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"Integrating Personality Traits and Preparedness Against Accidents"

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ABSTRACT
Approximately, 90% of workplace accidents are due to human errors. The study of therelationship between individual differences in personality traits and preparedness against accidentare beneficial in the prevention of these accidents. The aim of the present study was to examinethe relationship between five personality traits (extraversion, agreeableness, conscientiousness,neuroticismandopennesstoexperience)andpreparednessagainstaccidentintheCochinShipyard Limited. This was a descriptive correlational study. The study population consisted ofemployees of Cochin Shipyard Limited in Kerala, India; 200 employees were selected based ontheiravailabilityandacceptabilitytoparticipateinthestudy.Datacollectiontoolsconsistedofthe Big Five Inventory Scale and Safety Aptitude questionnaire. In order to analyse the data,regression analysis was performed using SPSS 20 software

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I. INTRODUCTION

Accident prevention has been traditionally based on learning from accidents and near misses. Researchers from different fields of science and engineering have been trying to develop a theory of accident causation which help to identify, isolate and thus remove the factors that contribute to accidents. The problem is that we have not been able to develop sufficiently good theories, investigation methods which would bring relevant factors for accident prevention.

An injury free work place requires attention to three basic domains: the environment (including tools, equipment and climates of work setting), the person (including employee attitudes, beliefs and personalities) and the behavior (including safe and at-risk work practices, as well as intervening for a coworker's safety). Research has focused primarily on limiting exposure and promoting safety techniques and work redesigning. Various proactive and reactive measures are adopted to avoid accidents. In addition to the already existing safety management system, safety climate and safety culture and behavior-based safety programs were implemented but still the accident occurs. Of the mentioned domains, "the person" (including employee attitudes, beliefs and personalities) remains least explored. Therefore, a paradigm shift is necessary to focus on selecting the right, "safe" working individual in industries.

The purpose of the study is to investigate the relationship between the big five personality traits and preparedness against accidents of worker. Subsequently development of a model with Big Five Personality Traits as a predictor of preparedness against accidents. Thus, to identify and screen those worker characteristics that differentiates a "safe" and "unsafe" worker. Thereby, improving safety in an organization.

II. REVIEW OF LITERATURE

2.1 INTRODUCTION

Why do accidents happen? This question has concerned safety and health decision makers for decades, because in order to prevent accidents we must know why they happen. Over the years, several theories of accident causation have evolved that attempt to explain why accidents occur. Models based on these theories are used to predict and prevent accidents. The most widely known theories of accident causation are the domino theory, the human factors theory, the accident/incident theory, the epidemiological theory, the systems theory, the combination theory, and the behavioral theory.

According to International Labor Office statistics, 120 million occupational accidents occur annually at workplaces worldwide. Of these, 210,000 are fatal accidents. Every day, more than 500 men or women do not come home because they were killed by accidents at work. These are dramatic numbers which draw fairly little

public attention. Considering the fact that accidents take a considerable economic toll from nations, companies and individuals, accidents do not get much publicity.

2.2 THEORIES OF ACCIDENT CAUSATION

Most widely known theories of accident causations are discussed below.

2.2.1 Domino Theory of Accident Causation

An early pioneer of accident prevention and industrial safety was Herbert W. Heinrich, an official with the Travelers Insurance Company. In the late 1920s, after studying the reports of 75,000 industrial accidents, Heinrich concluded that

i. 88 percent of industrial accidents are caused by unsafe acts committed by fellow workers.
ii. 10 percent of industrial accidents are caused by unsafe conditions.
iii. 2 percent of industrial accidents are unavoidable.

2.2.1.1 Heinrich's axioms of industrial safety

Heinrich summarized what he thought health and safety decision makers should know about industrial accidents in 10 statements he called Axioms of Industrial Safety. These axioms can be paraphrased as follows:

1. Injuries result from a completed series of factors, one of which is the accident itself.
2. An accident can occur only as the result of an unsafe act by a person and/or a physical or mechanical hazard.
3. Most accidents are the result of unsafe behavior by people.
4. An unsafe act by a person or an unsafe condition does not always immediately result in an accident/injury.

2.2.1.2 Heinrich's domino theory

According to Heinrich, there are five factors in the sequence of events leading up to an accident. These factors can be summarized as follows:

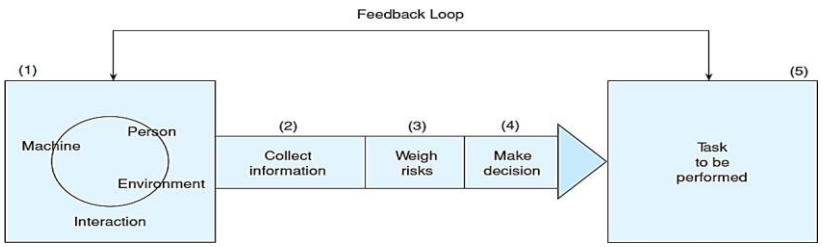
1. Ancestry and social environment: Negative character traits that may lead people to behave in an unsafe manner can be inherited (ancestry) or acquired as a result of the social environment. Social environment are the process of acquiring knowledge of customs and skills in the workplace. Lack of skills and knowledge of performing tasks, inappropriate social and environmental conditions will lead to faults of person.
2. Fault of person: Negative character traits, whether inherited or acquired, are why people behave in an unsafe manner and why hazardous conditions exist. Faults of person or carelessness are negative features of a person's personality although these unwanted characteristics might be acquired.
3. Unsafe act/mechanical or physical hazard: Unsafe acts committed by people and mechanical or physical hazards are the direct causes of accidents.
4. Accident: Accidents are caused by unsafe acts/conditions and subsequently lead to injuries. Typically, accidents that result in injury are mainly caused by falling or being hit by moving objects.
5. Injury: Typical injuries resulting from accidents include lacerations and fractures

2.2.2 Systems Theory of Accident Causation

A system is a group of regularly interacting and interrelated components that together form a unified whole. This definition is the basis for the systems theory of accident causation. This theory views a situation in which an accident may occur as a system comprised of the following components: person (host), machine (agency), and environment. The likelihood of an accident occurring is determined by how these components interact. Changes in the patterns of interaction can increase or reduce the probability of an accident.

The primary components of the systems model are the person/machine/environment, information, decisions, risks, and the task to be performed. Each of the components has a bearing on the probability that an accident will occur.

2.2.3 Human Factors Theory



This theory consists of three factors that lead to human error which causes accidents.
These factors are overload, inappropriate response and inappropriate activities.
Overload: An overload is an imbalance between a person's capacity and the load that person is carrying at a given time. A load in this case consists of burdens resulting from situational factors, internal factors or environmental factors so that a person has to bear them besides their usual tasks and responsibilities. Overload causes strain and overworking which in turn impairs one's ability to think and act rationally when faced with a hazard.
Inappropriate Response: Claims that the way a person responds in such a situation can prevent or cause an accident. If a person detects a hazard and does not correct it then they have responded inappropriately and this response could cause an accident. Inappropriate response could also be a decision on the part of the victim to error in an attempt to deal with the overload. For example, they may forego equipment safety regulations in order to get more work done in a shorter while

2.2.4 Multiple Factors Theory

Grose's multiple factors theory uses four Ms to represent factors causing an accident: machine, media, man, and management (Brauer,1990). Machine refers to tools, equipment, or vehicles contributing to the cause of an accident. Media includes the environmental conditions surrounding an accident, such as the weather conditions or walking surfaces. Man deals with the people and human factors contributing to the incident. Management also incorporates the other three Ms, looking at the methods used to select equipment, train personnel, or ensure a relatively hazard-free environment.
Multiple factors theory examines characteristics of each of the four Ms:

2.3 INDUSTRIAL/ORGANIZATIONAL PSYCHOLOGY

Industrial/organizational (I/O) psychology is the study of the psychology of work and includes the study of people, organizations, management, and behaviors (James and Mazerolle, 2002). Industrial psychology, also known as personnel psychology, includes the study of job performance and analysis, staffing and recruitment, and abilities. Organizational psychology studies organizational behavior and job satisfaction, leadership, motivation, job design, career counseling as well as personality characteristics pertinent to a specific job (James and Mazerolle, 2002). The application of personality psychology to industrial and occupational fields evolved in the late 1980s. Employers traditionally used personal interview and cognitive testing to predict worker performance and subsequent hiring. However, fears of discrimination led to the development of instruments able to measure predicted performance based on personality measures instead. The successful use of such an instrument on U.S. Army recruits broadened its use in the general population. Researchers began using psychological measures to predict outcomes such as job performance, job satisfaction and absenteeism of employees (Roberts and Hogan, 2001).

2.4 PERSONALITY

What defines a personality is a subject as broad and diverse as the study of psychology. Webster's defines personality as "the complex of characteristics that distinguishes an individual; the totality of the individual's behavioral and emotional characteristics" (Merriam-Webster online, 2005). The word personality comes from the Latin word persona, meaning mask. Therefore, personality can be viewed as the different masks a person wears. The term personality can be used in two differing ways. The first refers to the distinct impression a person makes on another. In this use, personality is similar to reputation and is defined from the perspective of the observer. Secondly, personality may also refer to the essence inside each person that explains behavior and creates an outward impression on others.

2.5 BIG FIVE TRAIT THEORY

Trait-based personality theory has a rich history dating back to Francis Galton's (1884) scan of a dictionary and subsequent proposition of a list of 1,000 words that could describe personality. In 1932, McDougall raised interest in identifying personality traits and concluded that, "Personality may be broadly analyzed into five distinguishable but separate factors, namely, intellect, character, temperament, disposition, and temper each of these is highly complex andcomprises many variables". 1n the year 1937, Allport used the dictionary to identify terms that described personality traits resulting in 4,504 terms that "designate generalized and personalized determining tendencies".

III. METHODOLOGY

3.1 RESEARCH DESIGN

Research design is the plan and structure of investigation so conceived as to obtain answers to research questions. A quantitative approach was followed. Burns and Grove in 1993 define quantitative research as a formal, objective, systematic process to describe and test relationships and examine cause and effect interactions among variables. A descriptive survey design was used. A survey is used to collect original data for describing a population too large to observe directly. A survey obtains information from a sample of people by means of self-report, that is, the people respond to a series of questions posed by the investigator. In this study the information was collected through self-administered questionnaires distributed personally to the subjects by the researcher.

3.2 PARTICIPANTS AND PROCEDURES

Participants for this study were purposively drawn from the employees of Cochin shipyard Limited. Selection was also based on their availability and acceptability to participate in the study. A total of 240 respondents who worked at Cochin Shipyard were administered for this research. The questionnaire and the purpose it served were explained to the employees, where after they were asked to complete the survey

3.3 DATA COLLECTION METHOD

A questionnaire was chosen as data collection instrument. A questionnaire is a printed self-report form designed to elicit information that can be obtained through the written responses of the respondents. Questionnaires were decided upon because of the following:

a. They ensured a high response rate as the questionnaires were distributed to respondents to complete and were collected personally by the researcher.

b. They required less time and energy to administer.

c. They offered the possibility of anonymity because subjects' names were not required on the completed questionnaires.

d. There was less opportunity for bias as they were presented in a consistent manner.

e. Most of the items in the questionnaires were closed, which made it easier to compare the responses to each item.

3.4 INSTRUMENTS

The instruments used for this study were Big Five Inventory to measure personality traits and safety aptitude questionnaire (SAQ) to measure the preparedness against accidents.

3.5 DATA ANALYSIS

Data collected were analyzed through the use of IBM Statistical Package for Social Sciences (SPSS 20) software and Microsoft Excel. In analyzing the data, tables and figures were used as analytical tools. Pearson's correlation analysis was used to study the correlation relationship between each variable. Besides that, multiple linear regression was conducted in order to analyze the relationship between the independent variables (Extraversion, Agreeableness, Conscientiousness, Neuroticism and Openness to Experience) as a whole towards the dependent variable (Safety Aptitude). The p-value of each independent variable was used to reach a decision whereby the p-value of less than 0.05 of the independent variable shows a significant relationship with the dependent variable. Quantitative explanations were made of quantitative data to give meaning to them as well as explain their implications. From these, appropriate conclusions and recommendations were made from the findings of the research.

IV. RESULTS AND DISCUSSIONS

4.1 RESULTS

The data were analyzed using Pearson correlation coefficient and multiple regression using ordinary least square to investigate the relationship among the variables and to clarify the relationship between independent variables of personality trait (Extraversion, agreeableness, conscientiousness, neuroticism and openness to experience) and dependent variable preparedness against accident (safety aptitude). IBM SPSS Statistics 20 was used for analysis.

4.1.1 Descriptive Statistics

The basic statistics like the mean and standard deviation of the dependent variables i.e. preparedness against accidents (safety aptitude) and of the independent variables extraversion, agreeableness, conscientiousness, neuroticism and openness to experience are presented in table 4.1.

Table 4.1 Descriptive Statistics

	Mean	Std. Deviation	N
SAFETY_APTITUDE	73.7300	9.46175	200
OPENNESS	69.9000	7.96601	200
CONSCIENTIOUSNESS	74.7265	11.52800	200
EXTRAVERSION	68.0500	8.90048	200
AGREEABLENESS	76.7745	10.45533	200
NEUROTICISM	54.1750	9.49117	200

4.1.2 Correlation Analysis

Correlations reveal several significant relationship between the personality traits and the preparedness against accidents. In table 4.2, it can be seen that bivariate correlations exist between all study variables. Note that there are statistically significant positive correlations between all the five factors of personality (extraversion, agreeableness, conscientiousness, neuroticism and openness to experience) and safety aptitude. The strongest correlation is between conscientiousness and safety aptitude (r = .773, p <.01). Followed by agreeableness and openness, positively correlated with safety aptitude (r = .686, p <.01 and r = .649, p <.01) respectively. Extraversion was found to be positively correlated with safety aptitude (r = .404 p <.01). While, neuroticism shows the least significant positive correlation (r = .224, p <.01).

Table 4.2 Correlation Analysis

		SAFETY_APTITUDE	OPENNESS	CONSCIENTIOUSNESS	EXTRAVERSION	AGREEABLENESS	NEUROTICISM
SAFETY_APTITUDE	Pearson Correlation	1					
	Sig. (2-tailed)						
	N	200					
OPENNESS	Pearson Correlation	.649**	1				
	Sig. (2-tailed)	.000					
	N	200	200				
CONSCIENTIOUSNESS	Pearson Correlation	.773**	.698**	1			
	Sig. (2-tailed)	.000	.000				
	N	200	200	200			
EXTRAVERSION	Pearson Correlation	.404**	.399**	.436**	1		
	Sig. (2-tailed)	.000	.000	.000			
	N	200	200	200	200		
AGREEABLENESS	Pearson Correlation	.686**	.655**	.742**	.424**	1	
	Sig. (2-tailed)	.000	.000	.000	.000		
	N	200	200	200	200	200	
NEUROTICISM	Pearson Correlation	.224**	.236**	.163*	.293**	.180*	1
	Sig. (2-tailed)	.001	.001	.021	.000	.011	
	N	200	200	200	200	200	200

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

4.1.3 Multiple Regression Analysis

Multiple regression is one of the statistical technique to explore the relationship between a dependent variable and a number of independent variables. In this study, statistical test have been performed with significance level 0.05. As shown in multiple regression coefficient table 4.3 using all five independent variable, the big five traits extraversion (β = .026, p = 0.631) and neuroticism (β = .066, p = 0.149) did not serve as a significant predictor of safety aptitude (preparedness against accident). Thus, these two traits failed to enter the multiple regression equation.

Table 4.3 Multiple Regression Coefficient with five variables.

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	12.001	4.238		2.831	.005		
	OPENNESS	.168	.075	.142	2.231	.027	.458	2.185
	CONSCIENTIOUSNESS	.417	.059	.509	7.132	.000	.362	2.761
	EXTRAVERSION	.026	.053	.024	.481	.631	.738	1.354
	AGREEABLENESS	.176	.061	.194	2.879	.004	.405	2.468
	NEUROTICISM	.066	.045	.066	1.451	.149	.894	1.118

a. Dependent Variable: SAFETY_APTITUDE

In model 1 (table 4.4)., the effect of conscientiousness on safety aptitude (preparedness against accident) was tested (R2 = .597, p < 0.001). It alone explained about 59% of the variability in safety aptitude (preparedness against accident). Whereas, in model 2 the effect of conscientiousness and agreeableness on safety aptitude (preparedness against accident) was tested (R2 = .626, ΔR2 = 0.028 p < 0.001), which was a significant predictor of safety aptitude (preparedness against accident) that explained 62% of variability. In model 3, conscientiousness, agreeableness and openness to experience significantly predicted safety aptitude (R2 = .637, ΔR2

= 0.012 p < 0.05).

Table 4.4 Stepwise Multiple Regression Model

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.773[a]	.597	.595	6.02090	.597	293.443	1	198	.000	
2	.791[b]	.626	.622	5.81952	.028	14.940	1	197	.000	
3	.798[c]	.637	.632	5.74051	.012	6.460	1	196	.012	1.522

a. Predictors: (Constant), CONSCIENTIOUSNESS

b. Predictors: (Constant), CONSCIENTIOUSNESS, AGREEABLENESS

c. Predictors: (Constant), CONSCIENTIOUSNESS, AGREEABLENESS, OPENNESS

d. Dependent Variable: SAFETY_APTITUDE

4.1.3.1 Model diagnostics

The effectiveness of the given model is examined using coefficient of determination R2, which is a measure of how much of the variability in the outcome is accounted by the predictors. For this model the R2 value is given in the table 4.5.

Table 4.5 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
3	.798[a]	.637	.632	5.74051	.637	114.874	3	196	.000	1.522

a. Predictors: (Constant), OPENNESS, AGREEABLENESS, CONSCIENTIOUSNESS

b. Dependent Variable: SAFETY_APTITUDE

For this model, the value of adjusted R2 suggests that 63.7% of the response variation is explained in this linear model.

4.1.3.2 ANOVA Summary for personality traits as predictors of safety aptitude

The output (table 4.6) contains the analysis of the variance (ANOVA), that tests whether the model is significantly better predicting the outcome than using the mean as best guess. In the regression equation model, conscientiousness, agreeableness and openness predict statistically significant safety aptitude (F(3, 196) = 114.87, P<0.001). This is consistent with hypothesis one that big five personality factors will jointly and significantly influence safety aptitude (Preparedness against accident).

This F-statistic is a ratio of the variability between groups compared to the variability within the groups. If this ratio is large then the p-value is small producing a statistically significant result (i.e. rejection of the null hypothesis).

Table 4.6 ANOVA Summary

Model		Sum of Squares	df	Mean Square	F	Sig.
3	Regression	11356.539	3	3785.513	114.874	.000[b]
	Residual	6458.881	196	32.953		
	Total	17815.420	199			

a. Dependent Variable: SAFETY_APTITUDE

b. Predictors: (Constant), OPENNESS, AGREEABLENESS, CONSCIENTIOUSNESS

4.1.3.3 Multiple regression coefficients for big five personality traits as a predictor of safety aptitude

The table 4.7 shows the multiple regression coefficients for big five personality traits as a predictor of safety aptitude. Of the personality traits, Conscientiousness ($\beta = .420$, $p < .001$) significantly accounted for the greatest variance when predicting safety aptitude. Agreeableness ($\beta = .183$, $p = .003$) added significantly to the prediction of safety aptitude, while Openness to Experience ($\beta = .189$, $p = .012$) accounted for slightly less variance. The value of intercept $\alpha = 15.073$.

Table 4.7 Multiple Regression Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
3	(Constant)	15.073	3.706		4.067	.000		
	CONSCIENTIOUSNESS	.420	.058	.511	7.237	.000	.371	2.697
	AGREEABLENESS	.183	.061	.203	3.027	.003	.412	2.425
	OPENNESS	.189	.074	.159	2.542	.012	.471	2.123

a. Dependent Variable: SAFETY_APTITUDE

Ordinary least square is used to determine relationship between independent variables and dependent variable that tries to find the function with best fit which means the distance between the actual data and the predictor is low.

The model for Safety aptitude is given by:

Safety Aptitude = 15.073 + (0.420 X Conscientiousness) + (0.183 X Agreeableness) + (0.189 X Openness to Experience) + e

In addition , diagnostic checking will be implemented to ensure that the assumption of multiple regression are not violated with condition of absence of multicollinearity and singularity, presence of normality, homoscedasticity and independence of residuals.

4.1.4 Testing the Assumptions of Multiple Linear Regression Model

Statistical analysis of the above model is carried out under certain assumptions, absence of multi collinearity and singularity and presence of normality, homoscedasticity and independence residuals.

4.1.4.1 Checking for autocorrelation

Autocorrelation can be checked by using Durbin-Watson test (table 4.8). For independent errors, the Durbin-Watson statistic value lies between 1.5 – 2.5. so the errors (residual) are independent.

Table 4.8 Checking Autocorrelation

Test	TestStatisticValue
Durbin-Watsontest	1.522

4.1.4.2 Multicollinearity diagnostics

Multicollinearity is the undesirable situation were the correlation among the regressors are strong. Multicollinearity increases the standard errors of the coefficients. Tolerance and variance inflation factors are the collinearity factors which help us to identify multicollinearity (table 4.9).

Table 4.9 Checking Multicollinearity

Variables	Tolerance	VIF
CONSCIENTIOUSNESS	.371	2.697
AGREEABLENESS	.412	2.425
OPENNESS	.471	2.123

Here, VIF is < 10 and tolerance > 0.1. Thus, the problem of multicollinearity does not arise in this model.

4.1.4.3 Checking the normality assumption

We look at the residuals to check the assumption that the errors in the model are normalydisributed (Fig.4.1). The simplest approach to check the normality is to plot a histogram and check weather it resembles N(0,1) distribution. The histogram should be a bell shaped and symmetric about 0.

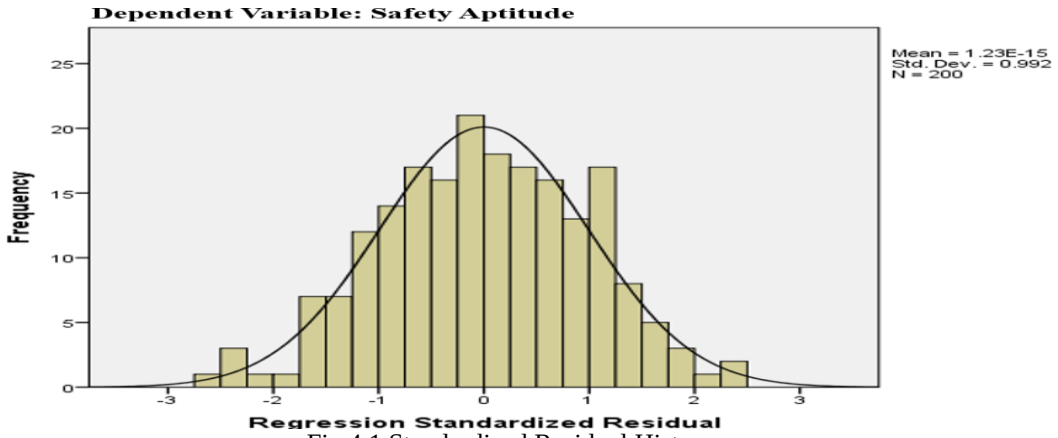


Fig 4.1 Standardized Residual Histogram

A bell shaped curve with mean about 0 shows a normal distribution as seen in the histogram. From the table below, the mean is 0 and variance is 0.985, thus it follows a normal distribution N(0,1). Moreover, the value of Skewness is -0.105 and Kurtosis is -0.255 (table 4.10), hence it symmetric about 0.

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Unstandardized Residual	.037	200	.200*	.995	200	.740
Standardized Residual	.037	200	.200*	.995	200	.740

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Table 4.10 Residual Descriptive

It can also be checked by using non-parametric method (table 4.11) such as one sample Kolmogorov-Smirnov test. If the Sig. value of the Shapiro-Wilk Test and Kolmogorov-Smirnov is greater than 0.05, the data is normal. If it is below 0.05, the data significantly deviate from a normal distribution.

Table 4.11 Test of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Unstandardized Residual	.037	200	.200*	.995	200	.740
Standardized Residual	.037	200	.200*	.995	200	.740

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

4.1.4.4 Checking homoscedasticity of residuals and linearity

Homoscedasticity means that the variance of errors is same across all levels of independent variables. When the variance of errors defers at different values of the independent variables heteroscedasticity is indicated. It can lead to serious distortion of findings and tremendously weaken the analysis, thus increasing the possibility of a Type I error.

If the residuals variance is randomly scattered around zero, providing even distribution. It implies that the assumption of Homoscedasticity is not violated. If there is a high concentration of residuals above zero or below zero, the variance is not constant and thus systematic error exists. In the figure 4.2, the residuals are randomly scattered around zero, providing a relatively even distribution. Hence, the result follows homoscedasticity.

4.1.4.5 Checking assumption of linearity

Standard multiple regression can only accurately estimate the relationship between dependent and independent variables, if the relationships are linear in nature. If the relationship between dependent and independent variables is not linear, the result of regression analysis will underestimate the true relationship. Thus, it increases the chances of Type II errors. Residual plots can be used to check this assumption. Random, patternless residuals imply independent errors. As shown in the figure 4.2, random, pattern less residuals indicate linear relationships.

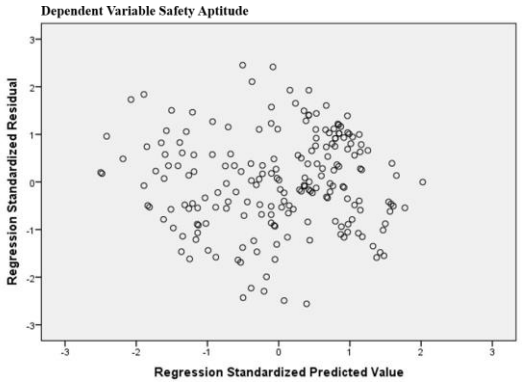


Fig 4.2 Scatter Plot Checking Homoscedasticity of Residuals and Linearity

4.2 DISCUSSION

The goal of present study was to examine the relationship between personality trait and preparedness against accident. This study added a unique contribution to safety literature by exploring the role of personality trait in understanding the employee's preparedness accidents. The major question that was intended to address with this project was, "How do personality trait interact with preparedness against accident".

4.2.2 Agreeableness and Safety Aptitude

The present study found that agreeableness is positively correlated with safety aptitude ($r=0.686$; $p < 0.01$). This has been confirmed by multiple regression analysis ($\beta = .183$, $p < .001$). This is supported by Cellar et al., 2004, suggesting agreeableness was associated with involvement in fewer accidents, perhaps because of greater compliance with safety procedures. Hofmann and Stetzer (1996) suggest that those high in agreeableness are more likely to approach team members who are not acting in a safe manner and try to promote and establish team safetynorms. In addition, these individuals with high agreeableness is most salient in interpersonal situations that involve collaboration with coworkers (Barrick and Mount, 1991).

V. SUMMARY AND CONCLUSIONS

5.1 SUMMARY AND CONCLUSION

From the findings of the present study, it is quite evident that the Big Five Traits (Extraversion, Agreeableness, Neuroticism, and Openness to experience and Conscientiousness) are correlated with safety aptitude. However, statistical analysis with regression using regression model, only three variables (Conscientiousness, Agreeableness, and Openness) significantly predicted the safety aptitude.

Workplace accidents disable and takes lives of thousands of people every year. Although, safety can be improved through efforts such as better safety management, process design, safe environment etc. safety also relies on human elements to a large extent. The result of this study support for utility of individual difference that is personality traits in predicting preparedness against accidents. Thus, understanding personality traits of employees become important predicting tool to ensure safety. People hired using this tool provide a base line defense against hiring unsafe workers. Practically, mangers will be able to benefit from the study when selecting the employees for particular jobs or employee rotation to better fit the criteria. Selective hiring offers a proactive approach to maintain workplace safety by removing employees who are unsafe. In summary the current study contribute to the personality traits as a predictor of preparedness against accident literature by exploring the interactive relationship between them.

5.2 FUTURE PROSPECTIVE

The overall result of this study suggest several avenue of future research. First, replication of this study should be done with larger sample size on different industries so as to generate a generalized tool. Validation of the tool should be made by assessment of employees before giving training and after safety training. Thus, to find the difference in safety outcome with respect to personality traits.

In addition to Big Five, researchers have proposed various other dimensions of personality these include self-monitoring, self-esteem, and self-efficacy. Self-monitoring refers to the extent to which a person is capable of monitoring his/her actions and appearance in social situations. It measure the ability to modify their behavior according to the demands of situation they are in and to manage their impression effectively. Self-esteem is the degree to which a person has overall positive feelings about him/her-self people with self-esteem view themselves in a positive light, are confident and respect themselves. Self-efficacy is a belief that one can perform a specific task successfully. People with high self-efficacy actually set higher goals for themselves and

are more committed to their goals. Employees should be aware that survey is confidential and anonymous. Also, make sure that the test does not discriminate against people on the basis of sex, race, age, disabilities and legally protected characteristics

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