

# A Correlation Analysis of Attitude, Subjective Norm and Behavioral Control Toward the Intention of Safety Behavior

(A Study on Plate Cutting Workers of Commercial Ships Division PT. PAL Indonesia (Persero))

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## ABSTRACT

PT. PAL is one of industry with a high risk of accidents. Workers cutting plate is examined in this study consisted of workers marking, cutting and fitter in the workshop Assembly, fabrication, CBL, MPL and workshops HO/ AO. Behavioral Intention survived in this research study is based on the Theory of Planned Behavior.

The purpose of this study was to analyze the relationship of attitudes, subjective norms and behavioral control to the intention of behave safely on a plate cutting workers in the Division of Commercial Ships PT. PAL Indonesia (Persero). This research is an observational research with cross sectional design. This research was held in March-April, 2017, with a population of 37 people and the sample was 34 obtained through the calculation formula of simple random sampling. Data is collected using a questionnaire.

Result based on the Spearman rho correlation test showed that there is no relationship between attitudes toward the intention of safety behavior ( $p = 0.86$ ), there is no relationship between subjective norms toward the intention of safety behavior ( $p = 0.09$ ) and there is a relationship between behavioral control toward the intentions of safety behavior ( $p = 0.02$ ).

**Keywords:** *safety behavior, attitudes, subjective norms, behavioral control, intention*

## INTRODUCTION

Safety behavior is part of the risk management process as the cause of accidents. Health and safety at work has centered on control of the working environment and the physical working procedures of employees in an effort to prevent errors and accidents, human factors that contribute to violence and accidents<sup>1</sup>. Human error is the most important factor as the cause of accidents that can eliminate human lives, injuries to workers and facility damage<sup>2</sup>. Workers represent half the world's population and is a major contributor to economic development and sosial<sup>3</sup>. Around 960,000 workers were injured in an industrial accident every 24 hours with 5,330 fatalities due to occupational disease<sup>4</sup>.

Health and Safety should be a shared responsibility between companies, management and employees. They must have the skills to identify and describe the relationship between the work environments,

organization, productivity and health<sup>5</sup>. Shipbuilding is one of the very complex construction, where there are many types of work to be done in parallel. The process and the handling of steel requires extensive facilities and a good place for the construction of ships, storage of materials and equipment in the production process. Steel is not only accepted, inspected, sorted, stored but must also be in blasting, cutting and forming according to desain<sup>6</sup>.

PT. PAL Indonesia (Persero), has the main tasks, one of which is the production of ship. On this ship production process conducted by using technology equipment and the process is at high risk, as shown by the high incidence of accidents in the shipbuilding. Type of accident is the case of exposed grams, exposed to radiation filter, cut, scratched, pinched, hit, splash welding and burning. Workers of cutting plate examined in this study consisted of marking, cutting and fitter

workers in the workshop Assembly, fabrication, CBL, MPL and HO/ AO workshop. Cutting plate job is a work that has high potential hazards in accordance with the equipment used and the workmanship, based on the observation of the potential danger to the cutting plate is a gas leak oxygen, a gas leak acetylene, fire/ exploding, eye irritation, dizziness, workers exposed to heat / sparks fire, workers pinched/ etched plate, exposed grams, respiratory problems and others.

The interview with the head of the workshop said that the withholding of ship plate has three (3) types, they are manual, automatic and semi-Automatic. Manual cutting consists of marking which is making a pattern on ship plate and Cutting which is done by using a tool such as angled ruler, sipatan, scator, and Rell Scator, brander by using acetylene and oxygen. Automatic cutting machine done by using plasma Cutting by using nitrogen and Sapro machine which uses argon, oxygen and compressors. Therefore, the semi-automatic cutting is a combination of manual and automated cutting.

Personal protective equipment (PPE) used for cutting plates, namely helmets, work shoes, masks, goggles, leather gloves and work clothes. The results of observations of plate cutting workers found that some workers were not wearing protective equipment (PPE), based on interviews of workers reason is because it is already familiar with the job and do not have health problems or severe injury. Results of interviews with officer safety in the field say that the personal protective equipment provided by the company. Before starting the work of the workers, especially workers were given safety induction plate cutting and received briefings on cutting labor standards aim is for workers to know the rules K3 in the workplace and also understand the working standard plate cutting, so avoid the Unsafe action.

Applying safety behavior in the workplace for workers, it is necessary to identify the underlying factors that can cause the safety behavior of the workers. Theory of Planned Behavior is a behavioral method developed by Ajzen, where this method is applied to understand how individuals behave. The decision in the act is the result of a reasoned process where behavior is influenced by attitudes, subjective norms and Perceived Behavioral Control, it affects mainly the behavior intention. The relationship between intention and behavior can be described as "People do what they intend to do and do

not do what they do not intend" 7.

This study aimed to analyze the relationship between attitudes, subjective norms and behavioral control toward the intention to behave safely on a plate cutting workers in the Division of Commercial Ships PT. PAL Indonesia (Persero).

## MATERIAL AND METHOD

This research is an observational research with cross sectional design. This study was conducted in March-April 2017, the population of this research was plate cutting workers in the Division of Commercial Ship of PT. PAL Indonesia Persero, total of 37 workers and the sample was 34 obtained through the calculation formula of simple random sampling. Data is collected by using questionnaires, researchers conducted an analysis of the results of the questionnaire with the Theory of Planned Behavior (TPB).

## FINDING

Characteristics of research subjects in this study can be described in Table 1 below:

**Table 1: Subject's characteristics**

Characteristics	Category	Amount	%
Age	20-30 years	16	47.1%
	30-40 years	8	23.5%
	> 40 years	10	29.4%
	Total	34	100%
Years of service	1-15 years	23	67.6%
	16-30 years	10	29.4%
	> 30 years	1	2.9%
	Total	34	100%
Education	SMA / SMK	31	91.2%
	PT	3	8.8%
	Total	34	100%
Employment status	organic	17	50.0%
	PKWT	17	50.0%
	Total	34	100%
Knowledge of Occupational Health and Safety	Less	0	0.0%
	Enough	4	11.8%
	Good	30	88.2%
	Total	34	100%

(Source: Cutting Plate Workers of Commercial Ship Division, 2017)

The data collection of characteristics of the subject in this research was conducted by questionnaire including age, years of education, employment status and knowledge of Occupational Health and Safety. Most workers age is between 20-30 years were 47.1%. Most work period is 1-15 years is 67.6%. The level of education is high school most of the workers as much as 31 workers (91.2%). 17 workers (50.0%) are permanent workers and 17 workers (50.0%) non-permanent employees. Workers knowledge level of the Safety Behavior on the cutting plate is a good category (88.2%) of 30 respondents.

The results of data collection is based on a questionnaire on attitudes, subjective norms, behavior control toward intention of behaving safely on a plate cutting workers. The results of data processing questionnaire shown in the following tables:

**Table 2: The correlation of Attitudes toward the intension of Safety Behavior of Plate Cutting Workers of Commercial Ship Division PT. PAL Indonesia (Persero)**

Attitude	Intention of Safety Behavior					
	Less		Enough		Good	
	N	%	N	%	N	%
less	2	66.7	0	0	1	33.3
Enough	4	23.5	4	23.5	9	52.9
Good	5	35.7	2	14.3	7	50.0
<b>p-value</b>	<b>0,86</b>					

( $\alpha=0,05$ )

Table 2 shows that the attitude of the less showed a lack of intention to behave safely, good attitude showed good intentions to behave safely. The attitude in this study is the response, response or reaction tendency of employment to a number of questions about specific behaviors that are positive or negative is usually manifested in the form of liking or dislike, agree or disagree. Relations attitude to the intention of behaving safely plate cutting workers in the merchant vessel division PT. PAL Indonesia (Persero) is not significant,

it is supported by research Uryan (2010)<sup>8</sup> attitude refers to an individual feeling about something, which is evaluated and generalized according to the individual's personality, Weak employee attitudes toward intention to behave based on health and safety at work (K3) because many factors influence a person's attitude is a personal experience, culture, mass media, institutions (companies) and emotional factors<sup>9</sup>. When an individual decides to behave safely, formation of intention will be influenced by personal factors and influences sosial<sup>10</sup>. The attitude sometimes fail to be a behavior because many other factors that prevent people change their attitude to the behavior<sup>1</sup>.

**Table 3: The correlation of subjective norm toward the intension of safety behavior of Plate cutting workers of Commercial Ship Division PT. PAL Indonesia (Persero)**

Subjective Norms	Intention of Safety Behavior					
	Less		Enough		Good	
	N	%	N	%	N	%
Less	10	43.5	3	13.0	10	43.5
Enough	1	50.0	0	0	1	50.0
Good	0	0	3	33.3	6	66.7
<b>p-value</b>	<b>0,09</b>					

( $\alpha=0,05$ )

Table 3 shows that the correlation of subjective norm to behave safely intention is not significant. Subjective norm in question in this research is the perception felt by workers in the workplace in particular safety concerns and influence the behavior of fellow workers survived on worker attitudes and intentions to behave safely. Safety culture of an organization formed beliefs, values, and behaviors of individuals (Helmreich and Merritt, 2001)<sup>11</sup>. Subjective norm is a person's perception regarding the Agreement others against an action, what other people important want to do or what they will approve or disapprove, can establish normative beliefs descriptive based on the actions observed or inferred from others (Ajzen, 2015)<sup>12</sup>. If others are relevant view that displays

the behavior as something positive and the person is motivated to fulfill the expectations of others that are relevant, then it is called with a positive subjective norm. If the behavior shown is that negative behavior called the negative subjective norms (Ba'agil, 2012)<sup>13</sup>. Subjective norm refers to the individual's perception of social pressure to perform or not perform the behavior. This means that if a person feels that people who are important to him approve or disapprove of the behavior, individuals are more inclined or do not want to do it (Denan et al, 2015)<sup>14</sup>.

**Table 4: The correlation of behavioral Control toward the intension of safety behavior of plate Cutting workers of Commercial Ship Division of PT. PAL Indonesia (Persero)**

Control Behavior	Intention of Safety behavior					
	Less		Enough		Good	
	N	%	N	%	N	%
Less	9	47.4	4	21.1	6	31.6
Enough	1	14.3	0	0	6	85.7
Good	1	12.5	2	25.0	5	62.5
<b>p-value</b>	<b>0,02</b>					

( $\alpha=0,05$ )

Table 4 shows that there is a significant relationship between behavioral control and intention to behave safely. Controls showed less behavior intention less about behaving safely, control the behavior that demonstrates both good intention of behaving safely. This means that the value of the intention of behaving safely increases with behavioral control. Behavior control as measured in this study are Perception of workers about the things around it that hinder or support the behavior of survivors. Ajzen (2005)<sup>15</sup> also states that the Control Belief leads to the perception that an individual has or does not have the ability to display a behavior. If someone has a powerful Control Beliefs regarding an existing factors will facilitate a behavior, then a person has a high perception to be able to control behavior. Instead, someone would have a low perception in controlling a behavior if he has a weak Control Beliefs about the various factors that inhibit behavior. The role of behavioral control plays an important role in the theory of planned behavior, perceived behavioral

control refers to people's perception of ease or difficulty performing the behavior (Ajzen, 1991)<sup>16</sup>.

### CONCLUSION

There is no correlation between attitude towards the intention of safety behavior of Worker of Cutting Plate of Commercial Ships Division PT. PAL Indonesia (Persero)

There is no correlation between subjective norms toward the intention of safety behavior of Worker of Cutting Plate of Commercial Ships Division PT. PAL Indonesia (Persero)

There is a correlation between behavioral control toward the intention of safety behavior of Worker of Cutting Plate of Commercial Ships Division PT. PAL Indonesia (Persero)

**Conflict of Interest:** None

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**Ethical Clearance:** The study was approved by the institutional Etichal Board of Public Health, Airlangga University.

All subjects were fully informed about the procedures and objectives of this study and each subject prior to the study signed an informed consent form.

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