace conditions at the CNG Tofu Factory have an influence of 0.454 or 45.4% on work safety.
2. Machine Assembly
   The arrangement of machines in the CNG Tofu Factory has an influence of 0.660 or 66% on work safety.
3. K3 Training
   K3 training at the CNG Tofu Factory has an impact of 0.931 or 93.1% on occupational safety.
4. Use of PPE
   The use of PPE in the CNG Tofu Factory has an effect of 0.897 or 89.7% on work safety.
5. Use of Work Procedures
   The use of work procedures in the CNG Tofu Factory has an effect of 0.839 or 83.9% on work safety.
6. Lighting System
   The lighting system in the CNG Tofu Factory has an influence of 0.756 or 75.6% on occupational health.
7. Air temperature
   Air temperature in the CNG Tofu Factory has an effect of 0.889 or 88.9% on occupational health.
8. Noise
   Noise in the CNG Tofu Factory has an effect of 0.466 or 46.6% on occupational health.
9. Ways of working
   The working methods of workers at the CNG Tofu Factory have an effect of 0.582 or 58.2% on occupational health.
10. Mental Psychology
    The psychological mentality of workers at the CNG Tofu Factory has an influence of 0.837 or 83.7% on occupational health.
11. Inter-Worker Relations
    The relationship between workers at the CNG Tofu Factory has an influence of 0.626 or 62.6% on productivity.
12. Employee-Owner Relationship
    The relationship between workers and owners at the CNG Tofu Factory has an influence of 0.891 or 89.1% on productivity.
13. Work Efficiency

Work efficiency at the CNG Tofu Factory has an effect of 0613 or 61.3% on productivity.

14. Overtime pay
    Overtime pay received by workers at the CNG Tofu Factory has an effect of 0.758 or 75.8% on productivity.

C. Comparison of Productivity Before and After Implementing K3

After conducting research from December 21, 2021 - January 22, 2022 which was conducted at the CNG Tofu Factory, Solok City (precisely in Tanah Garam). It can be concluded that the comparison of productivity of the CNG Tofu Factory which is seen from the increase or stabilization of the amount of tofu production per day, namely:

Table 3 *Output Comparison*
Before and After Implementation of K3

No.	Month	Before (Time)	After (Time)
1	January	11	4
2	February	10	
3	March	10	
4	April	6	
5	May	9	
6	June	7	
7	July	9	
8	August	7	
9	September	5	
10	October	6	

From the table above, it can be concluded that before the implementation of Occupational Safety and Health (K3), there were many CNG Tofu Factory *outputs* that were below the production target, with an average of = 8 times. Meanwhile, after the implementation of Occupational Safety and Health (K3) at the CNG Tofu Factory, there was *output stability* in the factory, with *output events* that did not reach the production target only occurring 4 times.

The improvements that can be made to increase or stabilize productivity at the CNG Tofu Factory, Solok City are by paying attention to the condition of the workplace, machine arrangement, K3 training, use of PPE, use of work procedures, lighting systems, air temperature, noise, work methods, psychological mentality, work skills, relationships between workers, relationships between workers and owners, labor efficiency, and overtime pay.

4 Conclusion

Based on the results of the research *output* on the effect of K3 implementation on productivity conducted at the CNG Tofu Factory in Solok City. The Effect of K3 Implementation on Productivity using SEM-PLS at the CNG Tofu Factory can be seen from the following description: that Occupational Safety and Health (K3) has a positive and significant effect on Productivity of 86.2%. Indicators that affect Occupational Safety and Health (K3) on Productivity in the CNG Tofu Factory, Solok City, namely: workplace conditions have an effect of 0.454 or 45.4% on occupational safety. Machine arrangement has an effect of 0.660 or 66% on occupational safety. K3 training has an effect of 0.931 or 93.1% on occupational safety. The use of PPE has an effect of 0.897 or 89.7% on occupational safety. The use of work procedures has an effect of 0.839 or 83.9% on occupational safety. The lighting system has an effect of 0.756 or 75.6% on occupational health. Air temperature has an effect of 0.889 or 88.9% on occupational health. Noise has an effect of 0.466 or 46.6% on occupational health. Work methods have an effect of 0.582 or 58.2% on occupational health. Mental psychology has an effect of 0.837 or 83.7% on Occupational Health. The relationship between fellow workers has an effect of 0.626 or 62.6% on productivity. The relationship between workers and owners has an effect of 0.891 or 89.1% on productivity. Work efficiency has an effect of 0.613 or 61.3% on productivity. And overtime pay received by workers has an effect of 0.758 or 75.8% on productivity. After conducting the research, a comparison of productivity before and after the implementation of K3 in the CNG Tofu Factory was obtained, that before the implementation of Safety and Health (K3), there were many factory *outputs* that were below the production target, with an average of = 8 times. While after the implementation of Occupational Safety and Health (K3) in the CNG Tofu Factory, there was *output stability* in the factory, with the occurrence of *output* that did not reach the production target only occurring 4 times.

Author Contributions Statement

Name of Author	C	M	So	Va	Fo	I	R	D	W
Reza Wulandari	✓	✓	✓	✓	✓	✓		✓	✓

Conflict of Interest Statement

Authors state no conflict of interest.

Informed Consent

We have obtained informed consent from all individuals included in this study.

Data Availability

The data that support the findings of this study are available from the corresponding author, [R], upon reasonable request.

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