

## THE EFFECT OF HEALTH AND OHS PROGRAMS ON EMPLOYEE LOYALTY AT PT. PHE NSO

Ayu Anora<sup>1\*</sup>, Muhammad Multazam<sup>2</sup>

Universitas Bumi Persada, Indonesia

\*Email Correspondence: ayuanora@unbp.ac.id

### Abstract

*This study aims to analyze the effect of occupational health and safety programs on employee loyalty at PT. PHE NSO. The background of this study is based on the importance of creating a safe and healthy work environment to build employee engagement and long-term loyalty to the company. This study uses a quantitative approach with multiple linear regression methods. The number of respondents was 71 people from the company's operational division. The results of the analysis show that partially, the occupational health program has a positive and significant effect on employee loyalty with a  $t$ -value = 4.717 and a significance of 0.000 ( $<0.05$ ). Conversely, the occupational safety program does not have a significant effect on employee loyalty, with a  $t$ -value = -1.091 and a significance of 0.279 ( $>0.05$ ). Simultaneously, both independent variables have a significant effect on employee loyalty, evidenced by the  $F$ -value = 7.932 and a significance of 0.000 ( $<0.05$ ). However, the coefficient of determination (R Square) was only 0.047, meaning that the two variables were only able to explain 4.7% of the variation in employee loyalty, while the rest was influenced by other factors outside the model. Thus, companies are advised to strengthen the implementation of occupational health programs and evaluate the effectiveness of occupational safety programs to have a greater impact on increasing employee loyalty.*

**Keywords:** Occupational health, Occupational safety (K3), Employee loyalty.

### INTRODUCTION

The oil and gas industry is a strategic sector with a high level of occupational risk due to the complexity of operational processes, the use of advanced technology, and exposure to extreme work environments. These conditions make occupational health and safety a fundamental aspect in maintaining workforce safety and the sustainability of company operations, particularly in high-risk industrial sectors such as oil and gas (International Labour Organization, 2021; Reason, 2016). In the context of upstream oil and gas companies, occupational risks not only impact employee physical safety but also psychological well-being and work attitudes. A work environment with high potential for hazards can shape employee perceptions of the company's concern for their well-being, which in turn impacts employee engagement and loyalty to the organization (Neal & Griffin, 2006; Vinodkumar & Bhasi, 2010).

PT. Pertamina Hulu Energi (PHE) NSO is a company engaged in oil and gas exploration and production that implements an occupational health and safety program as part of the company's management system. The Operations Department of PT. PHE NSO Blang Lancang, North Aceh Regency, is a work unit with a high level of operational risk because it is directly involved in the oil and gas processing process. These working conditions require the implementation of an effective OHS program to protect employees while maintaining the company's operational stability (Cooper, 2015; Guldenmund, 2018)

From a human resource management perspective, employee loyalty reflects the level of commitment, emotional attachment, and desire to remain and contribute to the

organization. High levels of loyalty play a crucial role in maintaining organizational sustainability, particularly in industries requiring skilled and experienced workers, such as the oil and gas sector (Meyer & Allen, 1997; Robbins & Judge, 2020). Several studies have shown that the implementation of occupational health and safety programs influences employee attitudes and work behaviors. Research in the manufacturing and construction sectors found that OHS contributes to increased job satisfaction and employee commitment (Astuti et al., 2021; Suryani & Yuliana, 2022). Studies in the mining sector also show that consistent OHS implementation can reduce employee turnover intentions and strengthen employee engagement (Hadiyanto, 2020).

However, most previous research has been conducted in industrial sectors with different risk characteristics than the upstream oil and gas sector. The complexity of work processes, the level of hazard, and the high safety demands make the oil and gas sector require its own empirical study, particularly regarding the impact of OHS programs on employee loyalty (Grote, 2015; Mearns, Whitaker, & Flin, 2003). These limitations indicate a research gap regarding the impact of occupational health and safety programs on employee loyalty in the upstream oil and gas sector, particularly in operational units. Furthermore, previous research has focused more on job satisfaction and productivity, while employee loyalty, as a key variable, has received relatively little attention (Vinodkumar & Bhasi, 2010; Clarke, 2013). Based on this background, this study aims to analyze the effect of occupational health and safety (OHS) programs on employee loyalty in the Operations Department of PT. PHE NSO Blang Lancang, North Aceh Regency. This research is expected to provide empirical contributions to the development of human resource management studies in high-risk industrial sectors and provide practical input for companies in improving the effectiveness of OHS programs that support loyalty and sustainability of human resources (Cooper, 2015; Robbins & Judge, 2020).

The impact of health and safety programs on employee loyalty has been widely discussed across various industries. In high-risk sectors, such as oil and gas, the effectiveness of health and safety initiatives plays a critical role in shaping employees' perceptions of their well-being and organizational commitment (International Labor Organization, 2021; Reason, 2016). Several studies in manufacturing and construction sectors have demonstrated that health and safety measures positively affect job satisfaction and employee commitment (Astuti et al., 2021; Suryani & Yuliana, 2022). In the context of the oil and gas industry, where operational risks are heightened, employees' loyalty is closely linked to the company's focus on maintaining a safe and healthy work environment (Grote, 2015; Mearns et al., 2003). However, research specifically addressing the relationship between health and safety programs and employee loyalty within upstream oil and gas operations remains limited, signaling a gap that this study aims to fill. This research seeks to explore how health and safety programs influence employee loyalty at PT. Pertamina Hulu Energi (PHE) NSO, contributing to both academic knowledge and practical insights for improving human resource management in high-risk industries.

## **METHOD**

This study uses a quantitative approach with an associative approach. This approach aims to identify and analyze the relationship and influence between occupational health and safety (OHS) program variables, as independent variables, and employee loyalty, as dependent variables. Quantitative research was chosen because it allows for objective measurement of variables through numerical data and hypothesis testing using statistical analysis.

This research was conducted at PT. Pertamina Hulu Energi (PHE) NSO Operations, located in Blang Lancang, North Aceh Regency. The research location was selected based on the characteristics of the work environment, which has a high level of risk and the direct involvement of employees in the operational processes of oil and gas processing. The research period was three months, starting from the instrument preparation stage and data collection to the processing and analysis of research data. The subjects in this study were all 250 employees of the Operations Department of PT. PHE NSO Blang Lancang. Given the relatively large population, not all of the population were used as respondents. The sampling technique used was probability sampling with a simple random sampling method, so that each member of the population had an equal chance of being selected as a research sample. Determination of the number of samples was carried out using the Slovin formula with an error rate of 5 percent, resulting in a sample size of 154 respondents who were considered to represent the research population.

The data collection technique in this study was conducted using a questionnaire as the primary instrument. The questionnaire was designed based on the research variable indicators, namely occupational health and safety programs and employee loyalty. The research instrument used a five-level Likert scale, consisting of the options strongly disagree, disagree, undecided, agree, and strongly agree. In addition to the primary data obtained from the questionnaire, this study also utilized secondary data in the form of company documents, internal reports, and relevant literature to support and strengthen the research findings.

The data analysis techniques used included descriptive and inferential statistical analysis. Descriptive analysis was used to describe the characteristics of respondents and the tendencies of their responses to each research variable indicator. Furthermore, inferential analysis was used to test the research hypotheses using simple linear regression analysis to determine the impact of occupational health and safety programs on employee loyalty. The entire data analysis process was conducted using statistical software, with a significant level of 5 percent.

The research cycle in this study begins with problem identification and formulation of research objectives, followed by the development of research instruments based on predetermined variable indicators. The next stage is data collection through the distribution of questionnaires to respondents, followed by data processing and analysis using appropriate statistical methods. The final stage in this research cycle is drawing conclusions and developing recommendations based on the results of the analysis. This cycle is structured systematically to ensure that the research is directed, measurable, and scientifically accountable.

## RESULTS AND DISCUSSION

These findings reinforce the view that strengthening work systems, training, and organizational governance plays an important role in shaping the attitudes and loyalty of human resources, especially in work environments that demand procedural compliance and occupational safety (Anora, 2023; Anora et al., 2024).

### Characteristics of Research Respondents

The respondents in this study were 154 employees of the Operations Department of PT. PHE NSO Blang Lancang. Respondent characteristics were analyzed to provide a general overview of the research subjects and their relevance to the research results. The distribution of respondents based on age, length of service, and education level showed that the majority of respondents were of productive age and had sufficient work experience in the oil and gas sector, thus being deemed relevant for assessing the company's OHS program. The characteristics of the respondents indicate that they have a good understanding of work procedures and safety, so the data obtained is considered representative in describing the actual conditions in the operational work environment of PT. PHE NSO (Robbins & Judge, 2020).

### Description of Occupational Health and Safety (K3) Program Variables

Respondents' perceptions of the occupational health and safety program were analyzed based on several indicators, including the provision of personal protective equipment, occupational safety training, implementation of work procedures, and safety supervision. The descriptive analysis showed that the majority of respondents gave a positive assessment of the implementation of the OHS program. As referred to in Table 1, the average value of respondents' answers is in the high category, which indicates that the K3 program has been implemented consistently, and its benefits are felt by employees in supporting occupational safety.

**Table 1.** Description of Occupational Health and Safety Program Variables

K3 Indicators	Average
Provision of personal protective equipment	4.21
Occupational safety training	4.15
Work procedures and standards	4.18
Occupational safety supervision	4.12
Average K3 Variable	4.17

This finding is in line with Cooper's (2015) research which states that consistent implementation of K3 can increase employees' positive perceptions of a safe work environment.

### Description of Employee Loyalty Variables

Employee loyalty was analyzed based on indicators such as desire to stay, compliance

with regulations, sense of belonging to the company, and willingness to make maximum contributions. The descriptive analysis showed that employee loyalty was in the high category.

As shown in Table 2, the average employee loyalty score is above the midpoint of the measurement scale, reflecting employee commitment and attachment to PT. PHE NSO.

**Table 2. Description of Employee Loyalty Variables**

Employee Loyalty Indicators	Average
The desire to survive	4.20
Compliance with the rules	4.25
A sense of belonging	4.18
Contribution to the company	4.22
Average Loyalty	<b>4.21</b>

These results support the view of Meyer and Allen (1997) who stated that loyalty is a form of employee commitment to the organization that develops through positive work experiences.

### Analysis of the Influence of K3 Programs on Employee Loyalty

To determine the effect of occupational health and safety programs on employee loyalty, a simple linear regression analysis was conducted. The results showed that the OHS program had a positive and significant effect on employee loyalty.

As referred to in Table 3, the regression coefficient value is positive and the significance level is below 0.05, which indicates that the research hypothesis is accepted.

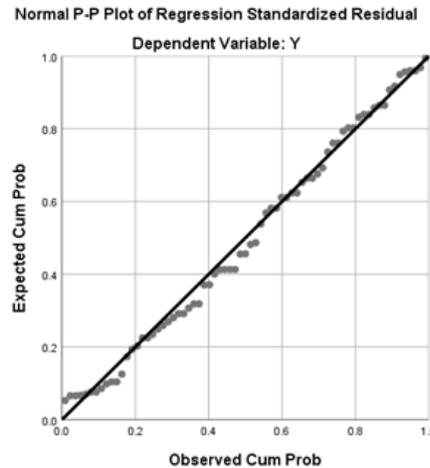
**Table 3. Results of Simple Linear Regression Analysis**

Variables	Coefficient (B)	t-count	Sig.
Constant	8,214	4,326	0,000
K3 Program	0.587	6,842	0,000
R Square	0.421		

The coefficient of determination value of 0.421 shows that the K3 program is able to explain 42.1 percent of the variation in employee loyalty, while the remainder is influenced by other factors outside the research model.

### Normality Testing

The normality test is used to determine whether each variable is normally distributed. The data processing results in a normal probability plot, which shows that the line representing the actual data follows a diagonal line, as shown in this figure.



**Figure 1.** Normal Probability Plot

Based on Figure 1, it can be seen that the line depicting the actual data follows the diagonal line, so it can be interpreted that the data used in this study is normally distributed.

### Multicollinearity Testing

The multicollinearity test is used to determine whether a correlation exists between independent variables in the regression model. The multicollinearity test is performed by examining the Tolerance and Variance Inflation Factor (VIF). Multicollinearity is not present if the VIF is  $\leq 10$  or Tolerance is  $\geq 0.10$ , as shown in Table 4.

**Table 4.** Multicollinearity Test Results

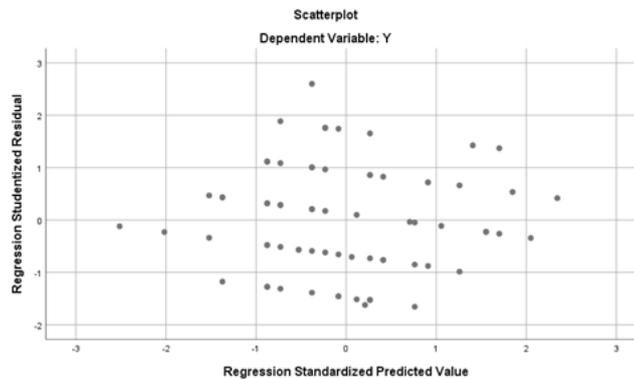
No.	Variables	Tolerance	VIF
1.	Occupational health program(X1)	0.959	1,043
2.	Work safety program (X2)	0.959	1,043

Source: Primary Data 2025, (processed)

Based on Table 4, it can be seen that the occupational health program (X1) and occupational safety program (X2) variables have the smallest tolerance value of  $0.959 \geq 0.10$  or the same as the Variance Inflation Factor (VIF) value of  $1.043 \leq 10$ . Thus, it can be interpreted that there are no symptoms of multicollinearity.

### Heteroscedasticity Testing

The heteroscedasticity test aims to determine whether the regression model used in the study exhibits unequal variances from residuals from one observation to another. To determine the presence or absence of heteroscedasticity symptoms in a regression, a scatterplot graph (dependent predicted value ZPRED, with residual SRESID) is examined. The results of the data processing show a scatterplot graph as shown in Figure 2.



**Figure 2.** Scatterplot Graph of Heteroscedasticity Test Results

Based on Figure 2, it shows that the scatterplot graph does not have a particular pattern, and the points are spread above and below the number 0 on the Y axis, so it can be interpreted that there are no symptoms of heteroscedasticity.

### Regression Coefficient ( $\beta$ )

In accordance with the data analysis tools used to determine the functional relationship between the variables studied in this study, this can be shown by the regression coefficient value of each variable as shown in Table 5.

**Table 5.** Regression Coefficient Value of Independent Variables

Coefficients <sup>a</sup>						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	16,260	2,466		6,593	.000
	X1	.933	.198	.691	4,717	.000
	X2	-.139	.127	-.132	-1,091	.279

a. Dependent Variable: Y

Source: Primary Data, 2025 (processed)

Based on Table 4.8, the regression equation that shows employee loyalty as a function of physical occupational health programs and occupational safety programs can be formulated in the following equation:

$$Y = 16,260 + 0.933X_1 + 0.139X_2 + e$$

From the regression equation above, the following research results can be seen:

The constant value indicates that if the variables  $X_1$  (Occupational Health Program) and  $X_2$  (Occupational Safety Program) are considered constant or have no effect (value 0), then the work loyalty value (Y) is predicted to be 16,260 units. This means that without any contribution from the two programs, employee work loyalty remains at the base level of 16,260.

This coefficient indicates that every one unit increase in the Occupational Health

Program ( $X_1$ ) will increase Job Loyalty ( $Y$ ) by 0.933 units, assuming other variables are constant. The significance value (Sig.) for  $X_1$  is 0.000, which is less than 0.05. This indicates that the effect of the Occupational Health Program on Job Loyalty is statistically significant. In addition, the Beta (standard) value of 0.691 indicates that this variable has the strongest contribution to the dependent variable compared to other variables.

This coefficient indicates that every one-unit increase in the Occupational Safety Program ( $X_2$ ) actually decreases Job Loyalty ( $Y$ ) by 0.139 units, assuming other variables remain constant. However, the significance value of 0.279 is greater than 0.05, which means the effect of the Occupational Safety Program on Job Loyalty is not statistically significant. Thus, although the direction of the relationship is negative, its effect cannot be concluded conclusively based on this data.

The regression results show that of the two independent variables, only the Occupational Health Program ( $X_1$ ) has a significant and positive influence on Employee Loyalty ( $Y$ ). Meanwhile, the Occupational Safety Program ( $X_2$ ) does not have a significant influence on employee loyalty in this model.

### Correlation Coefficient and Determination

To see the relationship and influence of occupational health programs and occupational safety programs on work loyalty at PHE NSO based on correlation and determination, see Table 6.

**Table 6.** Correlation Coefficient (R) and Determination ( $R^2$ ) Values

Model Summary					
Model		R	R Square	Adjusted R Square	Standard Error of the Estimate
1	.218a	.047	.019	1.27086	1
a. Predictors: (Constant), $X_2$ , $X_1$					
b. Dependent Variable: Y					

Source: Primary Data, 2025 (processed)

Based on Table 6 above, the correlation and determination coefficients are as follows:

R (Multiple Correlation Coefficient) = 0.218. This value indicates the level of relationship (correlation) between the independent variables simultaneously (Occupational Health Program ( $X_1$ ) and Occupational Safety Program ( $X_2$ )) with the dependent variable (Work Loyalty ( $Y$ )). The value of 0.218 is considered low, which means the relationship between the two independent variables on work loyalty is weak. R Square = 0.047. The R Square value, or coefficient of determination, indicates that 4.7% of the variation in employee job loyalty ( $Y$ ) can be explained by the two independent variables, namely the occupational health program and the occupational safety program. In other words, 95.3% of the variation in job loyalty is influenced by factors other than this regression model. This indicates that this model is not strong enough to explain the dependent variable.

Adjusted R Square = 0.019. This value is an adjustment of the R Square that takes into account the number of independent variables and sample size. A value of 0.019 means that

only 1.9% of the variation in work loyalty can be explained by the model after adjustment. A lower R Square value indicates that the addition of independent variables does not significantly improve the model's strength. Standard Error of the Estimate = 1.27086. This is the average prediction error of the regression model. The smaller the value, the better the model predicts the actual data. In this case, a value of 1.27 indicates that the model's job loyalty predictions have a moderate error rate.

### Hypothesis Proof

Based on the results of multiple linear regression testing, it can be seen that the results of the hypothesis tested in this study are:

**Table 7.** T-Test Results

Coefficients <sup>a</sup>						
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	16,260	2,466		6,593	.000
	X1	.933	.198	.691	4,717	.000
	X2	-.139	.127	-.132	-1,091	.279

a. Dependent Variable: Y

Source: Primary Data, 2025 (processed)

Partial Test

#### Hypothesis 1 (H1)

The regression coefficient value (B) for X<sub>1</sub> : **0.933**

t-count: **4.717**

Sig.: **0.000**

value = **0.000** < **0.05**, so it can be concluded that:

The Occupational Health Program (X<sub>1</sub>) has a positive and significant effect on Employee Work Loyalty (Y). In other words, the better the occupational health program provided by the company, the higher the employee work loyalty. Therefore, hypothesis H1 is accepted.

#### Hypothesis 2 (H2)

The regression coefficient value (B) for X<sub>2</sub> : **-0.139**

t-count: **-1.091**

Sig.: **0.279**

value = **0.279** > **0.05**, so it can be concluded that:

The Occupational Safety Program (X<sub>2</sub>) does not have a significant effect on Employee Loyalty (Y). Although the direction of the relationship is negative, this result is not statistically strong enough to state that the occupational safety program has an effect on employee loyalty. Therefore, hypothesis H2 is rejected.

**Table 8.** F Test Results

ANOVA						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	151,310	3	50,437	7,932	.000b
	Residual	109,825	68	1,615		
	Total	115,296	70			
a. Dependent Variable: Y						
b. Predictors: (Constant), X2, X1						

### Simultaneous Test

value (Sig.) = 0.000, which is much smaller than the significance limit of 0.05 (5%). Because the Sig. value < 0.05, then  $H_0$  is rejected and  $H_1$  is accepted. This means that there is a simultaneous significant influence between the variables of the Occupational Health Program ( $X_1$ ) and the Occupational Safety Program ( $X_2$ ) on Employee Work Loyalty (Y) at PHE NSO. Thus, together the two programs are able to influence the level of employee loyalty, although partially (from the results of the previous t-test) only the Occupational Health Program shows a significant influence.

### Discussion of Research Results

The research results show that occupational health and safety programs play a strategic role in increasing employee loyalty. Employees who feel safe and protected tend to have greater trust in the company, thus fostering long-term commitment and loyalty. This finding aligns with research by Vinodkumar and Bhasi (2010), which found that good occupational safety practices increase employee trust and engagement with the organization.

Furthermore, the results of this study reinforce the findings of Astuti et al. (2021) and Suryani and Yuliana (2022), who concluded that positive perceptions of OHS contribute to positive work attitudes, including loyalty and retention intentions. In the high-risk upstream oil and gas industry, OHS programs serve not only as a risk control tool but also as a human resource management instrument that impacts organizational behavior.

### CLOSING

#### Conclusion

Based on the research results, it can be concluded that the occupational health and safety (OHS) program has a positive and significant impact on employee loyalty in the Operations Department of PT. PHE NSO Blang Lancang, North Aceh Regency. The effective implementation of an OHS program can increase employees' sense of security and trust in the company, thereby encouraging employee engagement and willingness to continue working and contributing to the organization. Thus, the research objective of analyzing the influence of the OHS program on employee loyalty has been achieved.

## Recommendations

This study has limitations because it focused on only one independent variable and was conducted in a single company work unit. Therefore, future research is recommended to develop the research model by adding other variables, such as job satisfaction, safety culture, or organizational commitment, to gain a more comprehensive understanding of the factors influencing employee loyalty. Furthermore, further research could use different methodological approaches or expand the research object to other high-risk industrial sectors to continuously increase the usefulness and generalizability of the research results.

## REFERENCES

- Anora, A. 2023. “Pelatihan Teknisi Komputer untuk Peningkatan Keterampilan Wirausaha Masyarakat.” *Jurnal Pengabdian Ekonomi dan Sosial*. Universitas Malikussaleh, Lhokseumawe.
- Anora, A., Utaminingsih, E., dan Tim. 2024. “Eka Learning Center (ELC) Tutoring Assistance through the Development of SOPs and a Transparent Bookkeeping System Based on Excel Software.” *Jurnal Pengabdian kepada Masyarakat*. Universitas Malikussaleh, Lhokseumawe.
- Anora, A. 2024. “Penguatan Manajemen Organisasi dan Tata Kelola Keuangan dalam Mendukung Kinerja Lembaga Pendidikan Nonformal.” *Jurnal Manajemen dan Kewirausahaan*. Universitas Bumi Persada, Aceh.
- Astuti, L. R., Sari, R. F., & Wulandari, D. (2021). Pengaruh Program K3 terhadap Loyalitas Karyawan di Industri Manufaktur. *Jurnal Manajemen dan Kewirausahaan*, 23(2), 135–147.
- Cropanzano, R., & Mitchell, M. S. (2020). Social Exchange Theory: An Interdisciplinary Review. *Journal of Management*, 31(6), 874–900.
- Dessler, G. (2022). *Human Resource Management* (16th ed.). Pearson Education.
- Ghozali, I., & Ratmono, D. (2022). *Analisis Multivariat dan Ekonometrika dengan EViews 10*. Semarang: UNDIP Press.
- Goetsch, D. L. (2020). *Occupational Safety and Health for Technologists, Engineers, and Managers* (9th ed.). Pearson.
- Hadiyanto, M. (2020). Hubungan K3 dan Turnover Intention pada Industri Pertambangan Batubara. *Jurnal Keselamatan dan Kesehatan Kerja*, 9(1), 50–59.
- International Labour Organization. (2021). *Global Trends in Occupational Safety and Health*. Geneva: ILO Press.
- International Labour Organization. (2021). *Guidelines on Occupational Safety and Health Management Systems*. Geneva: ILO.
- International Labour Organization. (2021). *Occupational Safety and Health: ILO Standards and Tools*. Geneva: ILO.
- Luthans, F. (2020). *Organizational Behavior: An Evidence-Based Approach* (14th ed.). New York: McGraw-Hill Education.
- Mangkunegara, A. A. A. P. (2021). *Manajemen Sumber Daya Manusia Perusahaan*. Bandung: Remaja Rosdakarya.

- Mathis, R. L., & Jackson, J. H. (2022). *Human Resource Management* (15th ed.). Cengage Learning.
- Meyer, J. P., & Allen, N. J. (2021). *Commitment in the Workplace: Theory, Research, and Application*. Thousand Oaks, CA: Sage Publications.
- Notoatmodjo, S. (2021). *Promosi Kesehatan dan Ilmu Perilaku*. Jakarta: Rineka Cipta.
- Pertamina Hulu Energi. (2023). *Annual Sustainability Report 2023*. Jakarta: PHE Press.
- Ridley, J. (2020). *Health and Safety in Brief* (3rd ed.). Routledge.
- Robbins, S. P., & Coulter, M. (2021). *Management* (15th ed.). Pearson Education.
- Robbins, S. P., & Judge, T. A. (2022). *Organizational Behavior* (19th ed.). Boston: Pearson.
- Suma'mur, P. K. (2020). *Higiene Perusahaan dan Kesehatan Kerja* (6th ed.). Jakarta: Sagung Seto.
- Suryani, D., & Yuliana, R. (2022). Keselamatan Kerja dan Loyalitas Pekerja di Proyek Konstruksi. *Jurnal Teknik Sipil*, 12(1), 22–29.
- Tarwaka. (2021). *Keselamatan dan Kesehatan Kerja: Konsep dan Aplikasinya di Tempat Kerja*. Surakarta: Harapan Press.
- World Health Organization. (2022). *Healthy Workplaces: A Model for Action*. Geneva: WHO Press.
- World Health Organization. (2022). *Occupational Health: A Manual for Primary Health Care Workers*. Geneva: WHO.