International Journal of Educational Review
Volume 5 (2) 2023, 123-134
E-ISSN 2685-709X, P-ISSN 2685-905X

Human Factors on Fire Hazards: A Correlation Study in a Vocational Education Environment

Wildan Nugraha[1], Minulya Eska Nugraha[1], Sutiyo[1], Oke Hendra[2]
[1]Politeknik Penerbangan Palembang, Indonesia, [2]Politeknik Penerbangan Indonesia, Curug, Indonesia,

Corresponding author e-mail: nugrahawildan21@gmail.com

Article History: Received on 12 August 2023, Revised on 3 November 2023, Published on 14 November 2023

Abstract: A fire disaster is one of the disasters that can harm many parties. The danger of fire can result in several threats to safety and property and can often even result in loss of life. There are various things that can start fires, namely human, equipment, and natural factors. The purpose of this study is to ascertain how human variables and fire dangers are related in vocational education environments. Negligence is a fundamental characteristic that cannot be prevented, but this can be minimized by knowing the causes of fires and steps that can be taken to reduce the potential danger of fires caused by human factors. This study includes a cross-sectional study design, a quantitative technique, and a correlational descriptive method. Data was collected by distributing questionnaires, as well as making observations as data to strengthen the results of questionnaire data analysis. The variables used in this research are Fire Fighting Knowledge (X1), Fire Incident Experience (X2), and Fire Fighting Behavior (Y). The study's findings indicate that knowledge and fire prevention behavior are significantly correlated, as are experience and fire prevention behavior, and that knowledge and experience are significantly correlated with fire prevention behavior.

Keywords: Fire Hazards, Fire Safety, Human Factors

A. Introduction

Fire is a continuous process of chemical reactions with the elements involved. These elements include the presence of fuel or objects that can burn, a fire source that can cause a fire, and the availability of sufficient oxygen for a fire to occur. There are 5 (five) products resulting from combustion, namely combustion gas, flame, heat, smoke, and reduced oxygen levels (Agustiar et al., 2019) .

A fire disaster is one of the disasters that can harm many parties, the danger of fire can result in quite a few threats to safety and property and often can even result in loss of life (Kihila, 2017). Besides that, the occurrence of a fire will directly affect existing activities, such as economic stability, which will ultimately damage and hamper the implementation of development in the country. A number of things, including people, machinery, and natural elements, can start fires (Cahyono et al., 2015).

However, handling the dangers of fire still has various obstacles that result in frequent and repeated fatal fire incidents (Rizki et al., 2017). The increase in the number of fire incidents in several areas is caused by several things, namely low public understanding and awareness of the dangers of fire, a lack of public readiness to face and deal with fires, and poor fire protection systems in buildings and structures (Aseeva et al., 2014).

Official data from the United States National Fire Protection Association (NFPA) states that in 2021, there have been around 1,353,500 fire incidents. An estimated 361,000 of these fires occurred in residential buildings, 125,500 occurred in non-residential buildings, 658,500 occurred outside buildings, and 208,500 occurred in vehicles (Badger, 2022). There was a total of around 3,800 fatalities resulting from fire incidents that year, of which 2,880 deaths occurred in residential buildings, 130 in non-residential buildings, 110 in fires outside buildings, and 680 in vehicle fires. There were at least 2 (two) of the 14 (fourteen) deadly fire and explosion disasters in 2021 that occurred in non-residential structures, where these incidents resulted in 6 (six) deaths.

Of the several causes of accidents above, human error is among the most common causes. That matter is further reinforced by an article issued by the Regional Disaster Management Agency of Indonesia (BPBD), which states that the main factor in fire incidents is limited information and knowledge about fires (Setyawan & Kartika, 2010). The next factor is human error (non-standard electrical installation, forgetting to turn off the stove when leaving, throwing cigarette butts carelessly, etc.), and the final factor is Deliberation (burning forests to clear land, burning rubbish carelessly, etc.). Therefore, a study of human factors is an approach that must be taken to minimize losses caused by fire incidents (Nuraini, 2020).

According to Gibson et al., (2013), To determine how organizational factors, system design, and human error affect risk, accident investigations are crucial sources of knowledge. The approach to error classification is termed Human Error Identification (HEI). There are three main criteria for evaluating the use of the HEI technique, namely that it can identify errors comprehensively, can be used accurately to identify the potential for human error, and can document the evaluation that has been carried out for long-term purposes (Maulana, 2016).

Previous studies conducted by Syam et al., (2023) concluded that knowledge and action are related to preparedness among workers at Undata Hospital, Central Sulawesi Province. Attitudes and training are separate from the preparedness of workers at Undata Hospital, Central Sulawesi Province.

Human resources are quite an essential part of achieving organizational goals, whether it is a large company or a small company (S. Sari et al., 2020). In achieving organizational goals, one of the critical things for company leaders to do to prevent fires is to have the effect of complying with work regulations and maintaining the behavior of employees so that they are willing to work according to the organization's expectations (Vlachopoulos, 2021).

Palembang Aviation Polytechnic is a vocational high school under the Ministry of Transportation (Nugraha et al., 2020). Following its function as a school that implements vocational education, because this education focuses practical knowledge that can be immediately implemented in the workplace, Palembang Aviation Polytechnic produces resources that are ready for the workplace, saving your time while learning specialized knowledge (Amalia, 2021).

Negligence is a fundamental characteristic that cannot be prevented, but this can be minimized by knowing the causes of fires and steps that can be taken to reduce the potential danger of fires caused by human factors (I. Y. Sari et al., 2021). Therefore, the author is interested in identifying human error from fire incidents by raising the research theme "Human Factors on Fire Hazards: A Correlation Study in a Vocational Education Environment."

B. Methods

This study includes a cross-sectional study design, a quantitative technique, and a correlational descriptive method. Data was collected by distributing questionnaires, as well as making observations as data to strengthen the results of questionnaire data analysis (Cahyadi et al., 2021). The author uses cross-sectional research by collecting data simultaneously over a certain period. Approaches that can be used in descriptive analysis include presenting data through tables, graphs, diagrams, calculating mode, median, mean, standard deviation, and percentage calculations, as well as calculating class length formulas to determine criteria intervals (Amalia et al., 2022).

This research observes the independent and dependent variables at the same time. The purpose of this study is to determine how the independent and dependent variables relate to one another. The variables used in this research are Fire Fighting Knowledge (X1), Fire Incident Experience (X2), and Fire Fighting Behavior (Y). The instrument used in the research was a structured questionnaire with a measurement scale of 1 – 5 from strongly disagree to agree strongly (Masito et al., 2022).

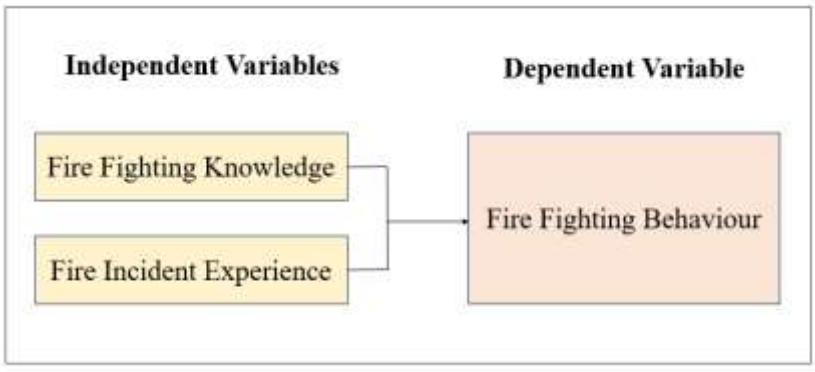

Figure 1. Conceptual Framework

The 143 participants in this study were all employees of Palembang Aviation Polytechnic. The number of samples in this study was 30 employees still actively working at the Palembang Aviation Polytechnic. The researcher used sampling using

the grab sampling method in this research, where the researcher gave each employee the same rights to have the opportunity to be sampled.

C. Results and Discussion

Results

The data obtained in this research will be processed using several criteria before concluding. The first stage is to carry out a validity test. A validity test determines whether or not a questionnaire is valid by demonstrating the degree to which the instrument being used measures the item being measured (S et al., 2020). Validity testing in this research used IBM SPSS series 26 software. Validity test results for the Knowledge Variable (X1) on nine questions, obtained the following results:

Table 1. X1 Validity Test Results

Variable	Significant Value	Results	Information
X1.1	0.014	Less than 0.05	Valid
X1.2	0.000	Less than 0.05	Valid
X1.3	0.003	Less than 0.05	Valid
X1.4	0.004	Less than 0.05	Valid
X1.5	0.005	Less than 0.05	Valid
X1.6	0.002	Less than 0.05	Valid
X1.7	0.005	Less than 0.05	Valid
X1.8	0.002	Less than 0.05	Valid
X1.9	0.006	Less than 0.05	Valid

Nine questions from the knowledge variable after being processed using IBM SPSS series 26 software have a significant value above 0.05, so it can be concluded that nine questions from the knowledge variable are valid.

Next are the Experience Variable Validity Test Results (X2) on seven questions. The following results were obtained:

Table 2. X2 Validity Test Results

Variable	Significant Value	Results	Information
X2.1	0.000	Less than 0.05	Valid
X2.2	0.002	Less than 0.05	Valid
X2.3	0.000	Less than 0.05	Valid
X2.4	0.003	Less than 0.05	Valid
X2.5	0.008	Less than 0.05	Valid
X2.6	0.002	Less than 0.05	Valid
X2.7	0.007	Less than 0.05	Valid

Seven questions from the experience variable after being processed using IBM SPSS series 26 software have a significant value above 0.05, so it can be concluded that seven questions from the experience variable are valid.

And finally, in the validity test, the results of the validity test of the Behavioral Variable (Y) on seven questions obtained the following results:

Table 3. Y Validity Test Results

Variable	Significant Value	Results	Information
Y1	0.000	Greater than 0.05	Valid
Y2	0.000	Greater than 0.05	Valid
Y3	0.000	Greater than 0.05	Valid
Y4	0.005	Greater than 0.05	Valid
Y5	0.000	Greater than 0.05	Valid
Y6	0.009	Greater than 0.05	Valid
Y7	0.000	Greater than 0.05	Valid

Seven questions from the fire prevention behavior variable after being processed using IBM SPSS series 26 software have a significant value above 0.05, so it can be concluded that seven questions from the fire prevention behavior variable are valid.

The next stage is carrying out reliability testing. Reliability testing is an instrumental decision or reliability in evaluating what is being evaluated, which means that you will get relatively the same results every time you use an evaluation tool (Liston & Brouwer, 1996). Reliability testing in this research used IBM SPSS series 26 software. Reliability Test Results for the Fire Fighting Knowledge Variable (X1) are shown in the table below.

Table 4. X1 Reliability Statistics

Cronbach's Alpha	N of Items
.688	9

To tests the reliability of the knowledge variable from 9 items, it produces a Cronbach's alpha value of 0.688, more significant than 0.6, so the question can be declared reliable.

Reliability Test Results for Experience Variables (X2) obtained the following results:

Table 5. X2 Reliability Statistics

Cronbach's Alpha	N of Items
.624	7

To test the reliability of the experience variable from 7 items, it produces a Cronbach's alpha value of 0.624, more significant than 0.6, so the question can be declared reliable.

Behavioral Variable Reliability Test Results (Y) obtained the following results:

Table 6. Y Reliability Statistics

Cronbach's Alpha	N of Items
.778	7

To test the reliability of the behavioral variable, which consists of 7 items, it produces a Cronbach's alpha value of 0.778, which is greater than 0.6, so the question can be declared reliable.

Data Description

- Knowledge

Table 7. X1 Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
X1.1	27	1.00	4.00	2.0000	.73380
X1.2	27	1.00	4.00	1.8148	.92141
X1.3	27	1.00	4.00	3.0741	.67516
X1.4	27	1.00	3.00	2.3704	.56488
X1.5	27	1.00	4.00	2.4074	.79707
X1.6	27	1.00	4.00	1.9259	1.14105
X1.7	27	1.00	4.00	1.7407	1.02254
X1.8	27	1.00	4.00	2.1481	.71810
X1.9	27	1.00	3.00	1.7407	.59437
Valid N (listwise)	27				

The description of data from 27 respondents for the knowledge variable has a minimum value of 1.00 and a maximum value of 4.00. The most considerable mean value is 2.4074, and the smallest is 1.7407. The smallest standard deviation value is 0.59437, and the highest is 1.14105.

- Experience

Table 8. X2 Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
X1.1	27	1.00	4.00	2.0000	.73380
X1.2	27	1.00	4.00	1.8148	.92141
X1.3	27	1.00	4.00	3.0741	.67516
X1.4	27	1.00	3.00	2.3704	.56488
X1.5	27	1.00	4.00	2.4074	.79707
X1.6	27	1.00	4.00	1.9259	1.14105
X1.7	27	1.00	4.00	1.7407	1.02254
X1.8	27	1.00	4.00	2.1481	.71810
X1.9	27	1.00	3.00	1.7407	.59437
Valid N (listwise)	27				

To describe the data from 27 respondents for the experience variable, the minimum value for the knowledge variable was 1.00, and the maximum value was 4.00. The most considerable mean value is 3.0741, and the smallest is 1.7407. The smallest standard deviation value is 0.59437, and the highest is 1.14105.

- Behavior

Table 9. Y Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Y1	27	1.00	3.00	1.3704	.62929
Y2	27	1.00	3.00	1.2593	.59437
Y3	27	1.00	3.00	1.1852	.48334
Y4	27	1.00	2.00	1.1111	.32026
Y5	27	1.00	2.00	1.1852	.39585
Y6	27	1.00	4.00	1.2593	.65590
Y7	27	1.00	3.00	1.5185	.75296
Valid N (listwise)	27				

To describe the data from 27 respondents for the fire management behavior variable, the minimum value for the knowledge variable was 1.00, and the maximum value was 4.00. The most considerable mean value is 1.5185, and the smallest is 1.1111. The smallest standard deviation value is 0.32026, and the highest is 0.75296. The next stage is to carry out the Classical assumption test, which in the Classical assumption tests consists of normality tests, linear tests, and multicollinearity tests. The first step at this stage is to carry out a Normality test. The normality test is carried out to check whether our research data comes from a population with a normal distribution.

Table 10. One-Sample Kolmogorov-Smirnov Test

			Unstandardized Residual
N			27
Normal Parameters[a,b]	Mean		.0000000
	Std. Deviation		2.07151384
Most Extreme Differences	Absolute		.217
	Positive		.217
	Negative		-.133
Test Statistic			.217
Asymp. Sig. (2-tailed)			.002[c]
Monte Carlo Sig. (2-tailed)	Sig.		.133[d]
	99% Confidence Interval	Lower Bound	.125
		Upper Bound	.142

a. Test distribution is Normal.
b. Calculated from data.
c. Lilliefors Significance Correction.
d. Based on 10000 sampled tables with starting seed 299883525.

For the normality test, a significant value of 0.133 was obtained, greater than 0.05, so it can be concluded that the data is standard. The second step is to carry out a Linear Test, where the results are shown in the table below.

Table 11. X1-Y Anova Table

			Sum of Squares	df	Mean Square	F	Sig.
Y total * X1 total	Between Groups	(Combined)	110.917	12	9.243	2.030	.104
		Linearity	35.563	1	35.563	7.810	.014
		Deviation from Linearity	75.353	11	6.850	1.504	.233
	Within Groups		63.750	14	4.554		
	Total		174.667	26			

For the linear test for the relationship between the knowledge variable and the fire management experience variable, a significant value of 0.233 was obtained, greater than 0.05, so it can be concluded that the data has a linear model.

Table 12. X2-Y Anova Table

			Sum of Squares	df	Mean Square	F	Sig.
Y total * X2 total	Between Groups	(Combined)	62.050	9	6.894	1.041	.449
		Linearity	5.790	1	5.790	.874	.363
		Deviation from Linearity	56.260	8	7.033	1.062	.432
	Within Groups		112.617	17	6.625		
	Total		174.667	26			

For the linear test for the relationship between the experience variable and the fire prevention behavior variable, a significant value of 0.432 was obtained, greater than 0.05, so it can be concluded that the data has a linear model.

The next step is the Multicollinearity test. To determine whether there was a correlation between the independent variables in the regression model, the multicollinearity test was run (Sriningsih et al., 2018). A perfect linear relationship between some or all of the variables that describe the regression model is referred to as multicollinearity (Wijaya Putra et al., 2023).

Table 13. Multicollinearity Test Results

Coefficients[a]								
		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
Model		B	Std. Error	Beta	T	Sig.	Tolerance	VIF
1	(Constant)	3.463	2.110		1.641	.114		
	X1 Total	.732	.208	1.111	3.511	.002	.266	3.765
	X2 Total	-.718	.295	-.770	-2.434	.023	.266	3.765

a. Dependent Variable: YTOTAL

The tolerance value is 0.266> 0.1, so multicollinearity does not occur

The VIF value is 3.765 < 10.00, so there is no multicollinearity

For the multicollinearity test, a tolerance value of 0.266 was obtained, which was more significant than 0.1, and a VIF value of 3.765 was smaller than 10.00, so it can be concluded that there were no symptoms of multicollinearity. The final step is to carry out a hypothesis testing, Hypothesis testing processing uses IBM SPSS series 26 software. The results are as follows:

Table 14. Hypothesis testing Coeficient

Coefficients[a]						
		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	3.463	2.110		1.641	.114
	X1 total	.732	.208	1.111	3.511	.002
	X2 total	-.718	.295	-.770	-2.434	.023

a. Dependent Variable: Y Total

The significant value is 0.002 < 0.05, so H_0 for the knowledge on behavior variable is rejected, and Ha is accepted.

The significant value is 0.023 < 0.05, so H_0 for the experience variable regarding behavior is rejected, and Ha is accepted.

Table 15. Hypothesis testing Anova

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	63.096	2	31.548	6.786	.005[b]
	Residual	111.570	24	4.649		
	Total	174.667	26			

a. Dependent Variable: Y total
b. Predictors: (Constant), X2 total, X1 total

The significant value is 0.005 < 0.05, so H_0 for the knowledge and experience variables on behavior is rejected, and Ha is accepted.

Discussion

There are three hypothesis tests in this research: the T-test and the F-test. The T-test is partial, and the F-test is simultaneous. To determine the relationship between the knowledge variable and the fire prevention behavior variable, using the T-test, it obtained a significant value of 0.002, which is smaller than 0.05, so H_0 is rejected, so Ha is accepted, so it can be concluded that there is a significant relationship between knowledge and fire prevention behavior. To find out the relationship between the experience variable and the fire prevention behavior variable, using the T-test, it obtained a significant value of 0.023, which is smaller than 0.05, so H_0 is rejected, so Ha is accepted, so it can be concluded that there is a significant relationship between experience and fire prevention behavior. To determine the relationship between the knowledge and experience variables and the fire prevention behavior variable, using the F-test, a significant value of 0.005 is smaller than 0.05, so H_0 is rejected, so H_a is accepted, so it can be concluded that there is a significant relationship between knowledge and experience and fire prevention behavior.

Previous research is the researcher's effort to look for comparisons and find new inspiration for further research. Apart from that, previous studies help research position the research and show the originality of the research. (Triono R, 2019). Based on the results of research conducted by Nurwulandari (2016) concluded that areas with a fire history could increase the community's ability to mitigate fire disasters. This conclusion is in line with the conclusions produced by this research. One of the things that differentiates it is that the focus in previous research was preventing fire hazards in densely populated settlements, whereas, in this research, the focus is on aspects that affect a person's behavior in dealing with fires, especially in Education areas, in this case, the Palembang Aviation Polytechnic environment.

D. Conclusion

Based on research conducted by the author, it can be concluded that the relationship between knowledge and experience and fire prevention behavior is as follows: the first conclusion is that there is a significant relationship between knowledge and fire prevention behavior. The second is that there is a significant

relationship between experience and fire prevention behavior. The third is that there is a significant relationship between knowledge and experience and fire prevention behavior. The author provides suggestions, including Providing educational knowledge related to fire management, then providing fire simulations to the community so that people have experience in handling fires, and finally, creating workshops related to behavior that must be known and practiced in dealing with the dangers of fire.

E. Acknowledgement

We would like to express our gratitude to the Palembang Aviation Polytechnic Director as well as all other participants in this research endeavor.

References

Agustiar, A. B., Mustajib, Amin, F., & Hidayatullah, A. F. (2019). Forest and Land Fires from an Environmental Ethics Perspective. *Profetika*, *20*(2).

Amalia, D., Cahyono, D., Septiani, V., & Kristiawan, M. (2022). UX test in the academic information system of vocational higher education. *JPGI (Jurnal Penelitian Guru Indonesia)*, *7*(1). https://doi.org/10.29210/021583jpgi0005

Amalia, D., & Nugraha, W. (2021). *A Study of Student Learning Attitude Towards E-Learning In The Pandemic Era*. *6*(2), 16.

Aseeva, R., Serkov, B., & Sivenkov, A. (2014). a116 - Fire Behavior and Fire Protection in Timber Buildings. *Springer Series in Wood Science*.

Badger, S. G. (2022). *Catastrophic Multiple-Death Fires and Explosions in the United States in 2021*.

Cahyadi, C. I., Daryanti, Y., & Bahrawi, A. (2021). Simple Design and Build Automatic Transfer Switch Generator Set On Airport Power Station With Failurea Indicator Protection. *International Journal of Educational Review*, *3*(2). https://doi.org/10.33369/ijer.v3i2.19681

Cahyono, S. A., P Warsito, S., Andayani, W., & H Darwanto, D. (2015). Factors Influencing Forest Fires in Indonesia and Their Policy Implications. *Jurnal Sylva Lestari*, *3*(1). https://doi.org/10.23960/jsl13103-112

Gibson, W. H., Mills, A. M., Smith, S., & Kirwan, B. K. (2013). Railway action reliability assessment, a railway-specific approach to human error quantification. *Rail Human Factors: Supporting Reliability, Safety and Cost Reduction*. https://doi.org/10.1201/b13827-89

Kihila, J. M. (2017). Fire disaster preparedness and situational analysis in higher learning institutions of tanzania. *Jamba: Journal of Disaster Risk Studies*, *9*(1). https://doi.org/10.4102/jamba.v9i1.311

Liston, R. A. L., & Brouwer, B. J. (1996). Reliability and validity of measures obtained from stroke patients using the balance master. *Archives of Physical Medicine and Rehabilitation*, *77*(5). https://doi.org/10.1016/S0003-9993(96)90028-3

Masito, F., Oka, I. G. A. A. M., Cahyadi, C. I., Komalasari, Y., Anes, A. M., & Risdianto, E. (2022). Scientific Argumentation Skills Through The Rasch Model on Analysis

of Survey Data on The Importance of Aviation Vocational Education in Indonesia. *Journal of Innovation in Educational and Cultural Research*, *3*(3). https://doi.org/10.46843/jiecr.v3i3.178

Maulana, F. I. (2016). *Analysis of the Human Error Identification Method for the Causes of Train Accidents Related to Train Travel Organizers: Literature Study*. *24*(7), 1091–1106.

Nugraha, W., Amalia, D., Soleh, A. M., Masitoh, F., & Abdullah, A. (2020). Safety Management System Training for Gusti Syamsir Alam Kotabaru Airport Management Unit Employees. *Darmabakti: Jurnal Inovasi Pengabdian Dalam Penerbangan*, *1*(1), 19–29. https://doi.org/10.52989/darmabakti.v1i1.9

Nuraini, D. A. (2020). Relationship between Work Environment, Work Permit, Human Factors, and Work Accidents: Conceptual Approach. *Jurnal Ilmu Manajemen*, *6*(2).

Nurwulandari, F. S. (2016). Study of Fire Disaster Mitigation in Dense Settlements (Case Study: Taman Sari Village, Bandung City). *Infomatek*, *18*(1).

Rizki, R. S., Sara, I. D., & Gapy, M. (2017). Fire Detection System in Buildings Based on Programmable Logic Controller (PLC). *Jurnal Karya Ilmiah Teknik Elektro*, *2*(3).

S, N. E., Arafat, Y., & Mulyadi, M. (2020). The Effect Of Capacity Building And School Principal Leadership Towards Teachers' Performance. *International Journal of Educational Review*, *2*(2). https://doi.org/10.33369/ijer.v2i2.10921

Sari, I. Y., Fitria, H., & Puspita, Y. (2021). The Influence of Managerial Skill, Principal Leadership Style and Compensation toward Teacher's Performance. *International Journal of Educational Review*, *3*(2). https://doi.org/10.33369/ijer.v3i2.15767

Sari, S., Zaman, A. N., Waluyo, M. R., & Nurfajriah. (2020). Analysis of factors causing accidents in the construction sector at PT.X. *Jurnal Kesehatan Masyarakat Dan Lingkungan Hidup*, *4002*(2004), 72–78.

Setyawan, A., & Kartika, E. W. (2010). *Exploratory Study of the Level of Awareness of High-Storied Building Occupants Regarding Fire Dangers: Case Study Di*.

Sriningsih, M., Hatidja, D., & Prang, J. D. (2018). Handling Multicolinearity Using Main Component Regression Analysis In The Case Of Rice Imports In Sulut Province. *Jurnal Ilmiah Sains*, *18*(1). https://doi.org/10.35799/jis.18.1.2018.19396

Syam, S., Arwan, Syahrir, M. S., Satria, M. A., Ashari, M. R., & Lestari, A. (2023). Nurse Behavior in Fire Disaster Preparedness at Undata Hospital : *Media Publikasi Promosi Kesehatan Indonesia (MPPKI)*, *6*(1), 162–166. https://doi.org/10.56338/MPPKI.V6I1.2870

Triono R. (2019). Implementation of the Policy on Changes in Traditional Market Spatial Planning in Maron District, Probolinggo Regency. *Reposity Universitas Panca Marga Probolinggo*.

Vlachopoulos, D. (2021). Organizational change management in higher education through the lens of executive coaches. *Education Sciences*, *11*(6). https://doi.org/10.3390/educsci11060269

Wijaya Putra, B., Eska Nugraha, M., Sakti Nugraha, G., & Wulansari, A. (2023). Learning Difficulties of Cadets in Engineering Mathematics Learning on Problem Solving Skills. *Jurnal Penelitian*, *7*(4). https://doi.org/10.46491/jp.v7i4.1183