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Full Length Research

The Relationships Between Leadership Style, Safety Climate, Safety Culture and Safety Behaviours of Workers in Oil and Gas Servicing Firms in Port Harcourt Metropolis

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This study examined the relationships between leadership style, safety climate, safety culture and safety behaviours of workers in oil and gas servicing firms in Port Harcourt metropolis. The cross-sectional research design was used in this study. The target population are junior staff of the oil and gas servicing firms located in Port Harcourt. Purposive sampling technique was used to select eighty-one (81) companies from one hundred and two (102) companies and the Taro Yamane equation was used to generate appropriate sample size of respondents from twenty-four thousand, eight hundred and twenty (24820) junior workers. The Pearson's Product Moment Correlation Coefficient (PPMC) was used to generate inference off the relationships between leadership style, safety climate, safety culture and safety behaviours of workers in oil and gas servicing firms in Port Harcourt metropolis. The study discovered that there is poor leadership, safety culture and climate, which was found to be affecting the safety behaviours of the workers in the oil and gas servicing firms in the study area. Also, the PPMC established significant relationship between leadership style, safety climate, safety culture and safety behaviours of workers in oil and gas servicing firms at $p<0.05$. This also implies that leadership style=safety: climate=safety: culture=safety behaviours of workers. As a result of the finding the study recommended that leaders at the various oil and gas serving firms improve on the safety climate and culture by engaging the junior workers with understanding and entreating them by using the transformational style of leadership amongst others.

Keywords: Safety-climate, Safety-culture, Safety-behaviour, Port Harcourt.

INTRODUCTION

Leadership as a phenomenon of discussion has been deliberated on in such a context-free way as touching organisations (Kelloway et al., 2006). The concept of leadership can actually be traced to antiquity. However, from a project management viewpoint, Kelloway at al., (2006) defined leadership as a presence and a process carried out within an organizational role that assumes responsibility for the needs and rights of those who decide to follow the leader in accomplishing the project results.

According to Lu and Tsai (2010) terms like senior leadership, executive leadership and strategic leadership, have been interchangeably used in literature for describing leadership. Irrespective of these titles and delegations, leadership has a critical role towards enhancing safety. In putting clear these assertions, Hofmann and Morgeson (1999) presented that people are more likely to be committed to safety and to engage in open communication regarding safety when they recognise that their organization demonstrate supportive actions and they are able to identify high-quality relationships with their leaders. Similarly, Kelloway et al., (2006) opined that trust in management and perceived safety climate facilitate the relationship between a high performance work system and safety performance measured in terms of personal-safety orientation. These instances are pointers to the positive impact of leadership towards ensuring safety (House, 1971; House and Mitchell, 1975; Horner, 1997; Hofmann and Morgeson 1999; Hult et al., 2000; Hinze, and Wilson, 2000; HSE, 2001; Kapp et al., 2003; Judge, and Piccolo, 2004; Kelloway et al., 2006; Harter et al, 2006; HSE 2008). Investigations into major accident events have underscored leadership as an underlying contributory factor. In this instance the King's Cross station fire of 1987, in which 31 people were killed, was as a result of failure of senior management level downwards over many years to minimise fire outbreak, and more importantly to foresee and to plan for an uncontrolled outbreak of fire at the underground station with a real potential for large-scale loss of life (Hope et al., 2010). In the same vein, following the repercussion of the accidental Petroleum Platform disaster on the North Sea in 1988 where 137 deaths occurred, Lord Cullen's report noted that the quality of safety management by operators is fundamental to offshore safety and that no amount of detailed regulations for safety improvements could make up for deficiencies in the way that safety was managed by operators (Iacovino et al., 2015). Although the Cullen report referred to leadership at higher levels of the organisational pyramid, it has been demonstrated that leadership behaviour at all organisational levels, from senior management to front-line team leaders is critical for safety (Hollander et al., 2008; Høivik et al., 2009; Inness et al., 2010; Hope et al., 2010; Beekhyuzen et al., 2010). Similarly, the Baker report into the BP Texas City 2005 refinery explosion identified that BP did not provided effective leadership on or establish appropriate operational expectations regarding process safety performance at its U.S. refineries and the panel believed that the lack of effective leadership was systemic, touching all levels of BP's corporate management having responsibility for BP's U.S. refineries (Belasen and Frank, 2010; Lu and Tsai, 2010; Luthans et al., 2010; Ben-Ari and Enosh, 2011).

Findings from these public enquiries and literature not only highlight leadership's role in ensuring safety but also give an indication of the relationship between leadership and safety performance within organisations. Conversely, Morrow et al., (2010) argued that there have been very few studies in reference to the influence of top-level manager's leadership on safety performance. They suggested that majority of the studies have been centred on the influence of top-level managers, their leadership style in relation to financial performance, productivity and innovation. Thus what lies ahead will be to instigate further into leadership style in relation to other sectors especially those which are safety critical like the offshore oil and gas industry (Lowe et al., 1996; Mahwah et al., 2002; Mearns et al., 2003; Lorenzo-Seva and Ferrando, 2006; Lockwood, 2007; Luthans et al., 2007a; Luthans et al., 2007b; Luthans et al., 2008; Mullen and Kelloway, 2009; Morrow et al*.,* 2010).

The essence of Occupational Health and Safety in the workplace is accident prevention (Andrew and Van de Walle, 2013; Antonakis and House, 2013; Amanchukwu et al., 2015; Adanri, 2016). Accident prevention is aimed at spotting what could go wrong and preventing it from doing so, or at least minimizing the consequences (Arezes and Miquel, 2003; Andersen, 2010). In practical aspect, employers provide the premises and equipment and put in place the working practices which workers use to produce the goods and services with which employers earn profit (Choi, 2009; Chen et al., 2012; Chan et al., 2013; Chiles, 2015). To that extent they can be said to gain from conditions at the workplace. In return, they provide an income for workers, but also have a moral responsibility to provide appropriate working conditions to prevent accidents (Deva, and Yazdanifard. 2013).

Generally, workers in safety critical organizations (SCOs) such as the oil and gas industry operate in hazardous settings, with multiple technological, environmental, and human challenges (Dubrin, 2009; Delobelle et al., 2011; Desu, 2012; Dahl and

Olsen, 2013; Deva and Yazdanifard, 2013; Doh and Quigley 2014). These work settings carry a high potential for stress, accidents, injuries, and various adverse health outcomes (Díaz-Cabrera et al., 2007; Du et al., 2013). Given these hazards and the risks associated with them, SCOs have devoted considerable resources toward improving safety and preventing accidents. The concept of safety culture (Guldenmund, 2000) has been used to describe the broad range of human, organizational, and management factors that appear to influence safe behaviour in the workplace. Safety climate is seen as the more specific and readily measurable aspects of safety culture, such as the impact of management policies on safety practices in the workplace (Cox and Flin, 1998; Zohar and Tenne-Gazit, 2008; Mullen, and Kelloway, 2009; Morrow et al., 2010; Muller and Turner, 2010; Moriano et al., 2014). More recently, there are many studies linking safety climate to important performance and safety outcomes in the workplace (Neal et al., 2000; Mearns et al., 2003; Zohar and Tenne-Gazit, 2008), however, little is researched about the effects of poor leadership style on safety dispositions at work place. Although, Zohar (2010) argued and established that one of the major challenges in safety research is to ascertain the factor (s) and process (es) that influence safety conditions at work place. Although, Eid et al., (2012), suggest that of all the factors that could create poor safety conditions at work place, poor leadership is more pervasive. This is because it is subtle in its effects (Nahrgang et al., 2011; Nanjundeswaraswamy and Swamy, 2014). Safety leadership is defined as "the process of defining the desired state, setting up the team to succeed, and engaging in the discretionary efforts that drive the safety value" (Cooper, 2010; Andrew and Van de Walle, 2013; Antonakis, and House, 2013; Adanri, 2016; Amanchukwu et al*.,* 2015). It is widely recognized to be critical (HSE, 2001), especially when the prevailing safety culture is weak (Martínez-Córcoles et al., 2011). A company's safety culture is driven by the executive leadership team that creates, cultivates and sustains a company's journey to excellence (HSE, 2008). These executives set the vision and strategic direction, provide resources, and constantly emphasize and reinforce the importance of safety to people and the business. Thus, ineffective safety leadership hinders the ability of many companies to achieve success (Cooper and Finley, 2013). Essentially, giving meaning to the terms; Leadership style, safety climate, safety culture and safety behaviour is key to unravelling the dangers that may abound, when its applications in companies are not adequate or in place. Leadership style refers to a person's attitude cum behaviours when dealing with subordinates or the led. Again, safety climate is a collection of workers perception of how much safety is valued, instilled and applied in a place of work. Furthermore, safety culture is a compendium of individual and collective, values, attitudes, believes, competencies, and behavioural patterns towards safety in any organization; and safety behaviours relates to copying good safety attitudes, with which to minimise risk in a work environment (Lu and Tsai, 2010; Luthans et al., 2010; Ben-Ari and Enosh, 2011). Thus, failure to apply in full swing good leadership styles, safety climate, and safety culture would result in bad safety behaviour and consequently leads to risks or accidents.

Preliminary investigation by the researchers indicates that the leadership of oil and gas firms apply the transactional leadership style for management purposes. This is thought to be the cause of friction in the relationships between the workers and managers. Researches have shown that leadership style, safety climate, safety culture impacts on safety behaviours of workers in oil and gas servicing firms. It is therefore possible for poor leadership to cause safety problems in these industries. Sadly, to the best of the knowledge of the researchers, this has gained scant recognition in literature at least in Nigeria. This study therefore examined the impacts of leadership style, safety climate, safety culture on safety behaviours of workers in oil and gas servicing firms in Port Harcourt metropolis.

MATERIALS AND METHODS

Study area

The area this study was carried out is Port Harcourt, Rivers State, in Nigeria. The abundance of oil servicing firms in this area justified its selection for the study. Port Harcourt is located between latitudes 4°51' 30''N and 4° 57' 30''N and longitudes 6°50' 00''E and 7°00' 00''E (Figure 1). The city is the capital of Rivers State and was created in the year 1967. The area is surrounded by the Atlantic Ocean to the south, Bayelsa and Delta states west and Delta States, to the north by Imo, Abia and Anambra

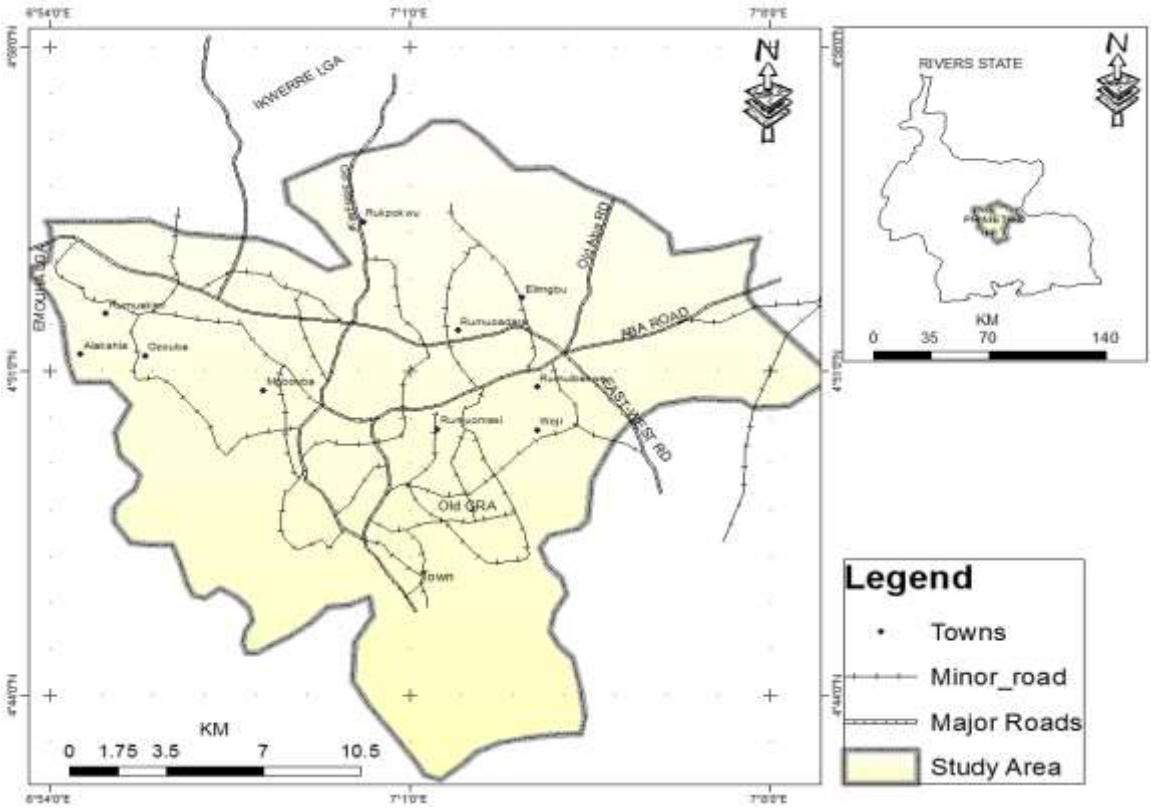

Figure 1. Port-Harcourt Metropolis

Source: Modified after federal ministry of lands housing and urban development (2010).

States and east by Akwa Ibom State. The climate of the area is the tropical type as designed by Koppens. Therefore, the mean annual temperature ranges between 27^0C and 29^0C, while annual rainfall ranges between 2750 mm to 3115 mm (Weli and Ozabor, 2018). The Nigerian oil and gas industry have been vibrant since the discovery of crude oil in Oloibiri in 1956. As a result, there is huge boom of the oil and gas activities in the area, which the oil servicing firms attend to.

The cross-sectional research design was used in this study. The population targeted are the junior staff of the oil and gas servicing firms located in Port Harcourt only (see Table 1 for breakdown). The purposive sampling technique as suggested by Amanchukwu et al., (2015) was utilised to select 81 companies from 102 companies using following index: companies that have proper work structure and companies that have operated up to 25 years in the area. The Taro Yamane equation was used to generate appropriate sample size of respondents from 24820 workers for the study (equation 1) and a sample of 394 was derived. The proportional equation was thereafter used to designate the 394 respondents appropriately amongst the selected companies (see Table 1). The researchers collected data for this study by administering copies of questionnaire on respondents randomly. The research instrument was validated using the test retest method (Bara et al., 2017; Barbaranelli et al., 2015). Albeit, the administration of the questionnaire was done using some trained field assistants.

$$n = N/\{1 + N(e^2)\} \quad \text{.....equ. 1}$$

where n = the sample size
N = the total population size
e = sampling error (in this case 0.05)
1 = constant

The data obtained through the questionnaire survey were presented in tables. However, for the purpose of data analyses, the Pearson's Product Moment Correlation Coefficient (PPMC) was utilised. The PPMC is given by equation 2 below:

Table 1. Selected oil and gas servicing companies, number of staff and respondents' size in the study area.

S/N	Oil and Gas servicing firms Ltd	number of field staff	RSPC	S/N	Oil and Gas servicing firms Ltd	number of field staff	RSPC
1	Diving and Under water Services	46	1	42	Scopex Nig Ltd	23	Nil
2	Dive Mechanix Limited	284	5	43	Sydney Gateway Ltd	243	4
3	Drafinsub Nigeria Ltd	214	3	44	Total quality integrated services Ltd	11	Nil
4	Humber marine works Limited	309	5	45	Weco systems international Ltd	213	3
5	Pisces offshore Ltd	23	Nil	46	Sowsco well servicing	24	Nil
6	Melsmore marine Nig Ltd	247	4	47	ACME Energy integrated services	25	Nil
7	Tethys plantgeria	672	11	48	AOS Orwell	10	Nil
8	Tilone subsea Ltd	145	2	49	Atlantic fluids and integrated services Ltd	231	4
9	Under water inspection masters	231	4	50	Derotech int Ltd	347	6
10	Vettal mega services Ltd	225	4	51	Drilling petro Dynamic Ltd	311	5
11	Watergate Technical services Ltd	21	Nil	52	Emral Nig Ltd	345	5
12	Oceantech Nig Ltd	121	2	53	Hamilton tech Ltd	118	2
13	Engineering services	24	Nil	54	Hysol Energy Ltd	245	4
14	Bonnedo Engineering and general Services Ltd	1321	21	55	Jimco Resources Nig Ltd	12	Nil
15	CTRL System Technologies Nig Ltd	342	5	56	Power and energy oil tools Ltd	245	4
16	Cypher Crescent Ltd	218	4	57	Segofs Energy services Ltd	254	4
17	Degrils integrated services Nig Ltd	234	4	58	Weafir services company Ltd	56	1
18	Phonex Engeneering services	235	4	59	Well fluid Ltd	246	4
19	Green steps Nigeria Ltd	233	4	60	Well data oil field Nig Ltd	116	2
20	Link technical and scientific Ltd	12	Nil	61	NNPC Nig	1736	28
21	Morgreen Nig Ltd	23	Nil	62	C K S Environment	256	4
22	Mosab marine and Engineering services Group	256	4	63	Polmaz Ltd	532	9
23	Nest oil LTD	893	14	64	Kemnonlli Nig Ltd	345	5
24	Phonix Energy Nig LTD	25	Nil	65	Phelps international Ltd	123	2
25	Point engineering	211	3	66	Rivers state Management agency	863	14
26	Tetransller Engineering LTD	345	5	67	Specialty Drilling fluid Ltd	23	Nil

$$r = \frac{\sum XY - (N\bar{X}\bar{Y})}{\sqrt{(\sum X^2 - N\bar{X}^2)(\sum Y^2 - N\bar{X}^2)}} \quad \text{…equation 2}$$

Where : N is the number of observation

r_{xy} – the correlation coefficient of the linear relationship between safety climate and leadership style.

x_i – is safety efficiency

$\bar{x}$ – the mean of the values of the x- variable (safety Efficiency)

y_i – is leadership style $\bar{y}$ – the mean of the values of the y- variable (leadership style)

$\sum$-- summation sign

Table 1. Continue.

27	Triumph power oil and Gas systems Ltd.	453	7	68	The initiates Plc	245	4
28	Weltek Limited	245	4	69	Envirogreen Technical support Ltd	23	Nil
29	West African Ventures	237	4	70	Sofan Resources	124	2
30	Alchins Energy Services Ltd	127	2	71	Brilview Energy	125	2
31	Sunatech International Ltd	451	7	72	Pelfaco Lmted	231	4
32	Shell Petroleum Development Company	2689	43	73	CB geophysical solufuild Ltd	238	4
33	Belema oil	1562	25	74	Epanoe Nig Ltd	231	4
34	Geodetic offshore services	231	4	75	FEM Associates Nig Ltd	112	2
35	Dominos oil and gas	254	4	76	Geodetic offshore services	281	5
36	Forte oil	763	12	77	Geomarine systems Ltd	113	2
37	Lewis oil and gas	234	4	78	Geo ville consulting Ltd	25	Nil
38	Masters Energy oil and gas	233	4	79	Super geomatics services Nig Ltd	654	10
39	New Cross Exploration and production Ltd	245	4	80	Read well Geophysics.	342	5
40	Nexpro Group	23	Nil	81	Thompson and Grace investment Ltd	121	2
41	Omega maritime services	345	5	Total		24820	394

Source: Field Work 2019
Note: RSPC implies respondents' size per selected oil and gas servicing company

Table 2. Leaders react quickly to solve the problem when told about safety hazards.

Options	Frequency	Percentage (%)
Strongly Agreed	89	23
Agree	102	26
Disagree	132	34
Strongly disagree	66	17
Total	389	100

RESULTS

In Table 2 the opinion of the respondents as touching how swiftly leaders react to solve problems related to safety hazards is shown. In the table, 23% of the respondents account for those who strongly agreed that, leaders react quickly to solve the problem when told about safety hazards; while those that suggested that they agreed that leaders react quickly to solve the problem when told about safety hazards, accounted for 26% of the total respondents in the study area.

Furthermore, 34 % of the total respondents suggested that they disagreed that leaders react quickly to solve the problem when told about safety hazards, while the respondents that suggested that, they strongly disagreed that, leaders reacted quickly to solve the problem when told about safety hazards accounted for 17% of the total respondents in the study area.

Table 3. Leaders insist on thorough and regular safety audits and inspections.

Options	Frequency	Percentage (%)
Strongly Agreed	64	16
Agree	111	29
Disagree	159	41
Strongly disagree	55	14
Total	389	100

Table 4. Leaders try to continually improve safety levels in each department.

Options	Frequency	Percentage (%)
Strongly Agreed	51	13
Agree	35	09
Disagree	229	59
Strongly disagree	74	19
Total	389	100

Table 3 presented the information on how leaders insist on thorough and regular safety audits and inspections in the oil and gas servicing firms. In the table, 16% of the respondent suggested that, leaders insist on thorough and regular safety audits and inspections, while 29% of the respondents suggested that they agreed that, leaders insist on thorough and regular safety audits and inspections. On the other hand, the respondents that disagreed with the opinion that leaders insist on thorough and regular safety audits and inspections accounted for 41% of the respondents, while those that strongly disagreed accounted for 14% of the total respondents. This finding indicates that many of the companies do not regularly, audit nor inspect equipment and personnel in the study area.

Table 4 presents the perception of respondents regarding how leaders try to continually improve safety levels in each department. In the table the respondents that suggested that they strongly agreed that leaders try to continually improve safety levels in each department, accounted for 13% of the total respondents and the respondent population that emphasized that they agreed accounted for 09% of the respondents' population.

Again in the table, the respondents that suggested that they disagreed with the opinion that leaders try to continually improve safety levels in each department account for 59% of the total respondents, while those that strongly disagreed that leaders try to continually improve safety levels in each department, accounted for 19% of the total respondents.

Table 5 presented the opinion of respondents, concerning how leaders provide all the equipment needed to do jobs safely. In the table, 20% of the respondents suggested that, they agreed with the opinion that leaders provide all the equipment needed to do the job safely, whereas 25% of the respondents suggested that they only agreed with the conception that leaders provide all the equipment needed to do the job safely.

On the other hand, the respondents that disagreed that, leaders provide all the equipment needed to do the job safely accounted for 51% of the total respondents, while those that suggested that they disagreed accounted for 5% of the total respondents. This implies that the whole equipment required to guarantee safety is not always provided in the oil and gas servicing firms.

Table 6 represents the opinion of the respondents regarding how leaders are strict about working safely when work falls behind schedule. In the table 17% of the respondents suggested that they strongly agreed with the opinion that, leaders are strict about working safely when work falls behind

Table 5. Leaders provide all the equipment needed to do the job safely.

Options	Frequency	Percentage (%)
Strongly Agreed	77	20
Agree	96	25
Disagree	198	51
Strongly disagree	18	5
Total	389	100

Table 6. Leaders are strict about working safely when work falls behind schedule

Options	Frequency	Percentage (%)
Strongly Agreed	65	17
Agree	98	25
Disagree	188	48
Strongly disagree	38	10
Total	389	100

Table 7. Leaders quickly correct any safety hazard (even if it is costly).

Options	Frequency	Percentage (%)
Strongly Agreed	104	27
Agree	129	33
Disagree	119	31
Strongly disagree	37	10
Total	389	100

schedule, whereas 25% of the respondents agreed with the perception.

On the other hand, the respondents that suggested that they disagreed with the fact that leaders are strict about working safely when work falls behind schedule, accounted for 48% of the total respondents in the study area, while the population that identified that, they strongly disagreed with the perception that, leaders are strict about working safely when work falls behind schedule are 10% of the total respondents.

Table 7 presented the information regarding the respondents' perception of how leaders quickly correct any safety hazard (even if it is costly). In the table, 27% of the respondents strongly agreed that, leaders quickly corrected any safety hazard (even if it is costly), while 33% of the respondents suggested that they agreed that leaders quickly correct any safety hazard (even if it is costly).

On the other hand, the respondents that disagreed that leaders quickly correct any safety hazard (even if it is costly), accounted for 31% of the total respondents, while 10% of the respondents suggested that they strongly disagreed that, leaders quickly corrected any safety hazard (even if it is costly) in the oil and gas servicing firms in the study area.

Table 8 presented the opinion of respondents about how leaders provide safety reports to workers in the study area. In the table, 16% of the total respondents suggested that, they strongly agreed that leaders provide detailed safety reports to

Table 8. Leaders provide detailed safety reports to workers (Examples: injuries, near accidents),

Options	Frequency	Percentage (%)
Strongly Agreed	63	16
Agree	87	22
Disagree	146	38
Strongly disagree	93	24
Total	389	100

Table 9. Leaders consider a person's safety behaviour when promoting workers.

Options	Frequency	Percentage (%)
Strongly Agreed	55	14
Agree	112	29
Disagree	163	42
Strongly disagree	59	15
Total	389	100

Table 10. Leaders require each manager to help improve safety in his/ her department.

Options	Frequency	Percentage (%)
Strongly Agreed	102	26
Agree	119	31
Disagree	114	29
Strongly disagree	54	14
Total	389	100

workers (Example: injuries, near accidents), while the population of the respondents that agreed that leaders provide detailed safety reports to workers (e.g., injuries, near accidents), accounted for 22% of the respondents.

Furthermore, the respondents who disagreed that, leaders provide detailed safety reports to workers (e.g., injuries, near accidents) accounted for 38% of the total respondents while respondents that strongly disagreed accounted for 24% of the total respondents. This result indicates that leaders do not communicate safety reports to workers in oil and gas companies in the study area.

In Table 9 the information regarding how leaders consider workers safety behaviour when promoting workers. In the table, 14% of the respondents suggested that they strongly agreed that, leaders consider safety behaviour when promoting workers, while 29% of the respondent suggested that they agreed that, leaders consider persons safety behaviour when promoting workers in the study area.

On the flip side, the respondents that disagreed that, leaders consider safety behaviour when promoting workers accounted for 42% of the total respondents, while the respondents that strongly disagreed that the leaders consider safety behaviour when promoting workers accounted for 15% of the total respondents. Table 10 presented the information regarding how leaders require each manager to help improve safety in his/ her department in the oil and gas servicing firms. In the

Table 11. Leaders invest a lot of time and money in safety training for workers.

Options	Frequency	Percentage (%)
Strongly Agreed	12	3
Agree	23	6
Disagree	184	47
Strongly disagree	170	44
Total	389	100

Table 12. Leaders use any available information to improve existing safety rules

Options	Frequency	Percentage (%)
Strongly Agreed	89	23
Agree	123	32
Disagree	94	24
Strongly disagree	83	21
Total	389	100

table 26% of the respondent strongly agreed that, leaders require each manager to help improve safety in his/ her department, while the respondents that just agreed with the perception that leaders require each manager to help improve safety in his/ her department, accounted for 31% of the total respondents in the study area.

On the other hand, the respondents that disagreed with the perception that leaders require each manager to help improve safety in his/ her department, accounted for 29% of the total respondents, whereas the total respondents that strongly disagreed that, leaders require each manager to help improve safety in his/ her department accounted for 14% of the respondents. In Table 11 the researcher inquired about how leaders invest time and money in safety training for workers. In the table, respondents that suggested that they strongly agreed that, leaders invest a lot of time and money in safety training for workers accounted for only 3% of the total respondents, while the respondents that suggested that they agreed with the perception that leaders invest a lot of time and money in safety training for workers, accounted for 6% of the total respondents in the study area.

On the other hand, the respondents that suggested that they disagreed with the opinion that, leaders invest a lot of time and money in safety training for workers accounted for 47% of the respondents, while 44% of the respondents suggested that they strongly disagreed that, leaders invest a lot of time and money in safety training for workers in the study area.

In Table 12 respondents' perception regarding leaders use of any available information to improve existing safety rules. However, 23% of the respondents strongly agreed that leaders use any available information to improve existing safety rules, while 32% of the respondents suggested that, they agreed with the opinion that leaders use any available information to improve existing safety rules in the oil and gas servicing firms. On the other hand, respondents that suggested that they disagreed with the perception that, leaders use any available information to improve existing safety rules accounted for 24% of the total respondent. The respondents that strongly disagreed that leaders use any available information to improve existing safety rules accounted for 21% of the total respondents.

In Table 13 the opinion of respondents regarding the leaders listening carefully to workers' ideas about improving safety is presented. In the table the respondents that strongly agreed that leaders listen carefully to workers' ideas about improving safety,

Table 13. Leaders listen carefully to workers' ideas about improving safety.

Options	Frequency	Percentage (%)
Strongly Agreed	56	14
Agree	91	23
Disagree	189	49
Strongly disagree	53	14
Total	389	100

Table 14. leaders consider safety when setting production speed and schedules.

Options	Frequency	Percentage (%)
Strongly Agreed	104	27
Agree	118	30
Disagree	111	29
Strongly disagree	56	14
Total	389	100

Table 15. Leaders provide workers with a lot of information on safety issues

Options	Frequency	Percentage (%)
Strongly Agreed	123	32
Agree	178	46
Disagree	62	16
Strongly disagree	26	7
Total	389	100

accounted for 14% of the respondents, while the respondents that agreed that leaders listen carefully to workers' ideas about improving safety, accounted for 23% of the respondents.

Nevertheless, the respondents who disagreed that, leaders listen carefully to workers' ideas about improving safety accounted for 49% of the total respondents, while the respondents that identified that they strongly disagreed with the fact that leaders listen carefully to workers' ideas about improving safety, represents 14% of the respondents.

In Table 14 the perception of the respondents regarding how leaders consider safety when setting production speed and schedules is presented. In the table respondents that strongly agreed that leaders consider safety when setting production speed and schedules accounted for 27% of the respondents, while the respondents that agreed with the perception accounted for 30% of the total respondents in the study.

Notwithstanding, the proportion of the respondents who disagreed that leaders consider safety when setting production speed and schedules, accounted for 29% of the total respondents, whereas the respondents who strongly disagreed that leaders consider safety when setting production speed and schedules, represented 14% of the total respondents.

In Table 15 respondents' perception regarding how leaders provide workers with information on safety issues. In the table 32% of the respondents

Table 16. leaders regularly hold safety-awareness events (presentations, ceremonies).

Options	Frequency	Percentage (%)
Strongly Agreed	81	21
Agree	116	30
Disagree	153	39
Strongly disagree	39	10
Total	389	100

Table 17. Leaders give safety personnel the power they need to do their job.

Options	Frequency	Percentage (%)
Strongly Agreed	29	7
Agree	76	20
Disagree	189	49
Strongly disagree	95	24
Total	389	100

strongly agreed that, leaders provide workers with a lot of information on safety issues, while the respondents that agreed with the opinion accounted for 46%.

Furthermore, the respondents who disagreed with the perception that, leaders provide workers with a lot of information on safety issues accounted for 16% of the respondents, while the respondents that strongly disagreed accounted for only 7% of the respondents.

In Table 16 the respondents' opinion concerning how leaders regularly hold safety-awareness events (presentations, ceremonies) is shown. In the table, whereas 21% of the respondents strongly agreed with the opinion that leaders regularly hold safety-awareness events (presentations, ceremonies), 30% agreed.

On the flip side, the respondents who, disagreed that leaders regularly hold safety-awareness events (presentations, ceremonies) accounted for 39%, while the respondents that strongly disagreed with the opinion that, leaders regularly hold safety-awareness events (presentations, ceremonies) accounted for only 10% of the respondents in the study area.

In Table 17 the perception of the respondents regarding how leaders give safety personnel the power they need to do their job is presented. In the table, 7% of the respondents strongly agreed that leaders give safety personnel the power they need to do their job, while 20% agreed.

On the other hand, 49% of the respondents disagreed that, leaders give safety personnel the power they need to do their job, while those that disagreed that leaders give safety personnel the power they need to do their job, accounted for 24% of the respondents.

Table 18, revealed the correlation coefficients between safety climate, leadership style, safety culture and safety behaviour in oil and gas servicing firms. The results in the table showed that, the factors of comparison are related. Safety climate and leadership style had positive relationship with an r value of 0.68, the coefficient of determination of which is 46.2% indicating that leadership style can only explain 46.2% of safety climate, leaving the other 53.8% to human factors. Safety culture and leadership style had positive relationship with an r value of 0.76, the coefficient of determination of which is 57.8% indicating that leadership style can only explain 57.8% of safety climate, leaving the other 42.2% to human factors.

Safety behaviour and leadership style had positive relationship with an r value of 0.89, the coefficient of determination of which is 79.2% indicating that leadership style can only explain 79.2% of safety

Table 18. Correlation coefficients between safety climate, leadership style, safety culture and safety behaviour in oil and gas servicing firms.

Correlations					
		safety_climate	**Leadership_style**	**safety_culture**	**safety behaviour**
safety_climate	**Pearson Correlation**	1			
	Sig. (2-tailed)				
	N	6189			
Leadership_style	Pearson Correlation	.680	1		
	Sig. (2-tailed)	.000			
	N	6189	6189		
safety_culture	Pearson Correlation	.760	.650	1	
	Sig. (2-tailed)	.000	.000		
	N	6189	6189	6189	
safety_behaviour	Pearson Correlation	.890	.590	.720	1
	Sig. (2-tailed)	.000	.000	.000	
	N	6189	6189	6189	6189

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

climate, leaving the other 20.8% to human factors. Also, all the models were significant at $P<0.05$ meaning that there is a significant relationship between safety climate, leadership style, safety culture and safety behaviour in oil and gas servicing firms.

DISCUSSION

The opinion of the respondents regarding how swift leaders react to solve problems related to safety hazards indicated that leaders do not necessarily act swift to resolve safety hazards as they come up. Neither are safety audits and inspection done regularly. Furthermore, the respondents suggested that they disagreed that, leaders try to continually improve safety levels in each department and do not provide the whole equipment required to carry out operations. Regarding the perception of the respondents about leaders strictness about safety when work fall behind schedule, 17% of the respondents suggested that they strongly agreed with the opinion that, leaders are strict about working safely when work falls behind schedule, whereas 25% of the respondents agreed with the perception. On the other hand, the respondents who suggested that they disagreed with the fact that leaders are strict about working safely when work falls behind schedule, accounted for 48% of the total respondents in the study area, while the population that identified that, they strongly disagreed with the perception that, leaders are strict about working safely when work falls behind schedule are 10% of the total respondents. This result is similar to the findings of Deva and Yazdanifard (2013). However, this is one of the problems of capitalism that tries to undermine procedure; rather the profit for investment is considered more important. In many instances, however, such transactional leadership is a prescription for mediocrity (Lu and Tsai, 2010). This is particularly true if the leader relies heavily on passive management-by-exception, intervening with his or her group only when procedures and standards for accomplishing tasks are not met (Simon, and Goes, 2011; Lievens, and Vlerick, 2014; Liu et al., 2015, Liang et al., 2016). This kind of manager may use disciplinary threats to bring a group's performance up to standards (Lee, and Jimenez, 2011; Lewis, 2011).

The findings of this study also pointed to the fact that; leaders do not provide detailed safety reports to workers. They rather try to conceal, such information, since to their opinion it may dent company image (Delobelle et al., 2011). The U.S. Office of Personnel Management reported that more than 226,000 of public employees surveyed, in 2012 reported that they were dissatisfied with their jobs and the leadership in their organizations. The specific problem is that workers tend to be angered that, the mistakes of their leaders or machines that led to the deaths or injuries of their co-workers are not reported adequately, to cause a review of the safety process (O'Reilly et al, 2010; U.S. Office of Personnel Management, 2012). Sad still, promotions are not done on the merit of safety practice, as 57% of respondents disagreed that, leaders consider safety behaviour when promoting workers. Neither do they provide the needed resources (time and money) to upgrade workers safety knowledge.

Meanwhile, respondents' perception regarding leaders use of any available information to improve existing safety rules revealed that, 23% of the respondents strongly agreed that leaders use any available information to improve existing safety rules, while 32% of the respondents suggested that, they agreed with the opinion that leaders use any available information to improve existing safety rules in the oil and gas servicing firms. On the other hand, respondents that suggested that they disagreed with the perception that, leaders use any available information to improve existing safety rules accounted for 24% of the total respondent. The respondents that strongly disagreed that leaders use any available information to improve existing safety rules accounted for 21% of the total respondents. This finding agrees with that of O'Reilly et al., (2010), who argued that managers try to improve the workers safety information due to the fact that poor safety information lead to poor safety actions; which is very dangerous for work places as it affects the offender, the whole work installations and other persons.

The opinion of respondents regarding the leaders listening carefully to workers' ideas about improving safety indicated that 14% of the respondents strongly agreed that leaders listen carefully to workers' ideas about improving safety, while 23% agreed. Nevertheless, the respondents that disagreed that, leaders listen carefully to workers' ideas about improving safety accounted for 49% of the total respondents, while the respondents that identified that they strongly disagreed with the fact that leaders listen carefully to workers' ideas about improving safety, represents 14% of the respondents.

The perception of the respondents regarding how leaders consider safety when setting production speed and schedules revealed that those that strongly agreed that leaders consider safety when setting production speed and schedules accounted for 27% of the respondents, while the respondents that agreed with the perception accounted for 30% of the total respondents in the study. Notwithstanding, the proportion of the respondents that disagreed that leaders consider safety when setting production speed and schedules, accounted for 29% of the total respondents, whereas the respondents who strongly disagreed that leaders consider safety when setting production speed and schedules, represented 14% of the total respondents. Yet the leaders do not hold safety awareness programmes to forestall accidents in the companies.

The perception of the respondents regarding how leaders give safety personnel the power they need to do their job revealed that only, 7% of the respondents strongly agreed that leaders give safety personnel the power they need to do their job, while 20% agreed. On the other hand, 49% of the respondents disagreed that, leaders give safety personnel the power they need to do their job, while those that disagreed that leaders give safety personnel the power, they need to do their job, accounted for 24% of the respondents. The finding is similar to the one established in the works of Delobelle et al., (2011); Desu (2012); Dahl and Olsen (2013); Deva and Yazdanifard, (2013); Doh and Quigley (2014).

CONCLUSION AND RECOMMENDATIONS

The study centered on unravelling the impacts of leadership style, safety climate, safety culture on safety behaviours of workers in oil and gas servicing firms in Port Harcourt metropolis, and found that there are the leadership approaches portends poor safety climate, safety culture on safety behaviours and as such a risk. It is the position of the researchers that the following steps are very important for the purpose of improving safety behaviours in the oil and gas servicing firms:

a) The leaders at the various oil and gas serving firms should improve on the safety climate and culture by engaging the junior workers with understanding and entreating them using the transformational style of leadership.
b) Leaders should ensure that lesser penalties are meted on workers when work falls behind schedule. This is to ensure that safety protocols are not broken when there are shortfalls in work targets.
c) Promotions and other work related incentives should be based on contribution of the worker and not based on favouritisms.

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