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IMPACT OF WORKERS BEHAVIOURAL TRAITS ON SAFETY PERFORMANCE OF PETROL STATIONS IN SELECTED STATES IN THE NIGER DELTA

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ABSTRACT:

This study was conducted to investigate the impact of workers behavioural traits on safety performance of petrol stations operating in selected states in the Niger Delta. Two variables were used to capture safety performance, namely near-miss occurrence and accident occurrence while five personality traits factors namely openness, neuroticism, agreeableness, extraversion and conscientiousness were used to capture behavioural traits. The study adopted cross-sectional and correlational research designs. Multi-stage sampling technique was used to sample petrol stations operating in three states in the Niger Delta (Akwa-Ibom, Bayelsa, and Rivers States) while Taro Yamane formula was used to calculate sample size of 440 petrol station attendants from the study population. Structured questionnaire designed based on 5-point Likert scale was used for data collection while reliability of the instruments was determined using Cronbach alpha index. Descriptive statistics and regression model were used for the data analysis. The results of descriptive statistics revealed that the petrol station attendants showed good personality traits (WA= 3.57 > 3.00) and safety performance of the petrol stations was good (WA= 3.47 > 3.00). The regression models revealed that the workers behavioural traits had positive and significant impact on safety performance of the petrol stations (B = 2.192 p-value = 0.001 < 0.05). Therefore, it was concluded that improvement in the workers behavioural traits would trigger corresponding improvement in the safety performance of the petrol stations in the Niger Delta.

Keywords:

Workers Behavioural Traits, Safety Performance, Petrol Stations, Niger Delta.

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1. Introduction

Petroleum products remain the only fuel used in powering automobile and most heavy machines used in industries in Nigeria with little or no viable alternative in sight. This situation made Petrol stations (PS) one of the most lucrative businesses in Nigeria as automobile users, industries and households depend on their services as dependable source of power on daily basis. Petroleum products commonly sold in petrol stations are premium motor spirit (PMS), kerosene, diesel and cooking gas. Currently, urban development has increased the need for petroleum products with increase in number of automobiles, new households, and industrial activities in Nigeria. This condition has resulted to urgent need to make petroleum products readily accessible thus leading to establishment of safety and suitable petrol stations by government and private individuals (Afolabi, 2011).

Worker's behaviour traits is the way the individual worker reacts to situations in the workplace. There is need for workers to behave in a sensible way especially in petrol stations. This is not only to gain appreciation and respect from others and management but also to maintain a healthy workplace. Adherence to workplace rules and regulations requires good behaviour. Several factors have been identified as indicators of workers behaviour traits and they include conscientiousness, emotional stability, extraversion, openness, agreeableness. From the foregoing it is evident that workers behaviour is a vital component of the safety performance especially in petroleum related industry like petrol stations. Several factors influence human action or behaviour, and these factors include mood, emotion, temperament, attitude, culture, authority, genetics, religion, ethics, health, environment, personality, motivation, training, and experience (Dejoy, 2005; Ifelebeugu*et al*., 2019). Any gap in any one of these factors may result in abnormal human behaviour, which in turn introduces a human hazard into a process leading to accidents or incidents (Griffiths, 2010). While the significance of one factor does not necessarily outweigh the others, for the purpose of this study, workers behaviour will be the mediating factor in this study as this study will explore the mediating effect of workers behaviour in the relationship between safety preparedness and safety performance.

Safety performance is fundamental to the operation of the petroleum related industry like petrol stations. Researchers have shown much interest in safety performance because of its importance in assessing safety conditions in any organization or system (Borman &Motowildo 1993; Clarke, 2006; Neal et al. 2000). Safety performance can be measured at the organizational level by considering the number of occupational accidents or injuries that took place at work. For example, it can also be assessed at the individual level of analysis. At the latter level, the focus is on employee safety behaviour. One model that discusses safety performance at the individual level was developed by Neal et al. (2000). In their attempt to define safety performance, Neal et al. (2000) built on Borman and Motowildo (1993) work on job performance. Borman and Motowildo (1993) postulated that job performance consists of two dimensions: task performance and contextual performance. Meanwhile, good workers behaviours could lead to good safety performance. Improved workers behaviours can contribute to reducing the number of near-misses and injuries (Clarke, 2006). A higher level of good works behaviour will likely reduce the number of accidents and injuries resulting from violating safety rules and procedures. Excellent workers behaviour in terms of safety will likely reduce the number of accidents and injuries through better engagement of employees in safety activities and helping co-workers. A good behaviour translates to high

level of safety compliance and safety participation which is anticipated to have a stronger relationship with safety performance. Therefore, the expression established the need to investigate the impact of workers behavioural traits on safety performance of petrol station operations in the Niger Delta. Some related empirical studies are presented as thus;

Anwar et al. (2017) carried out as study ascertain the personality and performance paradigm in based on the context of developing nations. Personality was captured using five-factor traits namely openness, conscientiousness, extraversion, agreeableness and neuroticism while task performance was the dependent variable. Stratified sampling technique was used to obtain data from hundred and fifty SMEs from different business sectors operating in Gujranwala, Pakistan. Multiple regression analysis was employed in testing the hypotheses. The results revealed that all the personality traits except neuroticism are valid predictors of workers job performance, though the degree and significance of correlation varies.

Soomro et al. (2015) carried out study to ascertain how personality traits predict or affect workers team climate and team performance. In their previous research, they performed a systematic literature review on team climate and team productivity. In progression of their earlier work in this paper, they extended the work and take personality traits as an independent variable over team climate and performance. Thus, this current study reports the results of preliminary data survey, which has been conducted to measure the effects of personality on team climate and team performance. Results show the strong and positive correlation among personality factor Extraversion, team climate and team performance variables.

Gonzalez (2021) in his work examined the relationship between conscientiousness agreeableness, safety locus of control, honesty-humility, and near misses in the automobile maintenance industry in the United States. The results revealed that no statistically notable correlation exist between conscientiousness and near misses ($p = 0.494$), agreeableness and near misses ($p = 0 .175$), safety control locus and near misses ($p = 0.955$), and honesty-humility and near misses ($p=0 .603$). The explanation of Pearson correlation resulted to accepting the null hypothesis. While personality traits have no correlation to near misses in this sample, it was recommended that research should be conducted to ascertain the effect of safety manager on workers safety performance.

Neal et al. (2012) carried out another study to examine the prediction of direction and form of work performance based on Five-factor model of personality traits. Nine construct of work performance are created based on adaption, proficiency and proactive based on the level with which such behaviour triggers or contributes to effectiveness of workers, their team and entire organization. The results revealed that Openness and agreeableness had contradicting impact workers proactivity in the sense that openness was related with proactivity positively whereas agreeableness related negatively with proactivity. Openness also had opposing impact on work performance such that it related positively to personal and organization proactivity but related negatively to team and organization proficiency. It was revealed that Conscientiousness had strongly predicted personal proficiency than other construct whereas the reverse was the case for neuroticism. Extraversion related to personal proficiency negatively. Using better construct or measure of performance that incorporates theoretical basics for differentiating between constructs shows better sense in identifying which personality traits are crucial for different part of work performance.

2. Material and Methods

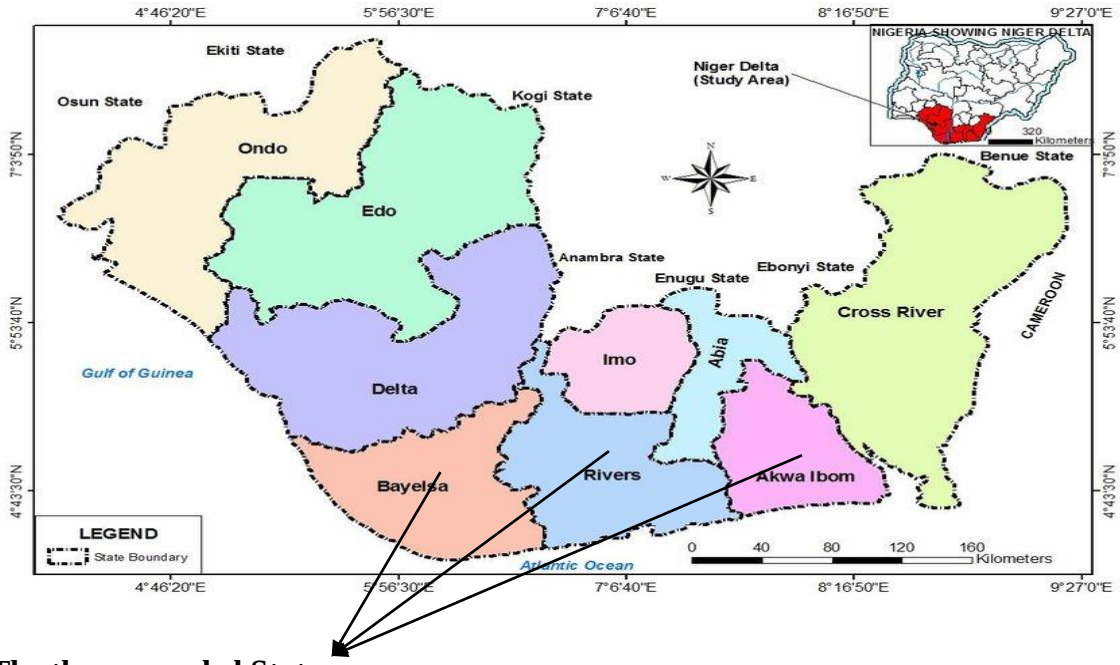
2.1 Research Design

The research design adopted for this study was a combination of cross-sectional and inferential designs. Cross sectional design was adopted to determine; the opinion of the respondents on the level of the safety performance of the petrol stations and to ascertain the nature of behavioural traits of the respondents. This research design was suitable and also appropriate for this section of the research because in cross sectional, the researcher measured only the response, opinion, level of exposures or perception of the study respondent or participants using quantitative data obtain from them and thereby determined the degree or level of the opinion, response, exposure or perception of the respondent or participants without expressing any form of relationship between the variables being studied. Inferential design was also adopted for this study to ascertain the impact of workers behavioural traits (Openness, Agreeableness, Neuroticism, Extraversion and Conscientiousness) on safety performance (Accident Occurrence and Near-miss Occurrence). This research design was suitable because it measured the nature and extent of effect or impact of independent variables (workers behavioural traits variables) on dependent variables (safety performance variables).

2.2 Study area

The study area covered nine Niger Delta States of Nigeria (See Figure 1).The petrol stations located in some selected states were considered in this study. According to Hogan (2013). The Niger Delta is the delta of the Niger River sitting directly on the Gulf of Guinea on the Atlantic Ocean in Nigeria, consisting of nine oil producing states. Niger Delta is Nigeria's centre for oil and gas exploration activities and home to Nigeria's MOA prolific oil and gas zones. The region has a land area of 70,000km^2, representing about 7.5% of the total land mass of Nigeria (Akalonu, 2019). In terms of coordinates, the region lies between lat. 5^o19^1,20.40^{11}N of the equator and long 6^o28^1,8.99^{11}E of the Greenwich meridian line. The region is densely populated with more than 40million people living in it and bounded on the south by the Gulf of Guinea within the Atlantic Ocean and on the east by Cameron (Akalonu, 2019). Predominant occupation of the people is farming and fishing.

The choice of this region was because of the high concentration of petrol stations in this region and continued fire accidents that frequently occur in these petrol stations within this region with associated high-risk of loss of lives and properties or injuries to workers and customers of these petrol stations, thus there is need to assess how the behaviour traits of the petrol pump attendant could affect safety performance of these petrol stations in terms of accident and near-miss occurrence.



The three sampled States

Figure 1: Map of Niger Deltashowing the three sampled states

2.3 Population of the Study

The population of this study comprised all the licensed and registered petrol stations operating in the Niger Delta. According to Department of Petroleum resource (DPR) (2021), there are over seven thousand registered petrol stations operating in Nigeria. However, the number of petrol stations operating in the Niger Delta according to DPR (2021) are presented in Table 1 Thus, from Table 1, the population of this study were 1245 petrol stations.

Table 1: Number of petrol stations in Niger Delta states (DPR, 2021)

SN	States	Number of licensed Petrol stations
1	Abia	143
2	Akwa-Ibom	167
3	Bayelsa	63
4	Cross-river	153
5	Delta	174
6	Edo	149
7	Imo	119
8	Ondo	93
9	River state	184
	Total	**1245**

2.4 Sampling Technique

Because of the geographical scope of this study as well as the inconsistency in the number of workers operating in the study area, the multistage sampling technique was adopted, and it involved the following stages.

1. **Stage one:** Random sampling technique was used to sample three states out of the nine states in the study area. the state considered were Akwa-Ibom, Bayelsa and Rivers.
2. **Stage two:** Purposive sampling technique was used to select the state capitals of the three states sampled in stage one which includes, Uyo (Akwa-Ibom State), Yenagoa (Bayelsa State) and Port Harcourt (Rivers State). The choice of the capital cities was because majority of the petrol stations are usually sited in the state capitals because of the massive economic and administrative activities that are mostly witnessed in the state capitals which usually required huge fuel energy consumptions.
3. **Stage three:** Purposive sampling technique was used to sample only registered petrol stations operating in the three state capitals both government-owned and private owned.

2.5 Sample size determination

From the three states sampled in stage one, Akwa-Ibom, Bayelsa and Rivers and considering Table 1, there were 414 petrol stations within the three sampled states. If each of the petrol stations had at least 5 employees, then the population of the sampled petrol station becomes 2070, so using the Taro Yamane sample size determination formula expressed in Equation (1):

$$n = \frac{N}{(1+N)(\varepsilon)^2} \qquad (1)$$

where n is the sample size, N is the population under study (2070), ε is the margin of error (which is 0.05 at 5% level of significance respectively). Then, the sample size is 400, adding 10% of the sample size to cover for possible error in filling of the questionnaire, the final sample size becomes 440. This sample size was distributed to the three sampled states proportionate to the number of petrol stations in the states, thus, Rivers State with 184 petrol stations was allotted 196 respondents, Akwa-Ibom State with 167 petrol stations was allotted 177 respondents while Bayelsa State was allotted 67 respondents since they had the least number of petrol stations at 63.

2.6 Instrument for Data Collection

Data were collected using well-structured questionnaire and Checklist. Instructions were fully explained to the respondents before completion of the questionnaire. The questionnaire used in this study was designed to have three sections (A, B and C). Section A was used to obtain information on demographic of the respondents, Section B was used to obtain data on intangible safety preparedness indicators, while section C was used to obtain information on safety performance of the petrol stations. The checklist was designed using the NUPRC report on safety practices and safety procedures in petrol stations on the tangible safety preparedness indicators. The questionnaire was designed based on Five-point Likert Scale of strongly Agreed (SA), Agreed (A) Undecided (UN) disagreed (D) and strongly disagreed (SD) with weighted value of 5, 4, 3, 2 and 1, respectively.

2.7 Validity/ Reliability of Study Tool

The face and content validity of the instruments was validated by experts. Test and pre-test reliability of the study instruments were carried out with sample size of 10% and their reliability were ascertained using Cronbach alpha reliability test. A Cronbach alpha coefficient of a scale above 0.70 is considered “Suitable” for the research (Nunnally &

Bernstein, 1994). Table 2 shows the reliability of the study instrument based on the Cronbach alpha coefficient.

Table 2: Reliability of the research instruments used in the study

Instruments	Sections/items	Cronbach's Alpha Coefficient	Remark
Questionnaire	Section B (15 -items)	0.716	Reliable
	section C (10 items)	0.839	Reliable

2.8 Methods of Data Analysis

The standard statistical tools were used to analyse the data that were collected. The descriptive statistical methods (means, percentages, weight average) and regression analysis were the methods for analysis. Descriptive statistics was used to determine the workers behavioural traits and safety performance which involves quantifying the opinion or perception of the respondents on the construct that are concerned with the workers behavioural traits and safety performance while regression models were used to determine the impact of workers behavioural traivariables on safety performance variables.

2.8.1 Model Development

Multi-linear regression models were developed to capture the effect and impact of safety preparedness indicators on the safety performance indicators. The safety preparedness indicators are safety training (ST), safety climate (SC) and safety culture (SCU) while the safety performance accident occurrence (ACO) and near-miss occurrence (NMO). The overall form of mufti-linear regression model is presented below.

For Near-miss occurrence and accident occurrence

$$NMO = \int(OP, AG, NET, EX, CO) \quad (2)$$

$$ACO = \int(OP, AG, NET, EX, CO) \quad (3)$$

Combining the indicator to form a unit for safety performance (SP) and workers behavioral (WB) traits gave:

$$SP = \int(OP, AG, NET, EX, CO) \quad (4)$$

$$SP = \int(WB) \quad (5)$$

Introducing the constant of linearity and formulating the model gave:

$$NMO = \beta_1 OP + \beta_2 AG + \beta_3 NET + \beta_4 EX, + \beta_5 CO + K \quad (6)$$

$$ACO = \beta_1 OP + \beta_2 AG + \beta_3 NET + \beta_4 EX, + \beta_5 CO + K \quad (7)$$

$$SP = \beta_1 OP + \beta_2 AG + \beta_3 NET + \beta_4 EX, + \beta_5 CO + K \quad (8)$$

where $\beta_1 \ldots\ldots\ldots \beta_n$ are coefficient of the independent factors and K is constant of the model.

3. Results and Discussion

3.1 Behavioural Traits of the Workers Operating in Petrol Stations in the Niger Delta

The behavioural traits of the workers operating in the petrol stations in the Niger Delta region was investigated using questionnairedistributed to the respondents who are petrol station pump attendants in the petrol stations within the sampled states in the Niger Delta. In the questionnaire, fifteen items were used such that three items captured each of the five behavioural traits namely, Openness, Neuroticism, Agreeableness, Extraversion and Conscientiousness. Table 3 shows the descriptive statistics results of the response of the respondents on the level of the various behavioural traits of the respondents. The first three items (1-3) captured the results of the response on openness of the respondents, and it revealed that the respondents agreed to the first three items covering the openness of the respondents as a positive behavioural trait. The next three (4 to 6) covered the agreeableness of the respondent and the results revealed that the respondents agreed to all the three items covering the agreeableness of the respondents as a positive behavioural trait.

The next three items (7-9) focused on the Conscientiousness of the respondents and the results revealed that the respondents agreed to all the three items covering the Conscientiousness of the respondents. The next three items (10-12) were focused on capturing the extraversion traits of the respondents. And the results revealed that majority of the respondents agreed to only the first item which is concerned with having good and active imaginations and inventive and disagreed with the last two items which are mainly concerned with formulation of ideas and being curious. Finally, the last three items (13-15) captured the Neuroticism traits of the respondents. And the results revealed that majority of the respondents agreed to the first and third items and disagreed with the second item.

This result aligned with the work of Clarke and Robertson (2005) who conducted empirical study to examine the various personality traits and their relationship with accident occurrence in oil and gas companies in Iraq and they discovered good personality traits among the workers. And the work of Judge and Zapata (2015) who carried out study to assess, develop and test the interaction governing how five-factor personality traits are associated with job performance and they discovered that there is substantial level of good personality traits among workers in the banking industry in Indonesia. This study also concurred with work of Harrison et al. (2016) who carried out study to examine the possible impact of Conscientiousness on Job Performance based on the concept presented in Five-Factor Personality Traits and uncovered that there was substantially good level of conscientiousness traits among workers in the sampled firms.

Table 3: Behaviour of the workers operating in petrol stations in the Niger Delta

S/N	Workers Behavioural Traits	SD.	D.	UN	A.	SA	WA	Remark
1	I ensure the highest levels of safety when I carry out my job	220.00 54.10%	117.00 28.70%	0.00 0.00%	36.00 8.80%	34.00 8.40%	4.11	Agreed
2	I have lots of energy and make things exciting	90.00 22.10%	200.00 49.10%	36.00 8.80%	34.00 8.40%	47.00 11.50%	3.62	Agreed
3	I have a good, strong personality	197.00 48.40%	82.00 20.10%	34.00 8.40%	94.00 23.10%	0.00 0.00%	3.94	Agreed
4	I am always helpful and not selfish with others	70.00 17.20%	207.00 50.90%	0.00 0.00%	94.00 23.10%	36.00 8.80%	3.44	Agreed
5	I like to cooperate; goes along with others and rarely rude to others	129.00 31.70%	118.00 29.00%	3.00 0.70%	105.00 25.80%	52.00 25.80%	3.41	Agreed
6	I rarely can be cold and distant with others and kind and considerate to almost everyone	149.00 36.61%	123.00 30.22%	3.00 0.70%	80.00 19.65%	52.00 25.80%	3.74	Agreed
7	I like doing things carefully and completely	226.00 55.53%	122.00 30.00%	0.00 0.00%	30.00 7.40%	29.00 7.20%	4.14	Agreed
8	I consider myself as a very organized and hardworking person	210.00 51.60%	100.00 24.60%	7.00 1.70%	46.00 11.30%	44.00 10.80%	4.03	Agreed
9	I like making working plan and sticking on the plan till the intended work is dome	226.00 55.53%	131.00 32.20%	0.00 0.00%	30.00 7.40%	20.00 4.90%	4.17	Agreed
10	I have good and active imaginations, creative and inventive	210.00 51.60%	106.00 26.00%	7.00 1.70%	40.00 9.80%	44.00 10.80%	4.01	Agreed
11	I consider myself as someone that will always come up with new ideas	121.00 29.70%	70.00 17.20%	0.00 0.00%	97.00 23.80%	119.00 29.20%	2.94	Disagreed
12	I am always curious about lots of different things	50.00 12.30%	138.00 33.90%	27.00 6.60%	81.00 19.90%	111.00 27.30%	2.84	Disagreed
13	I hardly get worried or gets upset easily; I am stable	114.00 28.00%	48.00 11.80%	21.00 5.20%	195.00 47.90%	29.00 7.10%	3.06	Agreed
14	I easily stay calm in difficult situations	128.00 31.50%	79.00 19.40%	0.00 0.00%	90.00 22.10%	110.00 27.00%	2.99	Disagreed
15	I am not easily saddened and depressed	114.00 29.00%	70.00 17.20%	0.00 0.00%	97.00 23.80%	125.00 30.70%	3.05	Agreed
	Total Weighted Average						3.57	Agreed

3.2: Level of Safety Performance of the Workers Operating in Petrol Stations in the Niger Delta

The safety performance of the petrol stations operating in the Niger Delta region was investigated using questionnaire distributed to the respondents who are petrol station pump attendants in the petrol stations within the three sampled states in the Niger Delta. The questionnaire contained ten (10) items covering the two major aspects of lagging safety performance which wereaccidents occurrence and incident occurrence. The first five items (1-5) captured the accident occurrence while the last five (6-10) covered incident occurrence.

Table 4 shows the response of the respondents on the safety performance of the petrol stations. The results ofthe first five items (1-5) captured response of the respondents on accidents occurrence in their workplace and revealed that the respondents agreed to all the

five items which covered the role of sufficiency of safety resources, good communication, encouragement of suggestion in safety issues and safety prep-talk in prevention of accidents.

The results of the last five items (6-10) captured response of the respondents on incident occurrence in their petrol stations and revealed that the respondents agreed to the first four items which covered the role of sufficiency of safety resources, good communication and encouragement of suggestion in safety issues in prevention of incident occurrence in the petrol stations but they were undecided on the last item which covered the role of safety prep-talk in prevention of incident occurrence in the petrol stations.

This study aligned with the work of Al-Shehri (2015) carried out to ascertain how demographics, personality traits and attitudes are linked to safety behaviours in different workplaces and their roles in nuclear power plants (NPPs) thus, basically, he carried out this study to explore the roles of personality and attitudinal factors on safety performance and stated that safety performance of the NPP are good based on reduced number of accidents and human error. On the contrary, this study did not align with the study by Pourmazaherian et al. (2021) carried out to ascertain and explore how personality of construction workers affects safety performance whose aim was to review and identify the dimension of personality traits that are more affective in predicting accident for construction industry to minimize accident occurrence. They concluded that the accident occurrence of the construction firm is high which translate to poor safety performance.

Table 4:Level of safety performance of the workers operating in petrol stations in the Niger Delta

S/N	Safety Performance Items	SD.	D.	UN	A.	SA	WA	Remarks
1	Sufficient safety resources are made available by management and that has reduced occurrence of near-miss in the petrol station	90.00 22.10%	200.00 49.10%	36.00 8.80%	34.00 8.40%	47.00 11.50%	3.62	Agreed
2	Management has made necessary provisions for safety at my workplace and that has reduced near-miss occurrence	197.00 48.40%	82.00 20.10%	34.00 8.40%	94.00 23.10%	0.00 0.00%	3.94	Agreed
3	The good safety communication between management and workers has reduced occurrence of near-miss	70.00 17.20%	207.00 50.90%	0.00 0.00%	94.00 23.10%	36.00 8.80%	3.44	Agreed
4	My manager encourages suggestions on how to improve safety and health and that has reduced occurrence of incident in the Petrol station	129.00 31.70%	118.00 29.00%	3.00 0.70%	105.00 25.80%	52.00 25.80%	3.41	Agreed
5	My manager often talks to me about health and safety matters on site and that has minimized chances of near-miss occurrence.	117.00 28.70%	0.00 0.00%	0.00 0.00%	71.00 17.4%	219 53.80%	3.68	Agreed
6	Sufficient safety resources are made available by management and that has reduced accident in the petrol station	130.00 31.99%	53.00 13.02%	5.00. 0.00%	24.00 5.89%	200.00 49.10%	3.12	Agreed
7	Management has made necessary provisions for safety at my workplace and that has reduced experiences of accidents in the petrol	125.00 30.77%	53.00 13.02%	5.00. 1.22%	24.00 5.89%	200.00 49.10%	3.13	Agreed

	station							
8	The good safety communication between the manager and the workers has reduced possibility of accident in the petrol station	115.00 28.25%	50.00 12.28%	5.00. 1.22%	27.00 6.66%	210.00 51.59%	3.24	Agreed
9	The good safety communication between manager and workers has reduced chances of accident in the petrol station	47.00 11.55%	0.00 0.00%	0.00 0.00%	177.00 43.49%	183.00 44.96	4.10	Agreed
10	My manager encourages suggestions on how to improve safety and health and that has reduced cases of accident in the petrol station.	47.00 11.55%	175.00 43.00%	0.00 0,00%	105.00 25.80%	81.00 19.65%	3.00	Undecided
	Mean weighted average						3.47	Agreed

3.3 Impact of Behavioural Traits of Workers on Safety Performance of Petrol Stations in the Niger Delta.

The multiple linear regression analysis was used to examine the impact of workers behavioural traits (WB) on the safety performance (SP) of the petrol stations in the Niger Delta. Behavioural traits were operationalized using Openness (OP), Agreeableness (AG), Neuroticism (NET), Extraversion (EX) and Conscientiousness (CO) while Safety Performance was operationalized using Near-miss Occurrence (NMO) and Accident Occurrence (ACO). Three separate models were developed to have a complete detailed understanding of the impact of workers behavioural traits on safety performance. The three models used near-miss occurrence, accident occurrence and safety performance as dependent variables and the five behavioural traits Openness (OP), Agreeableness (AG), Neuroticism (NET), Extraversion (EX) and Conscientiousness (CO), as independent variables.

3.3.1 Regression Model for the Impact of Workers Behavioural Traits on Near-miss Occurrence

The model summary presented in Table 5a shows that the model was suitable in predicting the dependent variable (near-miss occurrence) given the changes in the independent variables (Openness(OP), Agreeableness (AG), Neuroticism (NET), Extraversion (EX) and Conscientiousness (CO)) with model p-value equal to 0.011 which is less than 0.05 significant level. The R-square value of 0.211 also showed that 21.10% change in the dependent variable is as a result of change in the independent variables while the other 78.90% were as a result of change in other factors and variables that were not captures in the current model

The model coefficient presented in Table 5b shows the model coefficients and their significance to the entire model. The results revealed that the coefficient of openness (OP), agreeableness (AG), neuroticism (NET), extraversion (EX) and conscientiousness (CO) in the linear model are -2.076, -1.021, -1.026, 2.050 and -0.062 respectively and the p-values supposed that only openness (OP) ($p=0.041<0.05$), agreeableness (AG) ($p=0.031<0.05$, neuroticism (NET) ($p=0.031<0.05$ and extraversion (EX) ($p=0.049<0.05$) were significant. This means that a unit increase in openness, agreeableness and neuroticism traits of the

workers would trigger a significant 2.076, 1.021 and 1.026 decrease or drop in near-miss occurrence while a unit change in extraversion trait of the workers would trigger 2.050 increase in near-miss occurrence whereas the impact of conscientiousness was not considered because it is not significant. Equation (9) shows the mathematical expression of the model.

$$\mathbf{NMO} = -\mathbf{2.076\,OP} - \mathbf{1.021NET} - \mathbf{1.026AG} + \mathbf{2.050EX} - \mathbf{0.062CO} + \mathbf{3.024} \qquad \mathbf{(9)}$$

where NMO is near-miss occurrence, OP is openness, AG is agreeableness, NET is neuroticism, EX is extraversion and CO is conscientiousness.The results aligned with the work of Gonzalez (2021). In his work, he examined the relationship between conscientiousness agreeableness, safety locus of control, honesty-humility, and near misses in the automobile maintenance industry in the United States. The results revealed that no statistically notable correlation exist between conscientiousness and near misses (p = 0.494), agreeableness and near misses (p =0 .175), hence, that personality traits have no correlation to near misses. This study aligned with the work of Judge and Zapata (2015) carried out research to investigate the relationship between personality traits and job performance using five-factors personality traits to operationalize personality. The results showed that all five-factor traits were better predictors of performance. The study aligned with the work of Yahaya et al. (2011) who conducted empirical study to examine the kind of personality traits among five factor personality traits that predicts workers' performance, and which level of Maslow theory contributed more to workers' performance. The results revealed that extroversion, agreeableness, conscientiousness and openness positively correlated with workers' performance, while self-esteem and self-actualization correlate positively with workers' performance. The result also revealed that these predictors of extrovert, agreeableness, social and conscientiousness accounted for 34.4% change in workers' job satisfaction.

Table 5a: Model summaryfor behavioural traits and near-miss occurrence

Model	R	R Square	Adjusted R Square	Sig
NMO	0.103[a]	0.211	0..222	0.011

Table 5b: Model coefficients for behavioural traits and near-miss occurrence

Model		Unstandardized Coefficients		T	Sig.
		B	Std. Error		
1	(Constant)	3.034	.442	6.858	0.000
	OP	-2.076	.054	-3.411	0.041
	NET	-1.021	.066	-2.326	0.045
	AG	-1.026	.077	-2.344	0.031
	EX	2.050	.066	2.758	0.049
	CO	-0.062	.078	-.1.155	0.077

3.3.1 Regression Model for the Impact of Workers Behavioural Traits on Accident Occurrence

The model summary presented in Table 6a shows that the model was significant in predicting the dependent variable (accident occurrence) given the corresponding changes in the independent variables (Openness (OP), Agreeableness (AG), Neuroticism (NET), Extraversion (EX) and Conscientiousness (CO)) with model p-value equal to 0.022 which is less than 0.05 significant level. The R-square value of 0.179 also showed that 17.90% change in the dependent variable is as a result of change in the independent variables while the other 82.10% were as a result of change in other factors and variables that were not captures in the current model.

The model coefficient presented in Table 6b shows the model coefficients and their significance to the entire model. The results revealed that the coefficient of Openness (OP), Agreeableness (AG), Neuroticism (NET), Extraversion (EX) and Conscientiousness (CO)) in the multi-linear model are -3.058, -2.031, -1.101, 0.027 and -0.054 respectively and the p-values supposed that only openness (OP) ($p=0.028<0.05$), agreeableness (AG) ($p=0.049<0.05$ and neuroticism (NET) ($p=0.022<0.05$ were significant. This means that a unit increase in openness, agreeableness and neuroticism traits of the workers would trigger a significant 3.058, 2.31 and 1.101 decrease or drop in accident occurrence whereas the impact of extraversion and conscientiousness were not considered because they are not significant. Equation (10) shows the mathematical expression of the model.

$$\boldsymbol{ACO = -3.058\,OP - 2.031NET - 1.101AG + 0.027EX - 0.054CO + 3.892} \qquad \textbf{(10)}$$

where ACO is Accident occurrence, OP is openness, AG is agreeableness, NET is neuroticism, EX is extraversion and CO is conscientiousness.These results aligned with the work of Soomro et al. (2015) who carried out study to ascertain how personality traits predict or affect team performance, and their results show strong and positive correlation among personality factor and team performance. This is also in line with work of Anwar et al. (2017) who carried out study to ascertain the personality and performance paradigm based on the context of developing nations. The results revealed that all the personality traits except neuroticism are valid predictors of workers' job performance, though the degree and significance of correlation varies. This results also aligned with the work of Pourmazaherian et al. (2021) who carried out studies to ascertain and explore how personality of construction workers affects safety performance. The goal was to review and identify the dimension of personality traits that are more effective in predicting accident for construction industry to minimize accident occurrence. The results revealed that neuroticism, agreeableness and conscientiousness were more affective traits in predicting both occupation-related and non-occupation related accidents, while the impact of agreeableness and conscientiousness improved safety performance overwhelmingly

This result did not align with the works of Clarke and Robertson (2005) who conducted study to examine the various personality traits and their relationship with accident occurrence, with different personality dimensions associated with occupational and non-occupational accidents. The results revealed that extraversion was found to be a valid and generalized predictor of traffic accidents, but not occupational accidents. The results also did not align with the work of Harrison et al. (2016) who carried out study to examine the possible impact of conscientiousness on job performance based on the concept presented in five-factor personality traits; and the results revealed that conscientiousness is good predictor of Job Performance This results also contradict the work of Neal et al. (2012) who carried out a study to examine the prediction of direction and form of work performance based on five-

factor model of personality traits. The results revealed that openness and agreeableness had contradicting impact on workers' proactivity in the sense that openness was related with proactivity positively whereas agreeableness related negatively with proactivity. Openness also had opposing impact on work performance such that it related positively to personal and organization proactivity but related negatively to team and organization proficiency. It was revealed that conscientiousness had strongly predicted personal proficiency than other construct whereas the reverse was the case for neuroticism. Extraversion related to personal proficiency negatively.

Table 6a Model summary for behavioural traits and accident occurrence

Model	R	R Square	Adjusted R Square	Sig
ACO	0.131	0.179	0..152	0.022

Table 6b Model coefficients for behavioural traits and accident occurrence

Model		Unstandardized Coefficients		T	Sig.
		B	Std. Error		
1	(Constant)	3.892	0.539	7.219	0.000
	OP	-3.058	0.066	-2.883	0.028
	NET	-2.031	0.080	-2.392	0.045
	AG	-1.101	0.094	-1.977	0.022
	EX	0.027	0.080	0.134	0.239
	CO	-0.054	0.096	0.314	0.107

3.3.3 Regression Model for the Impact of Workers Behavioural Traits on Safety Performance

The model summary presented in Table 7a shows that the model was significant in predicting the dependent variable (safety performance) given the corresponding changes in the independent variables (Openness (OP), Agreeableness (AG), Neuroticism (NET), Extraversion (EX) and Conscientiousness (CO)) with model p-value equal to 0.023 which is less than 0.05 significant level. The R-square value of 0.193 also showed that 19.30% change in the dependent variable is as a result of change in the independent variables while the other 80.70% were as a result of change in other factors and variables that were not captures in the current model.

Table 7b shows the model coefficients and their individual significance to the entire model. The results revealed that the coefficient of Openness (OP), Agreeableness (AG), Neuroticism (NET), Extraversion (EX) and Conscientiousness (CO)) in the multi-linear model are 3.109, 1.726, 2.164, -0.038 and 0.083 respectively and the p-values supposed that only openness (OP) ($p=0.001<0.05$), agreeableness (AG) ($p=0.030<0.05$ and neuroticism (NET) ($p=0.010<0.05$ are significance. This means that a unit increase in openness, agreeableness and neuroticism traits of the workers would trigger a significant 3.109, 1.726 and 2.164

increase or rise in safety performance whereas the impact of extraversion and conscientiousness were not considered because they were not significant. Equation(11) shows the mathematical expression of the model

$$\mathbf{SP = 3.109\,OP + 1.726NET + 2.164AG - 0.038EX + 0.083CO + 3.463} \quad \mathbf{(11)}$$

where SP is safety performance, OP is openness, AG is agreeableness, NET is neuroticism, EX is extraversion and CO is conscientiousness.The results concurred with work of Anwar et al. (2017) who carried out a study to ascertain the personality and performance paradigm based on the context of developing nations. Personality was captured using five-factor traits namely openness, conscientiousness, extraversion, agreeableness and neuroticism while task performance was the dependent variable. Stratified sampling technique was used to obtain data from hundred and fifty SMEs from different business sectors operating in Gujranwala, Pakistan. Multiple regression analysis was employed in testing the hypotheses. The results revealed that all the personality traits except neuroticism are valid predictors of workers performance, though the degree and significance of correlation varies.

The results also aligned with the work of Soomro et al. (2015) who carried out study to ascertain how personality traits predict or affect workers team climate and team performance. In their previous research, they performed a systematic literature review on team climate and team productivity. In progression of their earlier work in this paper, they extended the work and take personality traits as an independent variable over team climate and performance. Thus, this current study reports the results of preliminary data survey, which has been conducted to measure the effects of personality on team climate and team performance. Results show strong and positive correlation among personality factor Extraversion, team climate and performance variables

Table 7a: Model summary for behavioural traits and safety performance

Model	R	R Square	Adjusted R Square	Sig
SP	0.152	0.193	0..152	0.023

Table 7b: Model coefficients for behavioural traits and safety performance

Model		Unstandardized Coefficients		T	Sig.
		B	Std. Error		
1	(Constant)	3.463	0.445	7.790	0.000
	OP	3.109	0.054	3.167	0.001
	NET	1.726	0.066	2.400	0.030
	AG	2.164	0.077	2.825	0.010
	EX	-0.038	0.066	0.580	0.130
	CO	0.083	0.079	0.056	0.223

3.3.4 Regression Model for the Impact of Workers Behaviour on Safety Performance

Table 8a show that the model is significant in predicting the dependent variable (safety performance) given the corresponding changes in the independent variables, workers behaviour (WB) with model p-value equal to 0.012 which is less than 0.05 significant level. The R-square value of 0.290 also showed that 29.00% change in the dependent (safety performance) variable is as a result of change in the independent variable (worker behaviour) while the other 71.00% were as a result of change in other factors and variables that were not captured in the current model

Table 8b shows the model coefficients and their individual significance to the entire model. The results revealed that the coefficient of workers behaviour (WB) in the simple linear model is 2.192 and the p-values supposed that the coefficient of workers behaviour was significant ($p=0.001<0.05$). This means that a unit increase in workers behaviour would trigger a significant 2.192 increase or rise in safety performance. Equation (12) shows the mathematical expression of the model.

$$\mathbf{SP = 2.192WB + 3.637} \qquad \mathbf{(12)}$$

where SP is safety performance, and WB is workers behavioural Hence, the first null hypothesis which states that"behavioural traits of the workers has no statistically significant impact on the safety performance of petrol stations in the Niger Delta" is rejected and the alternate hypothesis is accepted which states that behavioural traits of the workers have statistically and significant impact on the safety performance of petrol stations in the Niger Delta."These results aligned with the work of Soomro et al. (2015) who carried out study to ascertain how personality traits predict or affect team performance and their results show strong and positive correlation among personality factor and team performance. This is also in line with the work of Anwar et al. (2017) who carried out a study to ascertain the personality and performance paradigmbased on the context of developing nations. The results revealed that all the personality traits except neuroticism are valid predictors of workers' job performance, though the degree and significance of correlation varies. The results also aligned with the work of Pourmazaherian et al. (2021) who carried out studies to ascertain and explore how personality of construction workers affects safety performance. The goal was to review and identify the dimension of personality traits that are more effective in predicting accident for construction industry to minimize accident occurrence. The results revealed that neuroticism, agreeableness and conscientiousness were more effective traits in predicting both occupation-related and non-occupation related accidents, while the impact of agreeableness and conscientiousness improved safety performance overwhelmingly

Table 8a: Model summary for workers behaviour and safety performance

Model	R	R Square	Adjusted R Square	Sig
SP	0.196	0.290	0.17	0.012

Table 8b Model coefficient for workers behaviour and safety performance

Model		Unstandardized Coefficients		t	Sig.
		B	Std. Error		
1	(Constant)	3.637	0.356	10.209	0.000
	WB	2.192	0.299	9.933	0.001

Conclusion

This study examined the impact of workers behavioural traits on safety performance of petrol stations operating in selected states in the Niger Delta, and the findings of the study showed that petrol station attendants have good and favorable personality and behavioural traits in terms of openness, agreeableness, neuroticism, extraversion and conscientiousness which could translate to good safety behaviour in their workplace. Also, the petrol stations operating in the Niger Delta have good safety performance in terms of low accident and near-miss occurrence. Finally, workers behavioural traits have positive and significant impact on safety performance of the petrol station which entailed that improved behavioural traits of the workers would translate to improved safety performance of the petrol stations in the Niger Delta.

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