

# The Factors Related to the Incidence of Occupational Accidents in the Production Department

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**Abstract---** *Accidents happening in the workplace should be controlled well. In the workers in the informal sector, especially in the metal sector, in the manufacturing process has a high risk to have an occupational accident. This study aimed at analyzing the relationship between Lack of Control and the human factor, human factor and Immediate Causes, Immediate Causes and occupational accidents in the manufacturing process of the informal sector in the metal sector. The research design was a cross-sectional study using the observational quantitative method. The population of this study was 18 workers. The sampling method was done by using total sampling with a total sample of 18 workers. The research variable consisted of the lack of control, basic causes, immediate causes, and the incidence of an occupational accident. The data collection was done using questionnaires. Further, the data were analyzed by using Pearson's correlation test. OSH policy and the provision of PPE and the individual commitment showed a correlation ( $p\text{-value}<0.05$ ). The OSH training and individual commitment did not correlation ( $p\text{-value}>0.05$ ). The Lack of Control and OSH knowledge and work stress showed no correlation ( $p\text{-value}> 0.05$ ). The human factor and work behavior also showed no correlation ( $p\text{-value}> 0.05$ ). Meanwhile, the behavior and work environment and occupational accidents also showed no correlation ( $p\text{-value}> 0.05$ ). The conclusion of this study are the factors that are correlated to each other are only the OSH policy and the provision of PPE towards individual commitment.*

**Keywords---** *Occupational Accident, Occupational Safety and Health, Informal Sector.*

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## I. INTRODUCTION

Based on Laws No.13 the Year 2003 on Workforce [1], the workforce is the people who can perform the job to produce goods and services for either personal needs or people's needs. The position of each workforce is protected by laws in terms of the worker's health and safety. The welfare of each work force becomes the collective responsibility in realizing it. According to the data from the Central Bureau Statistics (BPS) in 2018 [2], the workforce in Indonesia in August, 2018 showed that 94.66% of the people in Indonesia were in the category of employees. The more the number of the workforce is in Indonesia, the more concern towards the worker's health and safety should be improved.

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According to the *International Labour Organization* (ILO) in 2013 [3], 160 million workforces were sick in the workplace. The number of accidents in the workplace was more than 250 million every year. For the estimated current data issued by the *International Labour Organization* (ILO) in 2018 [4], around 2.78 million experienced fatality due to occupational accidents and occupational-related disease.

The total fatalities due to occupational-related diseases were around 2.4 million workers or equal to 86.3%, while the total fatality due to occupational accidents was 380,000 or equal to 13.7%. The low total fatality due to occupational accidents has two possibilities, namely, the fatal occupational accident was low or many fatal accidents that resulted in fatalities but it was not identified.

The accident happened in the workplace needs to be controlled well. The job certainly involves the worker, equipment, and material used in the operation managed through a management process. To improve the management of control, one of the ways is the commitment of the management in the implementation [5]. The activity to prevent and reduce the Occupational-related Accident and Occupational-related Disease to obtain the safe, efficient, productive, and integrated work environment is by involving the management division by forming an approach of occupational safety and health system in the workplace; it is the purpose and the goal of the OSH management [6]. The implementation of the OSH management system is initiated by the existence of commitment from *top-level management*, planning, implementation, inspection, up to the follow-up stage [6]. The management commitment is one of the main elements in the Occupational Health & Safety Management Systems (*SMK3*) based on the Ministry of Health Decree Number 432 the Year 2007 [7]. The implementation of Occupational Health & Safety Management Systems is performed by the company with, at least, one hundred workers. The process or the manufacturing material that has the potency to cause explosion, fire, pollution, and occupational-related disease should also implement the OSH management systems [6].

The formal and informal sectors in Indonesia have different hazardous potentials in each scope of work. The total workers in the formal and informal sectors in Indonesia based on the data from the Central Bureau Statistics in 2018 [2] were categorized as high. The total was 127.07 million workers from the total worker in Indonesia, namely 133.94 million. The concern towards the protection of labor in Indonesia is not only done in the formal sector but also in the informal sector. The formal sector should report occupational accidents so that the total occupational accidents can be identified clearly. Meanwhile, the informal sector has no obligation to report the occupational accidents so that the occupational accidents in the informal sector cannot be identified clearly. Based on the finding in the previous study in [8] the informal sector, the percentage of the incidence of occupational accidents was 62.5%. One of the factors that caused occupational accidents in the study was the majority of the respondents were at unsafe work environment and unsafe work behavior. The study also showed that both factors correlated with occupational accidents.

The OSH issues faced by the informal sector are quite complex. The workers in the informal sector do not have compensation for occupational-related disease and occupational-related accident. The workers in the informal sector also do not get the official health insurance. It becomes a problem faced by workers. The minimum understanding of the

hazardous potential in the workplace easily causes the occupational-related accident and the occupational-related disease [9]. In 2016, the Ministry of Health of the Republic of Indonesia explained that formal and informal jobs had a risk of health problems. Lack of awareness and knowledge related to hazards in the work environment of the informal sector cause an increase in health problems.

The Occupational Health Post (*Pos UKK*) was built to perform health management in the health sector for informal workers. Various activities performed by the Occupational Health Post were promotive activity, preventive action, and the implementation of first aid towards the workers with either occupational-related accident or occupational-related disease. The implementation of the Occupational Health Post is emphasized on the management of the worker behavior during the process of performing their job to decrease the risk level of accidents and to increase the workers' health condition [10].

The production department is the department that works from the receipt of raw materials to the process of manufacturing the raw materials involving some equipment used in the work process based on the job specification in all sectors. The production department in the informal sector for the metal sector is the work unit that manufactures the metal raw material into finished products. The production department involves the work equipment, materials, work procedure, and worker so that it has the risk of occupational accidents.

The commitment in the implementation and the involvement of the informal sector in the activity of the Occupational Health Post will affect the company in performing the management towards the work process and the worker behavior in the informal sector. The total accident in the informal sector indicates that the concern towards the management of OSH implementation in the company is needed. The implementation of good OSH management needs to be supported by each party in the company. Based on all conditions in the work environment of the informal sector, the study aiming at analyzing the relationship between *Lack of Control* and the human factor, human factor and *Immediate Causes*, *Immediate Causes* and occupational accidents in the workers at the manufacturing process in the informal sector for metal was conducted.

## II. LITERATURE REVIEW

Literature Review will show that the results of the research carried out in accordance with some of the results of other studies. The result of Relationship between OSH Policy and Individual Commitment showed that the relationship between OSH policy and individual commitment resulted in a positive relationship. In the previous studies on the correlation between the policy and individual commitment showed that there was a significant relationship between those two variables. The changes in strategy and policy were performed by each organization based on individual commitment related to the policy that would be formed. The development and implementation of the policy were done by considering the experience and the individual commitment of the workers [11]. Another fact found in the previous studies showed that there was a significant relationship between the management of occupational safety and health and the normative, affective, and sustainable commitment from the workers. If the workers feel safe and protected from the potential hazards in performing their job through the policy that is made, the workers will have the responsibility to an organization and will commit to the organization [12]. It was also shown by the study conducted by another researcher who had the same finding. From the explanation, it can be inferred that a good policy from industry or organization makes the workers have a good individual commitment to perform their job. The result of the study [13] showed that there was a strong relationship between training and

individual commitment. It was not only a strong relationship between the two variables, but it also showed the direction of the relationship between training and individual commitment. The direction of the relationship between the two variables was positive. The result of the study showed that training contributed to individual commitment. Training towards the workers will increase the workers' commitment. The total contribution of training toward individual commitment was 93%. Based on this study about there was no relationship between OSH training and individual commitment that had been conducted, the result was different from the previous studies. Generally, training is required in each company to improve the workers' ability and competence. However, it does not guarantee the increase or the decrease in the individual commitment of the workers. The next literature review about result of relationship between the Provision of PPE and Individual Commitment that there was a positive relationship. In the study that was also conducted in a small-scale industry or informal industry, the use and the provision of PPE were strongly required and the majority of the respondents expressed their behavior by using the PPE if it was provided. Even though it was a small-scale industry or a company in the informal sector, the provision of PPE was strongly required. Instead, the workers in the small-scale industry were more susceptible to accidents when performing their job. Several incidences happened in the small-scale industry can be an example, such as the lack of the workers' accessibility towards information, knowledge, and training on the use and the obligation of using the PPE as well as lack of understanding towards the health impact caused by the exposure, equipment, and materials in the workplace [14]. The study conducted in Jeddah [14], there was an information gap in the workers at the small-scale industry related to the potential hazards of the job, the hazardous risk, the impact towards the workers' health, and the use and the effectiveness of the relevant safety. The PPE that was not used could cause accidents. The factor that could cause one of the impacts was the regulation and the policy on the availability of PPE [14]. The conclusion drawn from the explanation is that the availability of PPE will be correlated with the individual commitment of the workers in performing their job so that if the provision of PPE is good, the individual commitment of the workers will also be good.

The result of the study showed that there was no relationship between OSH policy and knowledge. In another study, there was no relationship between OSH policy and knowledge. An organization contains various important elements about the company policy related to the implementation of OSH as the management commitment towards OSH, such as OSH policy. The OSH policy can be used for increasing the workers' knowledge level, even though it is not a direct factor causing an increase in knowledge [15]. The next research is about relationship between OSH training and knowledge showed that there has no relationship of both. In a study that had ever been conducted in *Clinical Skill and Simulation Center (CSSC) at King Abdul Aziz University Hospital (KAUH)*, it was found that the workers' knowledge increased after participating in the training about the use of PPE to handle the Ebola virus disease. The workers knew more about PPE and what to use as well as the management to face the hazards during the process of performing the job [16]. Based on the study that had been conducted, it was found a result that was different from the previous studies. It was because the previous studies analyzed the workers in the formal sector with a relatively similar educational background. Further, the training was easier to be applied to the workers in the formal sector than to the workers in the informal sector as had been conducted in this study. The result of the next research showed that there was no relationship between the provision of PPE and knowledge. In the previous study, it was found that there was a significant relationship between PPE and the workers' knowledge. The study was conducted in the Department of *Forging* in the Division of *Forging* and Casting Process in the Metal Company in Bandung, East Java. Knowledge is a predisposing factor that affects behavior. Most of the results that were felt, heard, and seen using senses are knowledge. The frequency of being exposed by information made the workers had good information, in this discussion, related to PPE. Various incidences of occupational accidents can be reduced or

eliminated from the work environment. The direct supports caused by the knowledge related to PPE received by the workers [17]. The study conducted in Nigeria in 2013, related to knowledge and the provision of PPE, showed that the two variables had no significant relationship. The available PPE had no relationship with the workers' knowledge level [18]. This study had the same result as the previous study conducted in Nigeria in 2013 [18] that there was no relationship between the provision of PPE and knowledge. The more frequent the workers use the PPE while working, it does not affect the workers' knowledge related to PPE to be better.

An other literature review about result of relationship between OSH policy and work stress that has no relationship. OSH policy is an umbrella that can be used in organizing work stress in the workers. The overall problem either physical incidence or psychological incidence in the workers during the work process is known as work stress. Based on the study that had been conducted before, the policy was made effectively and the strong commitment of the company to create a safe and healthy work environment could reduce work stress. The policy made in the workplace was used for reducing work-related stress. In this case, the company is responsible for the implementation of the policy on work stress and the company is also responsible for providing the required resources to manage work stress. The businessman should perform the risk assessment [19]. The result of the study showed that there was no relationship between OSH training and work stress. In the previous study, it was found that the stress in the workers was one of the factors involved in the needs of training in the workers [20]. Generally, work stress can give a direct effect on occupational safety and health. More than one factor can cause stress in the workers. Individual factors and situational factors in the job can strengthen or weaken the stress in the workers [21]. In this study, OSH training had no relationship with work stress. The work stress in a company in the informal sector in this study was categorized as 'high', while OSH training was categorized as 'fairly good'. Good OSH training has no relationship with the workers' condition because the workers' stress is categorized as 'high'. The result of the study showed that there was no relationship between the provision of PPE and work stress. The level of work stress experienced by the workers could be caused by the level of job satisfaction. Another study showed that to minimize the conflict between the groups, to increase the use of skills, and to increase the job satisfaction, it was important to reduce work stress [22]. Another study mentioned that the provision of PPE had a positive impact on self-efficacy, and the self-efficacy had a positive significance toward job satisfaction [23]. As explained previously, job satisfaction was a thing that could be achieved to reduce the stress in the workers. The provision of PPE can indirectly reduce the level of work stress in the worker. In this study, the provision of PPE had no significant relationship with work stress. The good provision of PPE did not reduce the high level of work stress. Consequently, in this study, the provision of PPE does not have a significant relationship with work stress.

The result of the study showed that there was no relationship between Individual Commitment and work behavior. Another study explained that the lack of commitment in the workers could damage the performance of a company or an organization. The behavior was shown by the workers toward the performance. The high commitment of the workers was positively influenced by the performance of the company or organization. In this study, it was found that there was a significant relationship between the commitment of the workers and the performance [24]. This study showed that there was no significant relationship between the commitment of the workers and work behavior shown by the workers. Further, the high commitment did not reflect the high work behavior during the work process. Based on the study [24], it was stated that when the workers faced some complex problems, there was a possibility for the workers to have no willingness to face the work-related problems. There is a factor affecting the behavior of the workers when performing the job. Consequently, good commitment does not guarantee the behavior of the workers in performing the job well. In this study, it was shown that individual commitment had no significant relationship with work behavior. Another study investigating the relationship between knowledge and *Safe behavior*

showed that there was a significant relationship between knowledge and safe behavior while working. The strong relationship between the two variables resulted in a weak relationship. Consequently, even though they were correlated, they had a weak relationship. From that study, it was also found that the majority of the respondents the workers' safe behavior was shown by the use of PPE by the workers. The high level of knowledge related to the use of PPE and the occupational risk faced by the workers made them perform safe behavior while working [25]. In this study, it was found that knowledge had no significant relationship with work behavior. Good knowledge does not indicate that the workers will perform safe behavior while working. Consequently, in this study, knowledge had no relationship with work behavior. The result of the study showed that there was no relationship between work stress and work behavior. This result was supported by the result of another study stating that stress at work had no significant relationship with safe behavior when performing the job. Work stress might cause stress in the workers, yet each individual had a different perspective toward work stress. The high perception toward work stress faced by the workers can cause them to have lower attention toward safe behavior that they should perform during the work process [12].

The result of another study showed that work behavior had no significant relationship with the incidence of occupational accidents. In that study, it was explained that the incidence of occupational accidents that was only caused by the behavior of the workers would never answer the problem of the incidence of occupational accidents experienced by the workers. Another factor from the inside of the company, such as the different types of organizations in the company, can also cause the incidence of occupational accidents. Ineffective conditions and lack of OSH supervision systems also became the factors causing occupational accidents [26]. The result found in this study showed that there was no significant relationship between work behavior and the incidence of occupational accidents. It is in line with the study showing the same result in this study. About relationship between work climate and the incidence of occupational accidents, This result was different from the result of study stated that the work climate above the Threshold Value showed that there was a high level of fatigue experienced by the workers [27]. The level of fatigue is one of the factors causing the incidence of occupational accidents shown by the result stating that the workers that feel fatigued or in the fatigue condition have the risk to cause the incidence of occupational accidents [28]. The result of the study is different from the result of this study. The result of this study showed that the condition of the work climate did not disturb the workers when performing the job. Consequently, when the measurement of analysis was applied, it did not show a significant result between work climate and the incidence of occupational accidents. In the previous studies that had been conducted, it was shown that there was a significant relationship between noise in the workplace and the incidence of occupational accidents. The level of relationship that had been stated was that there was a weak relationship between noise and the incidence of occupational accidents. The highest noise level collected in this study was 87.5 dB. The level of noise had already exceeded the Threshold Value, but it could be tolerated by the workers by using the PPE to reduce the risk of noise [29]. It was different from the result of this study showing that the level of noise did not disturb the condition of the workers when performing the job so that it did not show a significant relationship between noise and the incidence of occupational accidents. In the previous studies that had been conducted, it was shown that there was a significant relationship between lighting in the workplace and the incidence of occupational accidents. The level of relationship stated in the study shown that there was a weak relationship between lighting and the incidence of occupational accidents. The highest intensity of lighting collected was 592.5 lux. The intensity had already exceeded the Threshold Value but it could still be tolerated by the workers by using the PPE to reduce the risk of visual impairment [29]. It was different from the result of this study showing that the level of noise did not disturb the

condition of the workers when performing the job. Consequently, it did not show a significant relationship between the intensity of lighting and the incidence of occupational accidents.

### III. DATA COLLECTION

A quantitative study is a research approach used in this study. The type of study used based on the method of data collection in this study was an observational study. The activity of observing a certain situation without giving any treatment is the characteristic showing that the study is categorized as an observational study. The process of data collection was done in a certain period so that the research design of this study was a *cross-sectional study*.

The population used in this study was all workers in the production department, namely 18 workers of the informal sector for the metal. The sampling method used in this study was total sampling. It indicated that the total sample used in this study was all population in the production department of the informal industry for metal located in Sidoarjo in 2019. The research variables analyzed in this study consisted of the *exogenous variable* and the *endogenous variable*.

The exogenous variable in this study was the *lack of control* consisting of OSH policy, OSH training, and the provision of PPE. Meanwhile, the endogenous variables in this study were human factors consisting of individual commitment, knowledge, and work stress; work environment consisting of noise, lighting, and work climate; work behavior; and occupational accidents.

The technique of data collection in this study consisted of three methods, namely questionnaire, document analysis, and laboratory measurement. The data collected descriptively were then analyzed on the relationship between two variables. The correlation analysis between the two variables was done by using the significance test to find out the degree of closeness between the variable that was being correlated. One of the significance tests that could be used according to the scale data of research variables was *Pearson's* correlation test. The significance level could be seen from the *p-value*. If it was less than 0.05, it showed that there was a relationship between the analyzed variables. The nearer the correlation coefficient to a score of +1, the positive correlation became stronger. On the other hand, the nearer the correlation coefficient to a score of -1, the negative correlation became stronger.

#### **Ethics Considerations**

This study has already received the ethical letter from the Medical Research Ethics Committees (KEPK) of the Faculty of Public Health, Universitas Airlangga with Reference No: 131/EA/KEPK/2019 as the ethical code number.

#### IV. DATA ANALYSIS

##### The Frequency Distribution of the *Lack of Control*

Based on Table 1, it shows that the majority of the respondents (77.8%) illustrate the OSH policy in the informal industry for the metal in the ‘moderate’ category. The majority of the respondents (61.1%) illustrate the OSH training in the informal industry for metal in the ‘moderate’ category. Meanwhile, the majority of the respondents illustrate the provision of PPE in the informal industry for the metal in the ‘moderate’ category.

**Table 1.** The Frequency Distribution of OSH Policy, OSH Training, the Provision of PPE, and the Workers of the Informal Industry for the Metal in the Production department, Sidoarjo in 2019

Lack Of Control Factors	Category			Total
	Low	Moderate	High	
<b>OSH Policy</b>				
Frequency	1	14	3	18
%	5,6	77,8	16,7	100,0
<b>OSH Training</b>				
Frequency	6	11	1	18
%	33,3	61,1	5,6	100,0
<b>Provision of PPE</b>				
Frequency	2	15	1	18
%	11,1	83,3	5,6	100,0

##### The Frequency Distribution of Human Factor

Based on Table 2, it shows that the majority of the respondents (72.2%) illustrate the individual commitment in the informal industry for the metal in the ‘moderate’ category. In this study, the majority of the respondents (44.4%) illustrate the workers’ knowledge in the ‘moderate’ category.

**Table 2.** The Frequency Distribution of Individual Commitment, the Knowledge of the Workers in the Informal Industry for the Metal in the Production department, Sidoarjo in 2019

Human Factors	Category			Total
	Low	Moderate	High	
<b>Individual Commitment</b>				
Frequency (%)	3 (16,7)	13 (7,2)	3 (11,1)	18 (100,0)
<b>Knowledge</b>				
Frequency (%)	6 (33,3)	8 (44,4)	4 (22,2)	18 (100,0)

Work stress in this study was divided into 4 categories, namely low, moderate, high, and strongly high. Based on Table 3, it shows that the majority of the respondents (77.8%) illustrate work stress in the ‘high’ category.

**Table 3.** The Frequency Distribution of Work Stress in the Workers of the Informal Industry for the Metal in the Production department, Sidoarjo in 2019

Category	Frequency	Percentage (%)
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Low	0	0,00
Moderate	0	0,00
High	14	77,8
Strongly High	4	22,2
<b>Total</b>	18	100,0

**The Frequency Distribution of Work Behavior**

Work behavior in this study was divided into four categories, namely never, sometimes, often, and always. Based on Table 4, it shows that the majority of the respondents (83.3%) illustrate work stress in the ‘sometimes’ category.

**Table 4.** The Frequency Distribution of Work Behavior in the Workers of the Informal Industry for the Metal in the Production department, Sidoarjo in 2019

Category	Frequency	Percentage (%)
Never	3	16,7
Sometimes	15	83,3
Often	0	0,00
Always	0	0,00
<b>Total</b>	18	100,0

**The Frequency Distribution of Work Environment**

Noise in this study was divided into two categories, namely disturbed and not disturbed. Based on Table 5, it shows that the majority of the respondents (61.1%) illustrate the noise in the work environment in the ‘not disturbed’ category. The lighting in the work environment was categorized as ‘not disturbed’ by the majority of the respondents (77.8%). Meanwhile, the work climate in the work environment was categorized as ‘not disturbed’ by the majority of the respondents (66.7%).

**Table 5.** The Frequency Distribution of Noise, Lighting, and Work Climate in the Informal Industry for the Metal in the Production department, Sidoarjo in 2019

Work Environment	Category		Total
	Disturbed	Not Disturbed	
<b>Noise</b>			
Frequency (%)	7 (38,9)	11 (61,1)	18 (100,0)
<b>Lighting</b>			
Frequency (%)	4 (22,2)	14 (77,8)	18 (100,0)
<b>Work Climate</b>			
Frequency (%)	6 (33,3)	12 (66,7)	18 (100,0)

**The Frequency Distribution of Occupational Accidents**

The incidence of occupational accidents in this study was divided into two categories, namely ‘ever experienced occupational accidents’ and ‘never experienced occupational accidents’. Based on Table 6, it shows that the majority of the respondents (66.7%) have ever experienced occupational accidents in the informal industry for the metal.

**Table 6.** The Frequency Distribution of the Incidence of Occupational Accidents while Working in the Workers of the Informal Industry for the Metal in the Production department, Sidoarjo in 2019

Category	Frequency	Percentage (%)
Ever Experienced Occupational Accidents	12	66,7
Never Experienced Occupational Accidents	6	33,3
<b>Total</b>	18	100,0

**The Relationship between *Lack of Control* and Individual Commitment**

The OSH policy and the provision of PPE were correlated with individual commitment. Those two variables had a relationship in the ‘moderate’ category and a positive relationship with individual commitment. It was shown from the p-value in the OSH policy and the provision of PPE that was less than 0.05.

**Table 7.** The Relationship between *lack of control* and individual commitment in the Workers of the Informal Industry for the Metal in the Production department, Sidoarjo in 2019

	Individual Commitment	Conclusion
OSH Policy <i>Pearson Correlation</i> <i>Sig. (2-tailed)</i>	0,488 0,040	Significant
OSH Training <i>Pearson Correlation</i> <i>Sig. (2-tailed)</i>	0,327 0,185	Not Significant
Provision of PPE <i>Pearson Correlation</i> <i>Sig. (2-tailed)</i>	0,510 0.031	Significant

**The Relationship between *Lack of Control* and OSH Knowledge and Work Stress**

OSH policy, OSH training, and the provision of PPE had no relationship with the OSH knowledge of workers. In Table 8, it was shown from the p-value of those three variables that were more than 0.05.

**Table 8.** The Relationship between *lack of control* and OSH knowledge and Work Stress in the Workers of the Informal Industry for the Metal in the Production department, Sidoarjo in 2019

	OSH Knowledge	Work Stress	Conclusion
OSH Policy <i>Pearson Correlation</i> <i>Sig. (2-tailed)</i>	-0,130 0,608	0,037 0,885	Not Significant
OSH Training <i>Pearson Correlation</i> <i>Sig. (2-tailed)</i>	0,027 0,917	-0,075 0,767	Not Significant
Provision of PPE <i>Pearson Correlation</i> <i>Sig. (2-tailed)</i>	0,073 0,772	-0,393 0,106	Not Significant

**The Relationship between Human Factor and Work Behavior**

Individual commitment, knowledge, and work stress had no relationship with the work behavior of the workers. Table 9 was shown from the p-value of those three variables that were more than 0.05.

**Table 9.** The Relationship between Human Factor and Work Behavior of the Workers in the Informal Industry for the Metal in the Production department, Sidoarjo in 2019

	Work Behaviour	Conclusion
Individual Commitment <i>Pearson Correlation</i>	0,237	Not Significant

Knowladge	<i>Sig. (2-tailed)</i>	0,344	Not Significant
	<i>Pearson Correlation</i>	-0,027	
Work Stress	<i>Sig. (2-tailed)</i>	0,279	Not Significant
	<i>Pearson Correlation</i>	0,239	
	<i>Sig. (2-tailed)</i>	0,339	

**The Relationship between Work Behavior and the Incidence of Occupational Accidents**

Table 10 shows that work behavior has no relationship with the incidence of occupational accidents. It was shown from the *p-value* of work behavior that was more than 0.05. Noise, lighting, and work climate had no relationship with the incidence of occupational accidents. It was shown from the *p-value* of those three variables that were more than 0.05.

**Table 10.** The Relationship between Work Behavior and the Incidence of Occupational Accidents in the Workers of the Informal Industry for the Metal in the Production department, Sidoarjo in 2019

		Accidents	Conclusion
Work Behaviour	<i>Pearson Correlation</i>	0,316	Not Significant
	<i>Sig. (2-tailed)</i>	0,201	
Noise	<i>Pearson Correlation</i>	0,081	Not Significant
	<i>Sig. (2-tailed)</i>	0,751	
Lighting	<i>Pearson Correlation</i>	0,094	Not Significant
	<i>Sig. (2-tailed)</i>	0,709	
Work Climate	<i>Pearson Correlation</i>	0,000	Not Significant
	<i>Sig. (2-tailed)</i>	1,000	

**V. STUDY RESULT, SUMMARY AND CONTRIBUTION**

The Relationship between OSH Policy and Individual Commitment, the result of the study showed that the relationship between OSH policy and individual commitment resulted in a positive relationship. The data supporting the relationship between OSH policy and individual commitment was that the majority of the respondents had a fairly good level toward individual commitment and OSH policy. The better the OSH policy in the company, the individual commitment of the workers will get better. The Relationship between OSH Training and Individual Commitment, the result showed that there was no relationship between OSH training and individual commitment. The total frequency for both OSH training and individual commitment was shown by the majority of the respondents in the ‘fairly good’ category.. The Relationship between the Provision of PPE and Individual Commitment, the result of the study showed that there was a positive relationship between the provision of PPE and individual commitment. The data supporting the relationship between the provision of PPE and individual commitment was that the majority of the respondents had a fairly good level toward individual commitment and the provision of PPE was categorized as ‘fairly good’. The fairly good provision of PPE in the informal industry will increase the individual commitment of the workers towards the job they perform. The Relationship between OSH Policy and Knowledge, the result of the study showed that there was no relationship between OSH policy and knowledge. Consequently, those two variables did not result in the direction of a relationship that could be explained. The Relationship between OSH Training and Individual Commitment, the result showed that there was no relationship between OSH training and individual commitment. The total frequency for both OSH training and individual commitment was shown by the majority of the respondents in the ‘fairly good’ category. The Relationship between

the Provision of PPE and Knowledge, the result of the study showed that there was no relationship between the provision of PPE and knowledge. Hence, those two variables did not result in the direction of a relationship that could be explained. The total frequency of the provision of PPE showed that the majority of the respondents were categorized as 'fairly good' and the knowledge was also categorized as 'fairly good'. The more frequent the workers use the PPE while working, it does not affect the workers' knowledge related to PPE to be better. The Relationship between OSH Policy and Work Stress, the result of the study showed that there was no relationship between OSH policy and work stress. Hence, those two variables did not result in the direction of a relationship that could be explained. The total frequency of OSH policy showed that the majority of the respondents were categorized as 'fairly good', while work stress was categorized as high. The Relationship between OSH Training and Work Stress, the result of the study showed that there was no relationship between OSH training and work stress. Hence, those two variables did not result in the direction of a relationship that could be explained. The total frequency of OSH training showed that the majority of the respondents were categorized as 'fairly good', while work stress was categorized as high. Good OSH training has no relationship with the workers' condition because the workers' stress is categorized as 'high'. The Relationship between the Provision of PPE and Work Stress, the result of the study showed that there was no relationship between the provision of PPE and work stress. Hence, those two variables did not result in the direction of a relationship that could be explained. The total frequency of the provision of PPE showed that the majority of the respondents were categorized as 'fairly good', while work stress was categorized as high. The good provision of PPE did not reduce the high level of work stress. The Relationship between Individual Commitment and Work Behavior, the result of the study showed that there was no relationship between Individual Commitment and work behavior. Hence, those two variables did not result in the direction of a relationship that could be explained. The Relationship between Knowledge and Work Behavior, the result of the study showed that there was no relationship between knowledge and work behavior. Hence, those two variables did not result in the direction of a relationship that could be explained. The total frequency of knowledge showed that the majority of the respondents were categorized as 'fairly good' and work behavior was also categorized as 'fairly good'. The Relationship between Work Stress and Work Behavior, the result of the study showed that there was no relationship between work stress and work behavior. Hence, those two variables did not result in the direction of a relationship that could be explained. The total frequency of work stress showed that the majority of the respondents were categorized as 'high', while work behavior was categorized as 'fairly good'. The Relationship between Work Behavior and the Incidence of Occupational Accidents, the result of the study showed that there was no relationship between work behavior and the incidence of occupational accidents. Hence, those two variables did not result in the direction of a relationship that could be explained. The total frequency of work behavior showed that work behavior in the majority of the respondents was categorized as 'sometimes' and the respondents stated that they had ever experienced occupational accidents. The Relationship between Work Climate and the Incidence of Occupational Accidents, the result of the study showed that there was no relationship between work climate and the incidence of occupational accidents. Hence, those two variables did not result in the direction of a relationship that could be explained. The total frequency of work climate showed that the majority of the respondents were categorized as 'not disturbed', and the respondents stated that they had ever experienced occupational accidents. The Relationship between Noise and the Incidence of Occupational Accidents, the result of the study showed that there was no relationship between noise and the incidence of occupational accidents. Hence, those two variables did not result in the direction of a relationship that could be explained. The total frequency of noise showed that the majority of the respondents were categorized as 'not disturbed' and the respondents stated that they had ever experienced occupational accidents. The Relationship between Lighting and the Incidence of Occupational Accidents, the result of the study showed that there was no relationship between lighting and the incidence of occupational accidents.

Hence, those two variables did not result in the direction of a relationship that could be explained. The total frequency of lighting showed that the majority of the respondents were categorized as 'not disturbed' and the respondents stated that they had ever experienced occupational accidents.

Based on the result of the study, it concludes that only the *Lack of control* (OSH policy and the provision of PPE) that has a significant relationship with individual commitment. Other variables investigated in this study are not correlated to one another. The authors declare that there was no conflict of interest with respect to the research, authorship, and/or publication of this article. The author(s) disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: This study was supported by Universitas Airlangga.

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