

**Original article:**

## **The influence of personality types on adherence workers using personal protective equipment at Mega Andalan Kalasan company**

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### **Abstract:**

Personality is a typical part of every individual. It is the difference between an individual with other individuals. Personality is a characteristic of individuals with patterns of behavior, feelings and thoughts that are consistent. This study aims to determine the effect of type personality workers to use Personal Protective Equipment (PPE) compliance with additional internal variables, external workers and the environment itself. Personality (sanguine, melancholic, choleric and phlegmatic), age, education, knowledge, years of training, communication, comfort PPE and company policies analyzed as independent variables and adherence using PPE as the dependent variable. Definitions used personality is personality plus in Littauer with four personality types that Sanguine, choleric, melancholic and phlegmatic. Based on the chi-square test with p-value 0.011 result indicating a significant correlation between personality type by using PPE compliance. Logistic regression analysis showed that a choleric personality type is the type of personality most obedient among other personality types, while the melancholic personality type is the type of personality that do not comply use of PPE. In addition, age was also a significant result . Conclusion: Choleric Personality type and sanguine phlegmatic affect the compliance of the use of PPE for workers at Mega Andalan Kalasan Company. Variable age also has an effect on adherence using PPE.

Keyword: Personality Plus , Adherence , Personal Protective Equipment.

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### **Introduction:**

Accident is an incident which is clearly undesirable and often unpredictable, it can cause loss of good time, possessions, property and casualty occurring within a work process or other related industries. (Heinrich, 1980; OHSAS 18001: 2007; Tarwaka, 2008). Research conducted by the National Safety Council (NSC) (2011) resulted in the fact that 88% of causes of accidents are the unsafe behavior, 10% are caused by unsafe condition and 2% of unknown cause. Dupont (2005) found that during this occupational accidents occurred due to unsafe act by 96% and 4% unsafe condition. Unsafe behavior is behavior by human negligence that often lead to accidents in the workplace (Cooper, 2009).

Study on Mega Andalan Kasalan (MAK) company known increasing number of accidents, number of accidents that occurred in 2013 were 24 accidents, in 2014 as many as 35 crash, and in 2015 a total of 61 accidents. Based on the recapitulation of the team Environment Health and Safety (EHS) shows that there are an increasing number of accidents each year. Accidents that happened partly by workers who do not use PPE properly and correctly, such as hand scraped rough machined surfaces, sparks splashed in the eye at the time of welding fumes and inhaling chemicals from the process of painting.

Results completeness PPE inspection conducted on the production it is known that there are many workers who

do not use a complete PPE. PPE workers use only a portion of which should be used by workers. At the unit KL percentage of workers who do not use a complete PPE reached 48%, 42% HEWP unit, unit HE Assembling 32% and 39% MAPP units. Various measures to prevent accidents and protect workers is to perform the control that starts from elimination, substitution, engineering, administration and last dalian want to use Personal Protective Equipment (PPE). According to Ratna Sari (2012) in his study mentioned that 26.3% of the workforce who rarely use PPE ever had an accident at work. Research conducted by Lucyani in 2011 also stated that 27% of the workforce is still not using PPE at work. Ladeira (2014) also mentioned as much as 71.5% of the workforce are still working without the use of PPE even though the company has made preparations.

Identify the cause of labor is not complying with its obligations to the proper use of PPE needs to be done. Some studies suggest that individual internal factors such as personality type, age, years of relationship with compliance using PPE. External factors such as involving workers in training programs also have a relationship in motivating to comply using PPE (Azis, 2010; Catherina, 2012; Amanto, 2011). Personality types affect the risk of workers injured at work. A study of 416 workers in mind that personality characteristics influence adherence, because every man is different between one another. Littauer (2011) explains that there are four main personality of human beings. A person's

personality type sanguinis (popular), choleric type (strong), the type of melancholy (perfect), type phlegmatis (pacifist). Each personality type has strengths and weaknesses that can be used as the basis of assessment of a person in the act. Every individual has his own way in the face of stimuli that come from individuals and the environment that can affect a person's adherence to a command. So it is necessary to identify the influence of personality types on adherence workers using PPE in MAK company.

#### **Method:**

This study uses quantitative methods observational with cross sectional design. This research was conducted at Mega Andalan Kalasan (MAK) company Yogyakarta, which was conducted in January-July 2016. The population is all employees of MAK company with the composition of the unit KL as many as 104 workers, HEWP unit a total of 106 workers, HE Assembling as many as 111 workers and a total of 61 workers MAPP unit. Samples were taken using stratified random sampling technique. by calculation using software sample size determination in health studies of the samples obtained 92 workers. Data analysis was performed using Chi-square test to determine statistical significance relationship. As for the variable with the ratio scale using different tests that t-test 2 free samples with significance level of 5% or  $\alpha$  5%. Multiple logistic regression was conducted to determine the most dominant factor influencing the use of PPE compliance.

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**Results:**

The results of the study includes the results of descriptive analysis, testing and multivariable bivariate.

Table 3. 1 Distribution of respondents based on their characteristics, length of employment, knowledge, training K3, communications, comfort PPE, company policies, external environmental factors and test bivariable.

Independent Variables	Compliance				Totally		Coefficient of Correlation Value	p-value	Conclusion
	Not Comply		Comply		N	%			
	n	%	n	%					
<b>Personality</b>									
Choleric	23	42.6	31	57.4	54	100	-0.315	0.011	Significant
Phlegmatic	10	55.6	8	44.4	18	100			
Melanchly	15	88.2	2	11.8	17	100			
Sanguinis	2	66.6	1	33.3	3	100			
<b>Age</b>									
Young	36	63.2	21	36.8	57	100	0.220	0.051	Unsignificant
Elderly	14	40.0	21	60.0	35	100			
<b>Education</b>									
Primary School	0	0	0	0	0	0	0.125	0.489	Unsignificant
Junior High School	0	0	0	0	0	0			
Senior High School	49	55.7	39	44.3	88	100			
University	1	25.0	3	75.0	4	100			
<b>Knowledge</b>									
Low	11	52.4	10	47.6	21	100	0.021	1.000	Unsignificant
High	39	54.9	32	45.1	71	100			
<b>Work Period</b>									
< 9	29	61.7	18	38,3	47	100	0.126	0.312	Unsignificant
≥ 9	21	46.7	24	53,3	45	100			
<b>HSE Training</b>									
Yes	30	53.6	26	46.4	56	100	0.019	1.000	Unsignificant
No	20	55.6	16	44.4	36	100			
<b>Communication</b>									
Less	27	54.0	23	46.0	50	100	0.008	1.000	Unsignificant
Good	23	54.8	19	45.2	42	100			
<b>PPE Leisure</b>									
Not Comfortable	13	50.0	13	50.0	26	100	0.055	0.769	Unsignificant
Comfortable	37	56.1	29	43.9	66	100			
<b>Company Policy</b>									

Less	0	0	0	0	0	0	0.080	0.577	Unsignificant
Enough	21	50.0	21	50.0	42	100			
Good	29	58.0	21	42.0	50	100			

Table 3.1 is known that the majority of respondents (62%) in the category of young people with education last at most SMA / SMK (95.7%), knowledge of the PPE is high as 77.2%. Personality type most respondents are choleric type (58.7%), while phlegmatis as much as 19.6%, melancholic and sanguine as much as 18.5% by 3.3%. that the average tenure of workers of MAK company is 9.09 years with a standard deviation of 6.061 years. Minimum term of one year and a maximum of 24 years. The number of respondents with tenure of less than 9 years of as much as 51.1%.

Most respondents had never attended HSE training (60.9%), 54.3% of respondents said that communication between workers with management and fellow workers is still not good, most respondents (71.7%) feel

comfortable using PPE at work and the company's policy is also considered already well underway (54.4%) while the number of workers who do not abide more that 54.4% while workers are less adherent is as much as 45.6%. Based on the test results bivariable, from 9 variables there are two variables that had a p-value <0.025 which personality variables and age. So that these variables can opt into multivariable test.

**3.2Multivariable Analysis**

Multivariable analysis was conducted to determine the effect of independent variables on the dependent variable using logistic regression analysis. Table 7 below is the result of logistic regression.

**Tabel 3. 2Analysis of Logistic Regression**

Independen Variables	Dependent Variables		Conclusion
	Significant	Exp(B)	
<b>Personality</b>			
Choleric	<i>reference</i>		Significant
Phlegmatic	0.345	0.588	Unsignificant (same with Choleric)
Melancholy	0.005	0.100	Signifikan (as opposed to a Choleric)
Sanguinis	0.450	0.379	Tidak signifikan (same with Choleric)
<b>Age</b>			
Young	<i>reference</i>		
Elderly	0.049	2.524	Significant

Table 3.2 shows that the choleric personality types are more obedient than phlegmatis personality type, melancholic and sanguine after controlled by age, education, knowledge, years of HSE training, communications, comfort PPE and company policies.

There is no difference between the type of personality phlegmatis and sanguinis with a choleric personality type on the level of compliance of PPE after controlled by age, education, knowledge, years of HSE training, communications, comfort PPE and company policies.

There is a difference between melancholy personality type with a choleric personality type of the level of compliance of PPE after controlled by age, education, knowledge, years of HSE training, communications, comfort PPE and company policies.

The independent variables that most influence on the dependent variable (compliance) is the personality variables with a significance value of 0.038 compared with the age variable is 0,049.

#### **Discussion:**

#### **4.1 Influence of Personality Type Full Of Compliance Using PPE**

The results showed that there is influence between the type of personality to compliance with PPE for workers at MAK company. Choleric personality is the personality of the most obedient in the use of personal protective equipment at work. This is consistent with the nature of the choleric who likes to lead, make decisions, dynamic and active. Type choleric easier to accept and carry out regulations that apply to somewhere (Littauer, 2011).

Personality type influences the way of thinking, way of working to a pattern of life. Personality type is also closely related to how one deals with something that happened in his life. In this study, the type of personality that is displayed is the personality type personality plus constituted of four kinds of body fluids found on a person. When a fluid found in the body exceeds the proportion that should it will cause their psychological traits typical of a person (Littauer, 2011).

Phlegmatis and sanguine personality type does not show any differences with choleric, meaning that both submissive personality type using PPE at work. The different results shown on the type of melancholy that showed a significant difference with a choleric personality type. Melancholic personality types tend to be non-compliant use of PPE at work. Although famous for its melancholy private personal perfect and orderly, but the tendency to think about quality than quantity would be devastating for the melancholic personality type.

Little damage to the PPE or PPE size that does not fit very influential for the melancholic personality type so there is a feeling reluctant to wear them. Melancholic emotional nature tend to be flat and calm, making other people can not easily understand what is desired by a person with a melancholy personality type. Unlike a choleric can easily express opinions, melancholic types tend to harbor what is desired.

Good communication is two-way and will facilitate the expression of melancholy personality type that will be known problems that cause melancholy personality type disobedient use of PPE during work (Littauer, 2011).

#### **4.2 Effect of Age Of Compliance Using PPE**

The study states there is influence between the worker's age to compliance using PPE. The results of this study together with the results of research Saputri (2014) which states there is a significant relationship between age, knowledge with compliance using PPE. However, these results differ from the results of research conducted by Saputri Doy (2014), which states there is no significant relationship between individual characteristics using PPE compliance. This gives the conclusion that things can affect workers' adherence to compliance in following the rules.

According Suma'mur (2009), some of the physical capacity, such as vision, hearing, and reaction speed decreases after the age of 30 years or more. Otherwise they are classified in this age might be more cautious, more reliable and more aware of the dangers than younger workers

Age of workers is one of the considerations in the placement of workers, this is to avoid the low productivity of workers. Workers who are elderly should be placed at work, which does not require physical exertion and heavy responsibility, otherwise workforce is young and energetic work should be given a bit heavy compared to older workers (Sastrohadiwiryo, 2005).

#### **4.3 Effects Against Education Compliance Using PPE**

Most of the workers had an education past high school / vocational school. The study states that the education variable has no effect on adherence using PPE. The results of this research in line with the results of research Hendra (2011) which menyatakan no relationship between education and the practice of using PPE. But the result is different from the research Handayani (2010) which states that education is a very important factor in the work. Although this study did not affect compliance education using PPE at work, but the provision of regular information related to the effect of not using PPE can be done so that workers can get used to using PPE when working. Personal approach and giving appreciation can also be done to raise awareness so that workers who use PPE feel cared for.

#### **4.4 Effect of Knowledge Against Compliance Using PPE**

Knowledge is one of the factors in a person in the safety triad component that would affect adherence (Geller, 2001). The study states there is no influence between knowledge and adherence using PPE. This study is in line with the results of research conducted by Sumarna (2013) which states that knowledge is not a determinant or factors that influence the behavior of the use of PPE. Similar results were found in studies Hastanti (2004) which states that the knowledge of good and less, does not necessarily lead to discipline wayward using PPE when running the job.

The results showed that most of the workforce has a good knowledge of the PPE. Good knowledge is obtained through training or direction given by section K3 companies. Labor knowing that PPE is able to reduce the severity of workplace accidents but does not guarantee to be noncompliant using PPE. Hastanti (2004) states that there is no correlation between knowledge with the use of PPE, knowledge of the good and less does not always cause the discipline to stick using PPE when working.

#### **4.5 Effect of the Work Period Toward Compliance Using PPE**

According Notoatmojo (2012), working life is one of the characteristics of employment that could shape a person's behavior. Workers who have a longer service life tend to be more familiar with working conditions than new workers. When workers are familiar with working conditions and their potential dangers, the workforce would be obedient in using PPE.

The statement was not proven in this study that states there is no effect between working period with compliance using PPE. Sertiya (2014) states that there is no relationship between tenure to compliance with PPE use in production workers. The company has made a policy regarding the use of PPE so that all workers are obliged to wear PPE. Surely tenure can describe a large percentage of compliance.

The duration of work can not be sure that the attitude in the usage of PPE better. This is in line with the opinion of Robbins and Judge (2008) who argued that there is no reason to believe that workers who have long been on the job would better adherence to existing regulations.

#### **4.6 Effect Against K3 Compliance Training Using PPE**

Atmodiwirio (2002) state that training is an activity that is designed to help workers acquire the knowledge, skills, and improve attitudes, behaviors required to perform their jobs well. So manpower training should make policies behave according to PPE use for training is one form of guidance that can be pursued to create a docile work force using PPE.

The results of analysis showed no effect of HSE to compliance training using PPE. The results are consistent with Hendra (2011) research which concluded that there is no relationship between obedience training for using PPE. Training is an activity that only lasted some time. This is what makes the training becomes less effective if it is not done routinely. Regular training, supervision and strict rules will allow workers who had attended training can be used to doing what they have learned. The variety

of types of training with a number of employees, may cause workers are not the same in the following types of training.

The need for supervision of the workers to use PPE at work after worker training is a form of intervention that can be done by a company officer and the chairman EHS teams at each production unit. This is done so that workers are not forgotten with HSE and training materials in order to become a habit, so workers will be accustomed to using PPE at work.

#### **4.7 Effect Against Communication Compliance Using PPE**

Communication is one of the factors in behavior related to its compliance with safety theory triad (Geller, 2001). Results showed no effect of communication on adherence using PPE. The results are consistent with Sertiya (2014) research states that there is no significant relationship between communication with compliance.

Direct communication is the most effective way to deliver an opinion. Although in this study, the communication does not have a significant effect on adherence using PPE. Good communication is the communication that runs vertically and horizontally, ie communication between management and workers and workers with workers about the importance of the use of PPE.

The procedure for good communication is also worth noting that the message can be received well. Communication by using language that is easily understood and not offensive will be more readily accepted than convey a message by using scientific language elusive and communication styles that tend to rule.

Personal approach in a casual atmosphere to the workers will be more readily accepted than the formal delivery of the message by way of one-way communication. Utilizing a briefing to greet the workers before starting the job is one way you can do to start building effective communication. Providing the opinion

box for workers who have the melancholy personality types tend to be quiet and difficult to convey their opinions directly. This can be done so that all workers can express their opinions and desires though not directly.

#### **4.8 Effect of Comfort Against Compliance Using PPE**

In the working atmosphere, the comfort of the workplace and other facilities will improve the performance of any labor. Thus expected any facility or work equipment that evoke comfort in use can be used optimally.

Results showed no effect of comfort PPE, PPE compliance. The practice became important with regard to the perception of worker comfort. Although PPE felt comfortable to use when working, but if they are not accustomed to using permanent workers would prefer not to wear.

PPE can deprive the worker to move freely, causing heartburn and not infrequently PPE less correspond to the worker's body size can cause pain. Need supervision and routine observations of the PPE is used to determine whether PPE workers can actually be used properly. Possibility of workers claimed a comfortable only at certain times, for example when the ambient temperature is not too hot like in the morning. This can be seen at the moment of observation during the day obtained the worker is not using the full PPE. Different environmental temperature changes can affect a person's perception of comfort.

PPE comfort perception can be influenced by many factors, one of which the state of the environment. Temperature environment workplace in the morning tends to be cooler than the temperature during the day, so that at the time of observation in the morning more workers who use PPE than during the daytime after the break. At the time of daytime temperatures become hotter in the workplace so that workers sweat more.

#### **4.9 Effect Against Company Policy Compliance Using PPE**

The policies governing the labor for the use of PPE should be stated clearly that PPE is needed manpower to protect themselves and must be obeyed. According Notoatmodjo (2005) policy was a contributing factor to the occurrence or reinforce a behavior. These factors include laws, regulations, controls and so on. Geller (2001) states that the policy is one factor in environment components affecting compliance behavior using PPE in the safety triad.

The results showed no influence between corporate policy compliance using PPE. The results of this study contrast with research Sertiya (2014) which states that there is a relationship between corporate policy compliance using PPE.

The company regulations on the obligation to use PPE is designed to protect workers from the dangers posed in the workplace. Installation of warning banner and to cultivate safety provisions contained in each unit of work. Submission of information regarding the rules and regulations of using PPE in the production area have been submitted by the company. However in this research company policy does not affect the use of PPE in the workplace.

Supervising the implementation of corporate policy is lacking, causing this regulation does not run optimally. Workers who do not obey the rules also do not get the tough sanctions, in accordance with company rules. This

makes the rules companies policy such negligible even in writing is good.

#### **Conclusions:**

Based on the research that the majority of respondents have a personality type choleric, old and young, educated SMA / SMK, knowledgeable, height and length of less than nine years, the majority of respondents do not penah training K3 and have poor communication, majority of respondents say that feeling comfortable in using PPE and assess the company policy is good, personality type choleric, phlegmatis and sanguinis affect the compliance of the use of PPE to workers, training and communications do not affect the compliance of workers to use PPE and Leisure PPE and corporate policies do not affect the compliance of workers against the use of PPE in pekerja. Variabel most dominant influence adherence using PPE are working period after controlled by personality variables, age, education, knowledge, training, communications, comfort PPE and company policies.

#### **Suggestion:**

For the HRD this study can be used as the basis for assessment of candidates during recruitment of workers. Workers with a choleric personality type is more appropriate personality type made as leader in a working group. This research can be used as a basis to intensify surveillance of workers with a melancholy personality type to be more compliant in perusahaan. Bagi other researchers, can continue research with a view to the personality type of the work accident..

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