

## Conference Paper

# Relations Characteristic of Workers and Personality Type with Unsafe Action on Stevedore at Container Terminal X

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## Abstract

The port activity in Indonesia is directly proportional to the increased risk of the accident in port. Loading and unloading activity in port was dominated by human labor. Some studies showed that the human factor had a significant contribution to the accident through unsafe actions in working. The risky activity was influenced by an intrinsic factor such as characteristic of workers and personality type. This research aimed to know which element in the characteristics of workers and personality type (introverted and extrovert) that tended to be unsafe action. This research used observational analytic research with a cross-sectional study with total sample of 60 people (stevedores). The data used was primary and secondary data through field observation and the interview. Data analysis technique in this research was the use of cross-tabulating. To see the relation between variables used *spearman* test correlation for the characteristics of workers, and a *chi-square test* for personality type, the data was processed by SPSS applications. The results showed that characteristic workers and personality type and unsafe action were a relatively weak, but there was one a variable that had relations strong enough, namely variable knowledge by a correlation coefficient of (0.417). It needs evaluation for terminal container X to reduce the risk of the accident caused by unsafe actions.

**Keywords:** Unsafe actions; characteristic of workers; personality type; stevedore; loading and unloading

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Received: 26 December 2018

Accepted: 23 February 2019

Published: 7 March 2019

Publishing services provided by  
Knowledge E

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the responsibility of the 2nd  
International Meeting of Public  
Health 2016 Conference  
Committee.

## 1. Introduction

In the early 21st century the number of accidents in the world is in the alarming situation. According to the International Labour Organization (ILO), every year two million people were dead and 270 million people were injured as a result of an occupational accident in around the world (ILO 2013). The development of the crash in developing countries was high, including Indonesia, because developing countries had many modern intensive works, causing many workers exposed by the potential danger.

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Container terminal X is service company storage and unloading container in Indonesia whose the processes of loading was dominated by humans. The port activity in Indonesia is directly prone to the increased risk of the accident in port.

According to H. W. Heinrich (1931), the occurrence of occupational accident was influenced by 2 (two) direct causes: unsafe action and unsafe condition. Risky activity was an act that did not guarantee safety, causing risk for the occupational accident (Ramli 2010). Unsafe condition was a state of the environment insecure and created risk of occupational accident (Gati Putri 2011). The study of Heinrich in 1928 at 75 thousand cases of industrial accident obtained that 88% of cases were caused by the explosive action, 10 % by unsafe condition and 2 % by natural disaster (Ramli 2010).

In the last few decades, many researchers had been developing theory and methods to investigate psychosocial performance safety aspects in the organization and had been undertaken by various researches on occupational safety, one of them at the level of the individual, that was an attitude toward occupational safety (Chyene et al. 2002). Chyene et al. (2002) also found that an attitude toward occupational safety had a positive and significant on the activities of occupational safety. When someone had a bias toward occupational safety, they would always wear self-protection and followed the safety regulation in the workplace.

Carl Gustav Jung (1920) stated that human personality could be divided by two types: introvert and extrovert. Hans J. Eysenck (1997) also explained the theory about type personality extrovert-introvert was influenced by what was stated by Carl Gustav Jung (Suryabrata 1988). According to Eysenck in Abidin and Suyasa, it was said that type of personality introvert and extrovert had a difference in managing conflict (Pratama 2015).

Characteristic of workers and type personality had a role to make a decision and behave, one of them was performing the explosive action when working. Risky response from workers was very crucial in determining safety in the workplace. Therefore, a writer would like to analyze the relationship between the characteristic of workers and personality type with explosive action.

## 2. Methods

This research used observational analytic research with a cross-sectional study, and used primary and secondary data collection method. The population in this research was all workers in a group of stevedore that perform the process of loading and unloading in PT. Container Terminal X.

In this research, the data collected included primary data and secondary data. Primary data was the data received from observation and filling out of the questionnaires, such as

interview to know characteristic and personality type of the workers, view of an unsafe condition. Secondary data is the data from the company especially the occupational safety PT: container Terminal X, such as books, corporate documents, and regulations or company policy, and another report that supports this research.

The procedure of this research included choosing a sample based on the criteria for inclusion. From the entire sample selected, interviews were conducted on the characteristics of workers, filling an instrument *Jung's Type Indicator (JTI)* test to know personality type and perform observation about unsafe action during the process loading and unloading. After data had been collected, the data analysis was conducted.

Techniques analysis data in this report was written in cross tabulation. After that, to look at the relationship between variable, it used the correlation Spearman test, because all of the data were ordinal. The data processing used SPSS application. To determine the level of the relationship of variables, it was calculated by a correlation coefficient symbolized ( $r$ ). The value  $r$  had range value  $-1$  up to  $1$ , in which the value of  $r = -1$  showed negative correlation or reversed correlation, value of  $r = 0$  showed no correlation and value of  $r = 1$  showed perfect correlation (very strong) (Riduwan 2013). Interpretation of value  $r$  was displayed in the following table:

TABLE 1: Interpretation a Correlation Coefficient Value  $r$ .

Interval	The Relationship
0.00 – 0.199	Very Low
0.20 – 0.399	Low
0.40 – 0.599	Sufficient
0.60 – 0.799	Strong
0.80 – 1.000	Very Strong

### 3. Results and Discussion

#### 3.1. Univariate analysis

Based on the table in age columns, the labor age criteria was categorized into three group: a teenager, adult and elderly. Teenagers were classified from 17 to 25 years old. Adults began at the age of 26 to 45 years past and elderly was over age 45 years old. From the table, the respondent who had around 17 to 25 years old were five respondents with a percentage (8.3%). Category of the adult was 11 people of the 23 respondents (38.3%), while for the elderly, there were 32 respondents (53%).

In the time of work, columns were categorized by 4 periode of times: one until six years, 7 to 13 years, 14 to 20 years, and 21 to 28 years. Based on the table, 14 labor of the

TABLE 2: The Results of The Univariate Analysis Recapitulation.

Variable	Category	n	%
Age	Teenager	5	8.3
	Adult	23	38.3
	Elder	32	53
Time of Work	1-6 years	14	23.3
	7-13 years	18	30.3
	14-20 years	16	27.1
	21-28 years	11	18.6
Education	Elementary School	2	3.3
	Junior High School	7	11.7
	Senior High School	46	76.7
	Bachelor	5	8.3
Knowledge	Less	8	13.3
	Sufficient	20	33.3
	Good	32	53.3
Personality Type	Introvert	44	77.3
	Extrovert	16	26.7
Unsafe Action	Low	18	30
	Sufficient	27	45
	Moderate	15	20
	High	0	0

total respondents had working period 1-6 years with percentage 23.3%. The frequency of working time 7 to 13 years was 18 respondents or 30.5 %; there were 16 respondents or (27.1 %) who had a range of work 14 until 20 years, and 11 labor (18.6 %) with a working period of 21 until 28 years.

In the education column, the education criteria of labor was categorized into four: elementary, junior high, High School Diploma/Bachelor's degree. Based on the table, the distribution level of the stevedore with two employees (3.3%) were an elementary school.

In the knowledge column, knowledge about occupational health was divided into 3: less, enough, and useful. Based on the table, the results of the questionnaire were: the respondents with less knowledge were 8 respondents (13.3 %), 20 people (33.3%) were sufficient, while 32 other respondents (53%) were good.

In the personality type column, it was divided into two categories: introverted and extroverted. The classification of the type was based on *Jung personality type indicator* (JTI) test. From the results of the testing, it showed that the majority of a stevedore in the loading and unloading process was introverted with 44 workers (77.3 %).

In the last column, unsafe action was divided into four categories: low, if unsafe index action < 25%; enough, if index risky action 26–50%; moderate, if index unsafe action 51–75%; and high, if index unsafe action > 76%. The distribution of dangerous work and personality type of the Stevedore were 44 respondents (77.3 %) that had an extrovert personality type. Based on the table, delivery of the explosive action were 27 respondents (45.0 %) that had low categories, and nobody had high grades.

### 3.2. Bivariate analysis

TABLE 3: The Results of The Bivariate Analysis Recapitulation.

Variable	Coefficient Correlation	Statistic Test	Relationship
Age	0.090	Spearman	Very Low
Time of Work	0.327	Spearman	Low
Education	0.324	Spearman	Low
Knowledge	0.417	Spearman	Strong
Personality Type	0.014	Chi-square	Very Weak

From the data processing in this research, it showed that from various variable the treatment, age variable, and personality type variable had a fragile relations with unsafe action; education and time of work had a low connections with risky activity; and variable that had strong enough relationships with unsafe movement was known, with value of a correlation coefficient by 0,417. This research supported the theory of Notoadmodjo, stating workers with good knowledge could prevent the employment accident either on himself nor anybody else (Notoadmodjo 2007).

### 4. Conclusions

The Stevedore in container Terminal X did not have high categories in the explosive action. There was a variable that had strong relations in risky activity, that was knowledge. From this research, it could be concluded that on the loading and unloading process did not have high categories in the explosive action. After conducted measurement, there was a relationship between age variables and personality type: fragile and low relation between time of work and education with explosive action, but there was variable that had strong ties in explosive action, that was knowledge (r=0.417).

## Acknowledgments

The author would gladly mention honorable colleague, Mr. Bondan Winarno as a supervisor in terminal container x, which has given directions and assistance in the process of collecting the data. DR Noeroel Widajati as the head of Occupational Health and Safety Prodi in Berlanga university who has to give directions writing this research.

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