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# Influence of occupational health and safety culture implementation to productivity of work to heavy equipment worker at PT. X Surabaya

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**Abstract.** Labor is one of the assets which determines the quality of the company. Worker can exposure to potential hazard from the work environment so that it can decrease productivity of worker. Data from ILO (2010) show that more than 2 million people/years died due to work accidents and occupational disease. At Indonesia showed every 7 second work accident was occurs. If this happen continuously, it will reduce the productivity of workers and will have an impact to job performance. Heavy Equipment Workers at Port of PT.X is one of the high risk job, therefore this company must arrange work program that support the Occupational Health and Safety(OHS) implementation at workplace through Safety Culture Implementation. The aim of this research is to analyze the influence of occupational health and safety culture implementation to productivity of work on Heavy Equipment Worker at PT.X Surabaya with using cross sectional study. Total samples of 52 workers, taken by the total sampling method. Data related to respondent characteristics like productivity of worker, safety culture implementation, OHS Policy, OHS Program, working behavior obtained from direct observation to the field and interviews with workers. Statistical test result using multiple linear regression test showed that the effect of OHS culture implementation (with variabel OHS Policy, OHS Program and Working behavior) influence 79,6% to Productivity of Work to Heavy Equipment Worker at PT.X Surabaya with p-value  $0,000 < 0,05$ . Because all worker know that company has applied the OHS management, this can be known from the interviews result and direct inspections in the field that all workes was working with safe action, because their know that their work has a high risk of potential hazard and then before entering the workplace, HSE Supervisor always provide safety briefing to all operator. Recommended for the company to commit to improve OHS Management and OHS Program in the company and all OHS Policy and OHS Program should be socialized and carried out routinely and continuously. For all worker should be more disciplined to using PPE and before work must reading the Standard Operational Procedure (SOP) before starting the work.

## 1. Introduction

In order to run safe business, then the protection program for worker must be carried out by the company through implementation of Occupational Health and Safety Management (OHSM/SMK3). Worker can exposure to potential hazard from the work environment so that it can decrease productivity of worker. Occupational and Health Safety Program (OHS Program) has become important things to consider, because OHS Management not only responsibility of Human Resource but also be the responsibility of all division or department in the company. Labor is one of the assets which determines the quality of the company.

Some of the benefits with implementation of OHS Management in the workplace are: (1) Increased efficiency and workforce quality,(2) increased productivity and reduce loose time injury, (3) expenses for medical cost and life insurance are reduce and (4) increasing company reputation. The result of research conducted by Supriyan in a case study of Cingkareng Bussines City 5 development



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project with sample size are 80 workers, showed that 87,25% respondent said the implementation of OHS Management was implemented and 80% respondent agree that implementation of Safety Culture at project site is good. The results of this study are in line with research conducted by [4] that the application of the OHS Management in the workplace of PT. Jawa-Bali Awakening has a significant effect on increasing employee productivity. Good application of OHS Management the better the work productivity of workers. Through the implementation of safety culture sustainable is expected to reduce the level of work accidents and be able to increase spirit of employee. Workers who are guaranteed safety and health will work more productively, so this will support success in the development of the company [5].

Every workplace have potential hazard and risk to the worker, has the potential and risk of harm to its workforce, one of which is the port service business like PT. X. PT.X is the one of subsidiaries of Indonesian Port which is a State-Owned Enterprise as a port service provider that carries out activities as a port terminal operator as of the beginning of January 2002 with a focus on Cargo and Container Handling service businesses in conventional terminals which the company was implementation of OHS Management.

Most activities are conducted outdoors, looking at environmental conditions and work processes that are very vulnerable and at high risk of work accidents. Therefore company must be responsible to providing protection to works by implementing safety culture or OHS Management at workplace. Company image of company depends on the work productivity of works. Therefore the aims from this research is to analyze the influence of the OHS Culture/Safety Culture (Company Policy regarding OHS, Implementation OHS Program, and Worker Behavior at Work) to Productivity of Work to Heavy Equipment Worker at PT. X Surabaya.

## 2. Method

Design of this study was observational analytic with cross sectional study design is a research design to study the dynamics of the correlation between risk factors, by means of an observation or data collection approach at a time. In this case the K3 program is an independent variable and work productivity is the dependent variable. The population in this study were all heavy equipment operators in PT.X Surabaya as many as 52 people which is divided into three shifts. The sample size was 52 people drawn by accidental sampling method.

Data collection is divided namely primary data and secondary data. Primary data obtained by getting information directly from the workers at PT X. who were respondents during the interview and observations while secondary data obtained through the company's management as well as literature to support research. The data obtained were then analyzed using the SPSS program like multiple linear regression test.

## 3. Result and Discussion

### 3.1. Results

#### 3.1.1. Characteristics of Respondents

Data from Table 1 showed the distribution of individual characteristics on on Heavy Equipment Workers at PT.X, from 52 workers who were respondents in this research, most of the education level is senior high school 78,8% (41 workers), with work periode more than five years as much 32 workes (61,5%) and the most dominant section are heavy equipment operator.

**Table 1.** Distribution of individual characteristics on heavy equipment workers at PT.X.

Characteristics of Respondents	Categories	n	%
Educational Background	Junior High School	2	3.8
	Senior High School	41	78.8
	Graduate	9	17.3
Operator Section	Lifting Operator (HMC, RTG, RS)	29	56.0
	Transportation Operator (FL dan HT)	23	44.0
Shift of Worker	07.30-15.30	18	34.6
	15.30-23.30	23	44.2
	23.30-07.30	11	21.2
Work Period	≥ 5 years	32	61.5
	< 5 years	20	38.5
	Total	52	100.0

Source: Primary Data, 2019

### 3.1.2. Description of respondent's characteristics regarding the Safety Culture

Data from Table 2 showed the distribution respondent based on the understanding of Safety Culture Implementation at company, starting from company policy regarding OHS, OHS Program at company and worker behavior. From 52 responden in this study as much as 35 worker (67,4%) stated that there are company policy regarding Occupational Health Safety (OHS) and has been socialized to the worker, and 36 worker (69%) stated that OHS Program at the company has been socialized and implementation. About worker behavior, almost entirely Heavy Equipment Operator at PT. X have worked with safe is as much 43 worker (82,7%).

**Table 2.** Distribution of respondent on the implementation of safety culture on heavy equipment workers at PT.X.

Safety culture implementation	Categories	n	%
Company policy regarding OHS	There are policy and has been socialized	35	67.4
	There are policy, but rarely socialized	15	28.8
	There are policy, but never socialized	2	3.8
	There are OHS Program and has been socialized and implementation	36	69.0
OHS program at company	There are OHS Program, but rarely socialized and implementation	15	29.0
	There are OHS Program, but never socialized and implementation	1	2.0
Worker behavior at work	Safe action	43	82.7
	Unsafe action	9	17.3
	Total	52	100.0

Source: Primary Data, 2019

### 3.1.3. Description of respondent's characteristics regarding the Safety Culture Implementation with Productivity of Work on Heavy Equipment Workers at PT.X

Data from Table 3 showed crosstabulation of safety culture implementation with productivity of work at Heavy Equipment Workers at PT.X. From 52 heavy equipment workers who become respondent in this research, as many as 37 workers (71.1%) have productivity of work with high categories and the remaining 5 people (7.7%) workers have low work productivity. Most of workers who have high work productivity are of the opinion that policies and implementation of programs related to OSH have been well socialized to workers so that when working, so workers are used to work with safe action. This

can be seen from the habitual behavior of workers at work of 43 people who behaved safely 37 people (86%) of them had high work productivity, and none had low work productivity.

**Table 3.** Crosstabulation of safety culture implementation with productivity of work on heavy equipment workers at PT.X.

Safety culture characteristics		Categories Productivity of Work						N	%
		High productivity of work		Middle productivity of work		Low productivity of work			
		n	%	n	%	n	%		
Company Policy regarding OHS	There are policy and has been socialized	29	82.8	5	14.2	1	3.0	35	100
	There are policy, but rarely socialized	8	53.3	5	33.3	2	13.4	15	100
	There are policy, but never socialized	0	0	1	50.0	1	50.0	2	100
<b>Total</b>		<b>37</b>	<b>71.1</b>	<b>11</b>	<b>21.2</b>	<b>5</b>	<b>7.7</b>	<b>52</b>	<b>100</b>
OHS Program at Company	There are OHS Program and has been socialized and implementation	30	83.3	5	14.0	1	2.7	36	100
	There are OHS Program, but rarely socialized and implementation	7	46.7	5	33.3	3	20.0	15	100
	There are OHS Program, but never socialized and implementation	0	0	1	100	0	0	1	100
<b>Total</b>		<b>37</b>	<b>71.1</b>	<b>11</b>	<b>21.2</b>	<b>5</b>	<b>7.7</b>	<b>52</b>	<b>100</b>
Worker Behavior at Work	Safe action	37	86.0	6	14.0	0	0	43	100
	Unsafe action	0	0	5	55.6	4	44.4	9	100
<b>Total</b>		<b>37</b>	<b>71.1</b>	<b>11</b>	<b>21.2</b>	<b>5</b>	<b>7.7</b>	<b>52</b>	<b>100</b>

Source: Primary Data, 2019

#### 3.1.4. Multiple regression test

Data from Table 4 showed that Regression test of Safety culture implementation with productivity of work on Heavy Equipment Workers at PT.X. From the table above we get that information which consists of worker behavior, OHS program and company policy regarding OHS has an influence of 79.6% on work productivity. Statistical test results using multiple linear regression obtained a probability value (p value) of 0,000 < 0,05. These results can be concluded that H0 is rejected, so there is an influence between the safety culture implementation with productivity of work on Heavy Equipments Operator at PT.X.

**Table 4.** Multiple regression of safety culture implementation with productivity of work on heavy equipment workers at PT.X.

	Model	dF	R	R Square	Adjust R	F	Sig.
1	Regression	3					
	Residual	48	0,796	0,634	0,611	27,670	0,000
	Total	51					

Source: Primary Data, 2019

### 3.2. Discussion

Labor is one of the vital assets that determines the quality of the company. Labor have threats from the work environment, which can be risk at occupational health and safety. The main purpose of the application of OHS in the workplace is to reduce and prevent the occurrence of occupational diseases and accident at workplace. The success of a company depends on the work productivity of its workers.

OHS culture is a combination of attitudes, values, beliefs, norms and perceptions of prospective student workers in an organization, which has a joint relationship to K3, safety behavior, and its practical application in the production process [2]. The main concept of Safety Culture implementation is the importance of shared understanding, supported by homogeneous perceptions about K3 in an organization, although there must be differences in perception from all levels of the hierarchy in an organization.

PT. X is a port service provider company that carries out activities as a port terminal operator. Almost all work activities are carried out outdoors, looking at environmental conditions and work processes that are very vulnerable and at high risk to accidents. This company must be responsible in providing protection to its workers by implementing safety culture in the workplace.

In this study showed that safety culture which consists of worker behavior, OHS program and company policy regarding OHS has an influence to work productivity. This research is in line with research conducted by Wardhani R [17] to workers in the Meritjan Kediri PG installation section that there was correlation between Safety Culture with productivity of work, when if workers apply safety culture correctly then the work productivity will increase. In accordance with Monday's opinion [7] Companies that implement the K3 program well can encourage their employees to work more optimally in completing their work so that the working conditions and OHS programs are good and make employees happy at work which can ultimately increase work productivity.

Work productivity can be seen through work quantity, work quality and timeliness. The quantity of work is a result achieved by workers in a certain amount with a comparison of existing standards or determined by the company, while the quality of work is a standard result related to the quality of a product produced by workers. Timeliness is the level of an activity that is completed at the beginning of the stated time, seen from the point of view of coordinating with the outputs and maximizing the time available for other activities.

In this study showed that OHS program and company policy regarding OHS has an influence of 79.6% on work productivity at Heavy Equipments Operator at PT.X, this is happens because all worker know that company has applied the OHS management, this can be known from the interviews result and direct inspections in the field that all workes was working with safe action, because their know that their work has a high risk of potential hazard and then before entering the workplace, HSE Supervisor always provide safety briefing to all operator.

There are six indicators that affect productivity of work that is:(1) Work position; (2)Level of skill; (3) The relationship between workforce and organizational leadership; (4) Productivity management; (5) workforce recruitment planning; and (6) Entrepreneurship is an attitude that reflects someone's independence in an organization.

### 4. Conclusion

The conclusion from this research, there is an influence between the safety culture (Company Policy regarding OHS, Implementation OHS Program, and Worker Behavior at Work) implementation with productivity of work on Heavy Equipments Operator at PT.X. Suggestions for the company are to commit to improve OHS Management and OHS Program in the company and all OHS Policy and OHS Program should be socialized and carried out routinely and continuously. For all worker should be more disciplined to using PPE and before work must reading the Standard Operational Procedure (SOP) before starting the work.

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