

The Effect of Occupational Health and Safety, Work Accidents and Skills of Construction Workers On the Quality of Life of Construction Industry Workers In Indonesia

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Abstract

In Indonesia, the construction and maintenance of government buildings will continue so that every construction company that works with the Indonesian government must follow the rules set by the government in the construction legislation in Indonesia so that the results to be achieved can be in accordance with what is expected. The low welfare and quality of life of construction workers makes the quality of the workforce in Indonesia also low, one of the reasons is due to the high cost of access and the lack of time and opportunities for these non-formal workers to get education and training in order to improve their skills / skills in the construction sector. Occupational safety and occupational health (K3) construction in its application in Indonesia by construction companies is still not well implemented This research was conducted to see occupational safety and health (K3) construction, work accidents and construction workers' skills have a major influence on the quality of life of workers. The method used is a literature study, data collection is in the form of a survey to construction industry workers in West Java,. Overall, this section discusses research findings that have been analyzed using descriptive statistical analysis and inferential statistical analysis. Descriptive statistical analysis that has been carried out found that workers' perspectives on occupational health, occupational accidents, worker skills and workers' quality of life are at a high level. Meanwhile, the employee's perspective on job security is at a high enough level. Furthermore, the One-Way ANOVA analysis also shows that there is no influence of age, experience and type of construction work (structure, architecture, mechanical electricity) on the quality of life of construction workers in Indonesia. Multiple regression analysis also found that occupational accidents and occupational health have an effect on the improvement of construction workers' skills. This analysis also shows that workers' health and worker skills affect the quality of life of construction workers. Pearson's correlation analysis also found that the relationship between the variables of occupational health factors, worker skills and work accidents on the quality of life of construction workers and the strength of the relationship was weak.

Keywords: Occupational health and safety • Work accidents • Worker skills • Worker quality of life • Construction workers

Introduction

Indonesia is a country that has a large population, this is a gift that is not owned by every country. The large number of people accompanied by the large number of workers who need work for a living make this two points of the sword that must be considered.

The low welfare and quality of life of non-formal workers in the construction sector is a part that must be of concern to all parties engaged in the construction sector.

One important aspect that construction management must pay attention to in order to regulate a lot of construction workplaces so that it can be an advantage in construction is the aspect of occupational safety and health which is one of the reference units for construction companies, namely Occupational Health and Safety Assessment.

In its implementation in Indonesia, the Indonesian government has ratified the Occupational Health and Safety Assessment into laws and regulations, namely in the form of occupational safety and occupational health (K3) construction. According to Yuliansyah [1] occupational health and safety (K3) is an activity that guarantees the creation of safe working conditions, avoids physical and mental disorders through coaching and training, direction, and control of the implementation of duties of employees and providing assistance according

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to the rules. applicable, both from government agencies and companies where they work. One of the latest regulations issued by the Indonesian government in order to regulate the implementation of K3 in construction activities is PUPR Minister No.2 of 2018 this is the latest reference in implementing K3 in Indonesia. Occupational safety and occupational health (K3) construction in its application in Indonesia by construction companies are still not implemented properly. Many factors cause it, one of which is the non-compliance of field workers in implementing the K3 management system that has been established by the construction company so that frequent work accidents or work diseases that occur in a bad work environment can result in death, or employees may experience temporary disability or illness and cannot work, then the employee concerned is no longer able to work properly or the level of work productivity will decrease compared to healthy time.

This research is a research that looks for the influence of occupational safety and health, work accidents and construction worker skills on the quality of life of construction industry workers in Indonesia. The form of research can be described as follows:

The hypothesis of this research is to determine the assumption of the relationship between the independent and dependent variables, the researcher puts forward the following hypothesis:

HO1 There is no significant differences in the aspects of safety, health, accidents, skills and quality of life among construction workers based on age. .

HO2 There is no significant differences in the aspects of safety, health, accidents, skills and quality of life among construction workers based on work experience.

HO3 There are no significant differences in the aspects of safety, health, accidents, skills and quality of life among construction workers based on the type of construction work.

HO4 There are no significant differences in the aspects of safety, health,

accidents, skills on the quality of life among construction workers based on the income of construction workers per week.

H05 There is no significant effect between safety, health, accidents, skills, the quality of life among construction workers.

Methods

Research design refers to planning in selecting the research population, research locations and data collection procedures [2]. This research is a survey research using quantitative data.

In this study, the research sample of Morgan was used to take a sample of 450 people.

Sampling is a research strategy that allows researchers to obtain information about a population from several individuals who are members of that population [3] (Figures 1-3).

The research instrument used was distributing questionnaires to the predetermined 450 respondents.

The preparation of this questionnaire instrument is based on a combination of theories, models and adaptation of questionnaires related to Occupational Safety and Health (K3) Construction, Work Accidents, Skills and Quality of Life factors. Theories and models used in the construction of this instrument are the Occupational Safety and Health (K3) construction model and QOL Ventegodt Theory [4].

To measure the response of the respondents using a Likert point 5 scale (Table 1).

The results of the collected data from respondents were analyzed by using descriptive statistics to comprehensively view and describe the respondents, such as gender, ethnicity, socio-economics and even academics [5]. To find the assumptions of each variable, whether it is dependent or independent, two types are used

Bentuk penelitian dapat digambarkan sebagai berikut.

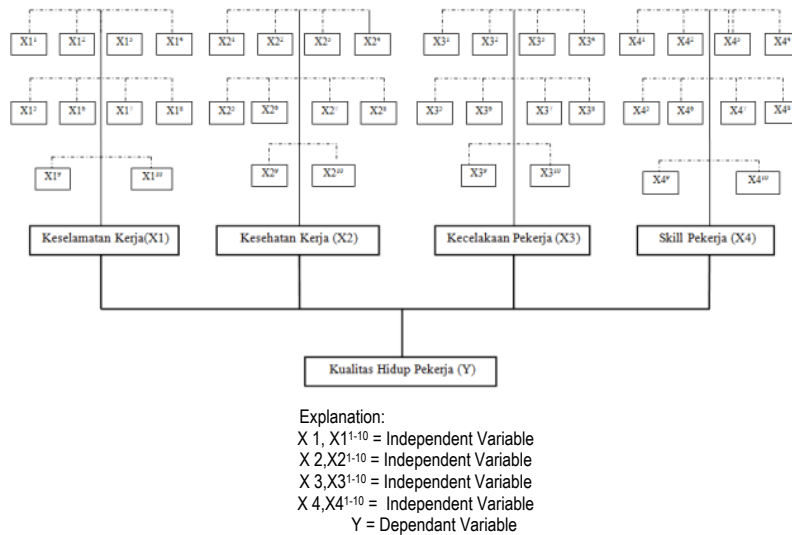


Figure 1. Form of Research.

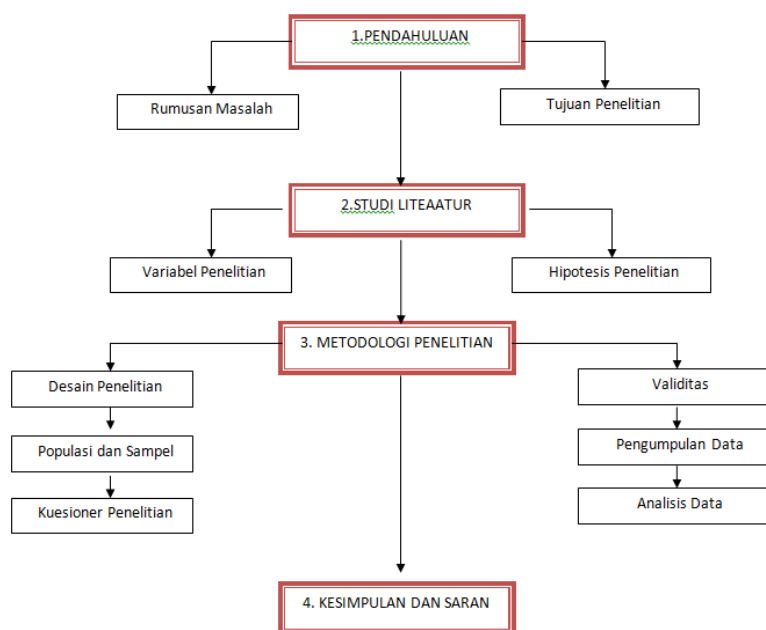


Figure 2. Research Design.

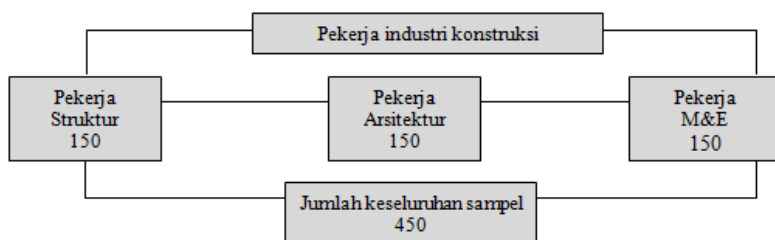


Figure 3. Research Sample.

Table 1. Likert point 5 scale.

Responds	Scale
Strongly disagree	1
Disagree	2
Neither agree or disagree	3
Agree	4
Strongly agree	5

Explanation

ANOVA test to identify differences to find out whether there are differences in occupational safety and health aspects, work accidents, and construction workers' skills on quality of life based on age, experience and type of work [6] (Table 2).

Multiple regression analysis to determine the contribution of occupational safety and health, work accidents and skills to the quality of life of construction workers in Indonesia. Multiple regression analysis was also conducted to identify the contribution of occupational safety and health, work accidents and skills to the quality of life of construction workers in Indonesia. The multiple regression formula is as follows:

$$Y = a + b_1x_1 + b_2x_2 + \dots + b_nx_n +$$

Findings and Discussion

The collected data were analyzed using descriptive and inferential statistical analysis (Table 3).

The Effect of Age, Experience and Type of Work on the Quality of Life of Construction Workers in Indonesia.

- The Effect of Age on the Quality of Life of Construction Workers in Indonesia

Using One-Way ANOVA and conducting the Levene test to determine the variance-covariance homogeneity matrix explains that age has no effect on the quality of life of construction workers in Indonesia, $F(2,447) = 0,812$ dan $p = 0,445$ ($p > 0,05$).

- The Effect of Experience on the Quality of Life of Construction Workers in Indonesia

Stating that experience has no effect on the quality of life of construction workers in Indonesia, $F(2,447) = 0,266$ and $p = 0,766$ ($p > 0,05$).

- The Influence of Type of Work on the Quality of Life of Construction Workers in Indonesia

The type of work does not affect the quality of life of construction workers in Indonesia, $F(2,447) = 2,916$ and $p = 0,055$ ($p > 0,05$).

- Pengaruh Penghasilan terhadap Kualitas Hidup Pekerja Konstruksi di Indonesia

Stating that income does not affect the quality of life of construction workers in Indonesia, $F(2,447) = 1,609$ and $p = 0,201$ ($p > 0,05$).

Table 2. Explanation.

Y	Dependent Variable
a	Constant
b1,b2,b3	Regression Coefficient Value
x1,x2,x3	Independent Variable

Table 3. Demographic Profile.

Profile	Demographic	Frequency	Percentage
Age	19 – 25	85	18.9
	26 – 31	177	39.3
	32 <	188	41.8
Experience	< 5 Year	255	56.7
	6 – 10 Year	107	23.8
	>10 Year	88	19.6
Type of Work	Architecture	150	33.3
	Mechanic	150	33.3
	Structure	150	33.3
Effects	<1 Million	307	68.2
	1 – 3 Million	110	24.4
	>3 Million	33	7.3

The Effect of Occupational Safety, Health and Work Accidents on Increasing Skills for Construction Workers.

By using multiple aggression analysis. Stating that work accidents affect 8.5 percent ($B=0.213$, $t = 5,261$, $sig=0,000$ and $R^2=0.085$) and occupational health affects 3.4 percent ($B=0.141$, $t=4,150$, $sig=0,000$ and $R^2=0.199$) to improve construction worker skills.

The Effect of Work Safety, Occupational Health, Work Accidents and Worker Skills on the Quality of Life of Construction

It shows that work safety with ($B= -0.001$, $t= -0.021$, $sig=0.983$), occupational health with ($B=0.309$, $t=6.899$, $sig=0.000$), work accidents with ($B=0.089$, $t=1.654$, $sig=0.099$) and Worker Skills with ($B=0.0235$, $t=3.826$, $sig=0.000$). For all sig numbers with a value of more than 0.05, this indicates that the independent variable has no effect (safety and accidents) on the variable quality of life of construction workers. Meanwhile, the sig variable with a value below 0.05 indicates that the independent variable has an effect (Health and Skills) has an effect on the quality of life for construction workers.

The Relationship of Work Safety Variables to the Quality of Life of Construction Workers

Pearson correlation analysis with a value of $r=-0.007$, $sig=0.890$, $p>0.05$. This shows that there is no relationship between work safety factor variables and the quality of life of construction workers.

The Relationship of Occupational Health Variables to the Quality of Life of Construction Workers

Pearson correlation analysis with a value of $r=0.377$, $sig=0.000$, $p<0.05$.

This shows that there is a relationship between occupational health factor variables with the quality of life of construction workers and the strength of the relationship is weak [7].

The Relationship of Work Accident Variables to the Quality of Life of Construction Workers

Pearson correlation analysis with a value of $r=0.208$, $\text{sig}=0.000$, $p<0.05$. This shows that there is a relationship between work accident factor variables and the quality of life of construction workers and the strength of this relationship is weak [8].

The Relationship of Work Accident Variables to the Quality of Life of Construction Workers.

Pearson correlation analysis with a value of $r=0.208$, $\text{sig}=0.000$, $p<0.05$. This shows that there is a relationship between work accident factor variables and the quality of life of construction workers and the strength of this relationship is weak [9].

The Relationship of Worker Variable Skills to the Quality of Life of Construction Workers.

Pearson correlation analysis with a value of $r=0.277$, $\text{sig}=0.000$, $p<0.05$. This shows that there is a relationship between the variable worker skills factor and the quality of life of construction workers and the strength of this relationship is weak [10].

Relationship of Work Safety, Occupational Health, Work Accidents, Occupational Health and Worker Skills on Worker Quality of Life

This relationship shows the findings of the Pearson correlation analysis for occupational health (value $r=0.377$, $\text{sig}=0.000$), worker skills (value $r=0.277$, $\text{sig}=0.000$), work accidents (value $r=0.208$, $\text{sig}=0.000$) and work safety (the value of $r=-0.007$, $\text{sig}=0.890$) [11]. This shows that there is a relationship between occupational health factors, worker skills and work accidents with the quality of life of construction workers and the strength of the relationship is weak. However, there is no relationship between work safety factor variables and the quality of life of construction workers [12].

Conclusion

This study involved a total of 450 respondents of construction workers in Indonesia. This study discusses findings that have been analyzed using descriptive statistical analysis, One-Way Analysis of Variance (ANOVA), Analysis of Correlation Techniques and multiple regression analysis. Descriptive statistical analysis that has been conducted found that workers' perspectives on occupational health, occupational accidents, worker skills and workers' quality of life are at a high level. Meanwhile, the employee's perspective on job security is at a high enough level. Furthermore, the One-Way ANOVA analysis also shows that there is no influence of age, experience and type of construction work (structure, architecture, mechanical electricity) on the quality of life of construction workers in Indonesia. Multiple regression analysis also found that occupational accidents and occupational health have an effect on the improvement of construction workers' skills. This analysis also shows that the health of workers and workers' skills affects the quality of

life of construction workers. Pearson correlation analysis also found that the relationship between the variables of occupational health factors, workers' skills and work accidents on the quality of life of construction workers and the strength of the relationship was weak. However, there is no relationship between work safety factor variables and the quality of life of construction workers.

References

1. Elphiana EG, Yuliansyah MD and Kosasih MZ. "The Effect of Occupational Safety and Health on Employee Performance of Pt. Pertamina Ep Asset 2 Prabumulih." *Scientific J Bus App Manag* (2017).
2. Gay LR and Airasian P. "Educational research: competencies for analysis and application. Upper Saddle River, New Jersey: Pearson Education Inc." (2003).
3. Coakes SJ. *SPSS Analysis without anguish*. Australia: Wiley & Sons Ltd. Coffman, Commonwealth Secretariat" (1999).
4. Majid Konting M. "Methods of educational inquiry. Kuala Lumpur: Language and Library Council" (2000).
5. Sepang BWJ, TjakraJE, Langi CH and Walangitan DRO "Occupational Health and Safety (K3) Risk Management in the Construction Project of the Manado Orlens Fashion Shophouse." *J Civil Static* (2013).
6. Catarina C, Paramita P and Wijayanto A "The Effect of Occupational Safety and Health on Employee Performance at Pt. Pln (Persero) Apj Semarang." *J Bus Admin* (2012).
7. Dameyanti S and Walangitan P. "Implementation of Occupational Safety and Health (K3) in the Project in Bitung City." *J Civil Stat* 2(2014): 124-130.
8. Gay LR. "Educational research: competencies for analysis and application. Upper Saddle River, New Jersey: Prentice-Hall Inc" (1996).
9. Widari LA and Zulfhazli MR. "Analysis of the Effect of Occupational Safety and Health (K3) on Construction Worker Performance." *Teras J* (2018).
10. Hair JF, Black WC, Babin BJ and Anderson RE. "Multivariate data analysis. Upper Saddle River, NJ: Prentice Hall." (1998).
11. Saloni W, Ferida Y. Analysis of Occupational Health and Safety (K3) Factors that Significantly Affect Work Accidents in the Student Castle Apartment Construction Project." *Industry Spectrum* 14(2017): 1-108.
12. Putut H. "Condition Analysis and Hazard Control in Vocational High School Workshops/Laboratories." *J TechnoVocational Education* (2011).

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