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Evaluation of Preparedness and Response of Fire Service Worker to Fire Incidents; A Case Study of River State Fire Service

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Abstract
This study examined the impact of preparedness on the response to fire incidents by Rivers State fire service. Three constructs (Training, Planning and Logistics) were used to capture level of preparedness while two constructs (Promptness and Responsiveness) were used to capture level of response. The study adopted a combination of cross-sectional and correlational research designs. The respondents comprised sampled fire service workers in the five-fire service stations in Rivers State and fire incidents victims across the state. Two sets of questionnaires, namely Fire Service Team Response Questionnaire on Preparedness (FSTRQP) and Fire Incident Victims Questionnaire on Fire Team Response (FIVQFTR), were designed based on 5-point Likert scale for data collections. Data analyses were done using descriptive and inferential statistics from SPSS version-20. The results of the descriptive statistics based on level of preparedness revealed a weighted mean for training level (3.58>3.00), level of planning (3.61>300) and level of logistics (3.51>3.00) as good while level of promptness (2.24<3.00) as poor and responsiveness level (3.77>3.00) as good The regression analysis revealed that Promptness was affected positively but insignificantly by training and logistic, but negatively and insignificantly by planning, whereas responsiveness was affected negatively but insignificant by planning and logistics, but positively and significantly by level of training. It was concluded that the preparedness of the States Fire Service Stations is good while their response in terms of promptness is poor but good in terms of responsiveness.
Key words; *Preparedness. Response, Fire Service Workers, Fire Incidents, Rivers State.*

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I. Introduction

Preparing and responding to fire emergencies is of great importance. The longer it takes for the fire station to respond to a fire incident, the higher the losses incurred in terms of property, health, and lives. Nigeria has been plagued by increasing and disastrous fire emergencies, particularly over the last few years in the Rivers States. Rivere States is among the states in Nigeria large oil and gas reserves, and as such, one of the hubs of oil and gas exploration and production activities in Nigeria. Accordingly, there is apparent increase in commercial and industrial activities that may give rise to fire incidents. Rapid increase in population and urbanization with no commensurate improvement and expansion in public infrastructures, have no doubt contributed to the increase in fire incidents and fire-related fatalities in many areas within the state. Data obtained from the rivers state fire service stations (2021) shows a pattern of increasing cases of fire accidents from 2016 to 2020. For example, fire incidents in residential buildings were more than those of commercial buildings in these states.

Over the years, several fire incidents have been recorded in Rivers State, for example, the Okogbe Community, Ahoada West Local Government Area fire Incident of July 12 ,2012, claimed as much as 95 lives including a pregnant woman, while property worth over one hundred and twenty million naira (₦120M) were destroyed and the surrounding environment greatly impacted by the incident (Vanguard, 2012). The Rumuolumini, Port Harcourt double tankers fire incidents on Monday, 21st of September, 2020.The Mile 4, Port Harcourt, furniture shops fire of Monday,2nd of August,2021. The Bonny-Bomu Shell (SPDC) pipeline fire on February 17,2012, and most recently, an SPDC facility located at Obiakpu-Egbema in Egbema /Ndoni Local Government Area of Rivers State was gutted by fire on Friday, the 28th of May,2021. These are among many other reported and unreported fire incident, Rivers State.

In another incident, Sahara report of November 13, 2014 reported a fire outbreak at Heritage filling station along St. Johns Street in Rumuolumeni, Port-Harcourt. According to the Newspaper, the fire outbreak at the filling station was also caused by a tanker discharging petrol to the filling station. The inferno was so serious that it burnt down the filling station and another nearby residential building. The reporter also stated that the inferno was finally quelled by youths of the area who angrily confronted and chased back the fire-service

personnel who came hours after the fire had been extinguished. It was reported that the fire-outbreak would have been quelled earlier if the fire-service personnel were quick in their response.

Also, vanguard newspaper of 22nd September, 2020, reported a fire outbreak at AP petrol filling station by Iwofe road Port-Harcourt, according report, the fire outbreak was caused by leakage in a tanker that was discharging petrol to the filling station which got ignited by open plug head of a motor bike at the station refilling its tank. The inferno lasted for hours before the fire-service operatives came to assist put off the fire. Although, there was no casualty but the entire filling station was burnt down by the fire because of the late response of the fire-service personnel.

These cases of fire incidents and the reported levels of preparedness and response of the fire service showed that there are factors that militate against the response of the fire service operatives in the state. However, several studies have been done on the fire emergency preparedness and response in Markets (Jonathan *et al.* (2011), Companies (Ogbonna and Nwaogazie, 2015), private/government buildings (Adeleye *et al.* (2020), petrol and gas stations (Corcoran *et al.* 2011), but there is paucity of relevant literatures that focus on the activities of Rivers State fire service stations as concerning how their level of preparedness (Training, Planning and Logistics) affect their response (promptness and responsiveness(to fire incidents in the state. This study is therefore, designed to fill this lacuna in knowledge by evaluating the impact of preparedness on response to fire incidents by the State fire service. Thus, the aim of this study is to ascertain the impact of preparedness on response to fire incidents by Rivers State fire service and the objectives are; one, Assess the level of preparedness in terms of training, planning and logistics, of the Rivers States fire service. two, Evaluate the level of response in terms of responsiveness and promptness, of the Rivers State fire service personnel and three, ascertain the impact of preparedness on the response of the Rivers States fire service within the state.

II. Methodology

2.1 Research design

The research design adopted for this study was a combination of cross-sectional and Inferential research design. Cross sectional design was adopted to determine the response or opinion of the fire-fighters on their preparedness to combat fire incidents and also the opinion or response of the fire incident victims in Rivers State on the response of the fire-fighters during fire incidents. This research design is appropriate or suitable for this section of the research because in cross sectional, the researcher measures only the opinion, response, outcome, exposures or perception of the study respondent or participants using quantitative data obtain from them and thereby determine the degree or level of the opinion, response, outcome, and exposure or perception of the respondent or participants without expressing any form of relationship between the variables being studied. Inferential design was adopted for this study to ascertain impact the preparedness variables (training, planning, logistics) on the response variable (responsiveness and promptness). This research design is suitable because it measures the nature and extent of effect or impact of one variable on another without having any form of control over any of the variables. In this design, positive means that there is two variables investigated changes in the same direction while negative means that the two variables being investigated changes in opposite directions.

2.2 Study area

Rivers State, also known as Rivers, is a state in the Niger Delta region of southern Nigeria, formed in 1967, when it was split from the former Eastern Region, Rivers State borders includes; Anambra and Imo on the north, Abia and Akwa Ibom on the eastern part and Bayelsa and Delta on the west. The state capital, Port Harcourt, is a metropolis that is considered to be the commercial centre of the Nigerian oil industry.

With a population of 5,198,716 as of the 2006 census, Rivers State is the 6th most populous state in Nigeria. Rivers State is a diverse state that is home to many ethnic groups, the majority being Igbo, but also including the Ogoni and Ijaw. The state is particularly noted for its linguistic diversity, with 28 indigenous languages being said to be spoken in Rivers State, dominant of which, are the Igbo speaking groups, the Ogoni and Ijaw languages. Rivers State has a total area of 11,077 km^2 (4,277 sq mi) making it the 26th largest state by area and its geography is dominated by the numerous rivers that flow through it, including the Bonny River.

Figure 1: Map of River State Showing the 23 Local Government Areas (Obose, 2013).

2.3 Study Population and Sample Size

This study was designed to investigate the impact of preparedness on response to fire incidents by Rivers States fire service stations, hence, the population of this study were grouped into two which include, staff of the Rivers States fire service stations who will give the research information on preparedness of the fire- service station and the victims of fire incidents in the state who will give research information on the response of the fire service team during fire incidents. There are 5 fire service stations in Rivers State however, the River State Fire Service Cooperation could not disclose the number of staff working with them.

Based on the nature of this study, multiples sampling technique was adopted. For the fire service staff, all the five-fire service station were sampled. For the sample size, since the population of the State Fire Service Staff was unknown, the sample size was derived by computing the minimum sample size required for accuracy in estimating proportions by considering the standard normal deviation set at 95% confidence level (1.96), percentage picking a choice or response (50% = 0.5) and the confidence interval (0.05 = ±5) (Singh & Masuku, 2014). Using the Singh Masuku formula for sample size:

$$\text{sample size} = \frac{2ZP^2}{c^2} \quad (1)$$

Where: z is the standard normal deviation set at 95% confidence level (1.96), p is the percentage picking a choice or response (50%), c is confidence interval (0.05), thus, the sample size is given as sample size = 385. A sample size of more than 385 was ideal for the analysis according to the rule of thumb (Roscoe, 1975). For statistical convenience and to increase the confidence of the researcher, sample size of 400 was considered. Kothari (2004) added that a bigger sample size better represents a population.

Proportionate sampling technique was used to ascertain the number of sampled respondents for each of the five-fire service station within state using proportional fraction of their numbers of fire service stations. Thuse 80 respondent for each fire service station to make the 400 respondents. The same sampling technique was used to ascertain the respondents on the side of the victims who provide information on level of response of the fire service operatives.

2.4 Method of Data Collection

Two sets of questionnaires, namely Fire Service Team Response Questionnaire on Preparedness (FSTRQP) and Fire Incident Victims Questionnaire on Fire Team Response (FIVQFTR), whose reliability was tested using Cronbach's alpha see Table 1 and designed based on 5-point Likert scale was used for data collections

Table 1: Summary of Cronbach's Alpha Reliability Result

Variables	Dimensions/Measures	No. of items	Alpha Coefficients
preparedness	Training and competency	9	0.758
	planning	10	0.861
	Logistic and equipment	9	0.765
Response	promptness	7	0.712
	Responsiveness	6	0.706

2.5 Statistical Analysis

Data analyses were done using descriptive and regression statistics from SPSS version-20. The descriptive statistic was used to ascertain the level of preparedness and response while regression analysis was basically used to sort relieves to the flowing hypotheses.

Ho_1: The levels of preparedness (training, planning, logistics) of the state fire service have no significant impact on the promptness of fire service workers in Rivers States.

Ho_2: The levels of preparedness (training, planning, logistics) of the state fire service have no significant impact on the responsiveness of state fire service in Rivers States.

III. Results and Discussions

3.1 Level of preparedness of the State Fire Service to fire incidents

The summary of response of the respondents sampled from the state fire service station on preparedness are presented in the Table 2, 3 and 4 in terms of fire service training, planning and logistics respectively. And from Table 2, 3 and 4 it was observed that the cumulative average of the three constructs training, planning and logistics are 3.56, 3.61 and 3,51 respectively. These values are higher than 3.0 critical value for 5-point Likert scale. This means that the respondents agreed that level of preparedness of the fire service worker is good. This means that the fire service operative accept that the level of training, planning and logistics offered by River state fire service corporation to their workers is adequate.

Table 2: Response on Training of fire-fighters and fire service personnel in Rivers State

SN	Items	SA	A	D.	SD	UN	WA	R
1	The Management make firefighting training, drills and demonstration exercise available for the workers	24.00 6.40%	355.00 93.60%	0.00 0.00%	0.00 0.00%	0.00 0.00%	4.06	Agreed
2	The firefighting trainings provided by the management to workers are suitable to improve the competence and skills of firefighting personnel	130.00 34.40%	190.00 50.00%	59.00 15.60%	0.00 0.00%	0.00 0.00%	4.03	Agreed
3	The firefighting training provided by management are adequate for all kind of fire incidents	172.00 45.30%	0.00 0.00%	207.00 54.70%	0.00 0.00%	0.00 0.00%	3.36	Agreed
4	The firefighting trainings provided by management are sustainable	95.00 25.00%	284.00 75.00%	0.00 0.00%	0.00 0.00%	0.00 0.00%	4.25	Agreed
5.	The firefighting trainings provided by management are practical based.	130.00 34.40%	231.00 60.90%	18.00 4.70%	0.00 0.00%	0.00 0.00%	4.25	Agreed
6.	The firefighting training provided by the management are current trainings that are applicable globally	0.00 0.00%	190.00 50.00%	53.00 14.10%	136.00 35.90%	0.00 0.00%	2.64	Disagreed
7	The firefighting demonstration exercise provided by the management are provided on regular basis	59.0 15.60%	207.00 54.70%	0.00 0.00%	113.00 29.70%	0.00 0.00%	3.27	Agreed
8	The firefighting trainings provided by management are of international standard.	95.00 25.00%	18.00 4.70%	41.00 10.90%	225.00 59.40%	0.00 0.00%	2.25	Disagreed
9	On overall, the firefighting drill and exercise provided by the management have improved my firefighting skills	167.00 40.60%	130.00 34.40%	95.00 25.00%	0.00 0.00%	0.00 0.00%	3.91	Agreed
	TOAL						**3.56**	**Agreed**

SA-Strongly Agreed, A-Agreed, UN-Undecided, D - Disagreed and SD - Strongly Disagreed WA- Weighted Average R- Remark

Table 3: Response on planning for fire-fighting and emergency response in Rivers State

SN	Items	SA	A	D.	SD	UN	WA	R
1	The management, through the supervisors, make firefighting Plans available for the workers in every fire incident	213.00 56.00%	130.00 34.00%	36.00 9.00%	0.00 0.00%	0.00 0.00%	4.38	Agreed
2	The firefighting plans provided by the supervisors to workers are usually suitable for any emergency response to fire incidents	0.00 0.00%	36.00 9.00%	190.00 50.00%	18.00 4.00%	136.00 35.00%	2.50	Disagreed
3	The firefighting plans provided by supervisors are usually adequate for each fire incidents	0.00 0.00%	154.00 40.60%	130.00 34.2%	95.00 25.00%	0.00 0.00%	2.56	Disagreed
4	We have firefighting template provided by management, through the supervisors, for every kind of fire incidents.	95.00 25.00%	130.00 34.40%	0.00 0.00%	18.00 4.70%	136.00 35.90%	3.75	Agreed
5	The firefighting plans and template provided by management are practical based.	166.00 43.80%	77.00 20.30%	136.00 35.90	0.00 0.00%	0.00 0.00%	3.36	Agreed
6	The firefighting plans and template provided by the management are most current and are applicable globally	18.00 4.70%	154.00 40.60%	107.00 28.10%	101.00 26.60%	0.00 0.00%	2.69	Disagreed
7	The management, through the supervisors, conduct firefighting drill activities on the workers on regular basis	184.00 48.20%	195.00 51.60%	0.00 0.00%	0.00 0.00%	0.00 0.00%	4.48	Agreed
8	The management, through the supervisors, organizes physical fitness drill on the workers on regular basis	213.00 56.30%	166.00 43.80%	0.00 0.00%	00.00 0.00%	00.00 0.00%	4.56	Agreed
9	The management of the fire=service ensures that Hot-line call system is always available for fire victims to reach the fire-service offices	136.00 35.90%	243.00 64.10%	0.00 0.00%	00.00 0.00%	00.00 0.00%	4.36	Agreed
10	On overall, the firefighting plans as provided by management and enforced by supervisors have improved firefighting activities of the fire service.	00.00 0.00%	284.00 75.00%	16.00 95.00%	0.00 0.00%	0.00 0.00%	3.50	Agreed
	TOAL						**3.61**	**Agreed**

SA-Strongly Agreed, A-Agreed, UN-Undecided, D - Disagreed and SD - Strongly Disagreed WA- Weighted Average R- Remark

Table 5: Response on fire-fighting logistics and equipment in Rivers State

SN	Items	SA	A	D.	SD	UN	WA	R
1	The management, through the supervisors, make available all material and human resources needed for fire incident	0.00 0.00%	225.00 59.40%	124.00 40.60%	0.00 0.00%	0.00 0.00%	3.19	Agreed
2	The material resources provided by the management to workers are usually suitable for every fire incident	59.00 15.60%	154.00 40.60%	166.00 43.80%	0.00 0.00%	0.00 0.00%	3.28	Agreed
3	The material; resources provided by management are usually adequate for each fire incidents	0.00 0.00%	154.00 40.60%	166.00 43.80%	59.00 15.60%	0.00 0.00%	2.66	Disagreed
4	The firefighting resource provided by the management are most current and applicable globally	0.00 0.00%	154.00 40.60%	36.00 14.10%	189.00 45.30%	0.00 0.00%	2.36	Disagreed
5.	The management, through the supervisors, conduct routine check on the material and human resource on regular basis	183.00 48.40%	178.00 46.90%	0.00 0.00%	18.00 4.70%	0.00 0.00%	4.34	Agreed
6.	The management, through the supervisors, organizes routine maintenance on material resources on regular basis	284.00 75.00%	95.00 25.00%	0.00 0.00%	0.00 0.00%	0.00 0.00%	4.75	Agreed
7	The management of the fire=service provide a Hot-line calling system that	29.00 45.30%	12.00 18.80%	23.00 35.90%	0.00 0.00%	0.00 0.00%	3.73	Agreed

	is always available for fire victims to reach the fire-service offices							
8	The management ensures that the hot-line call numbers reach the public by announcing them on social media and mass media platforms	53.00 14.10%	308.00 81.30%	18.00 4.70%	0.00 0.00%	0.00 0.00%	4.05	Agreed
9	On overall, the firefighting logistics provided by management and controlled by supervisors have improved firefighting activities of the fire service.	112.00 15.60%	189.00 50.00%	27.00 9.40%	95.00 25.00%	0.00 0.00%	3.22	Agreed
	TOAL						**3.51**	**Agreed**

SA-Strongly Agreed, A-Agreed, UN-Undecided, D - Disagreed and SD - Strongly Disagreed WA- Weighted Average R- Remark

3.2 Level of Response for the State Fire Service to fire incidents

The summary of response of the respondents sampled from the victims of fire accidents in the State on level of response of the fire service operatives in terms promptness and responsiveness are presented in Tables 5 and 6, respectively. It was observed that the cumulative average of the two constructs promptness and responsiveness are 3.77 and 2.24 respectively. The value for promptness is lower than 3,0 critical values for acceptance while the value for responsiveness is higher than 3.0 critical value for acceptance. for 5-point Likert scale. This means that the fire victim disagreed that level of promptness is good and accept that the level of responsiveness is good which means that. According to the fire victims, the fire service operatives usually arise late to scene of fire accidents but are usually responsive when they eventually arise.

Table 5: Response of Fire Victims on Promptness of Response of Fire Service Personnel in Rivers State

SN	Items	**SA**	**A**	**D.**	**SD**	**UN**	**WA**	**R**
1	We obtained the fire-service hot-line easily from media platforms during the fire accidents	0.00 0.00%	0.00 0.00%	201.00 53.10%	178.00 46.90%	0.00 0.00%	1.54	Disagreed
2	The hotlines were available when we called for their response	0.00 0.00%	124.00 45.30%	0.00 0.00%	255.00 67.20%	0.00 0.00%	1.95	Disagreed
3	We called few times before the fire=service personal responded	0.00 0.00%	173.00 45.30%	207.00 54.70%	0.00 0.00%	0.00 0.00%	2.92	Disagreed
4	The fire-service personal that answered the calls was quite approachable.	0.00 0.00%	0.00 0.00%	379.00 100.0%	0.00 0.00%	0.00 0.00%	2.00	Disagreed
5.	The fire-service personal that answered the calls was friendly and showed sense of urgency and signs of being concern	0.00 0.00%	201.00 53.10	178.00 46.90%	0.00 0.00%	0.00 0.00%	3.08	Agreed
6.	The firefighting personal reached the fire incidents site on time considering distance of their station to position of the fire-accident	0.00 0.00%	95.00 25.00%	29.00 7,90%	255.00 67.20%	0.00 0.00%	1.83	Disagreed
7	On overall, the promptness of the fire-service personal to our calls was quite good	0.00 0.00%	95.00 25.00%	225.00 59.40	59.00 15.60%	0.00 0.00%	2.37	Disagreed
	TOAL						**2.24**	**Disagreed**

SA-Strongly Agreed, A-Agreed, UN-Undecided, D - Disagreed and SD - Strongly Disagreed WA- Weighted Average R- Remark

Table 6: Response of Fire Victims on Responsiveness of Fire-fighting Workers in Rivers State

SN	Items	**SA**	**A**	**D.**	**SD**	**UN**	**WA**	**R**
1	The fire-service personal that arrived at the fire accident site showed sense of urgency	118.00 31.00%	131.00 32.0%	124.00 33.00%	0.00 0.00%	6.00 4.00%	3.65	Agreed
2	The firefighting personal reached showed signs of professionalism in discharging their duty	237.00 64.00%	142.00 36.00%	0.00 0.00%	0.00 0.00%	0.00 0.00%	4.62	Agreed
3	The fire-service personals worked with some set plans and sense of purpose	118.00 31.00%	131.00 32.0%	124.00 33.00%	0.00 0.00%	6.00 4.00%	3.65	Agreed
4	The firefighting personals that responded to the fire accidents were receptive.	0.00 0.00%	249.00 65.00%	130,.00 35.00%	0.00 0.00%	0.00 0.00%	3.30	Agreed

5.	The firefighting personals that responded to the fire accidents were aware of what is required from them.	41.00 10.00%	338.00 90.0%	0.00 0.00%	0.00 0.00%	0.00 0.00%	4.10	Agreed
6.	On overall, the responsiveness of the fire-service personal to fire-fighting work was quite commendable	142.00 37.00%	36.00 9.00%	201.00 54.00%	10.00 16.00%	0.00 0.00%	3.29	Agreed
	TOAL						**3.77**	**Agreed**

SA-Strongly Agreed, A-Agreed, UN-Undecided, D - Disagreed and SD - Strongly Disagreed WA- Weighted Average R- Remark

3.3 The Relationship between Preparedness and Promptness of Fire Service Workers in Rivers States

Ho.1a: The level of training, of the state fire service has no significant effect on the promptness of fire service workers in Rivers States

Table 7: Results of ordinal regression analysis of the impact of level of training on competent level of fire-fighting workers and their Promptness in Rivers States

STATES	N.	Model estimate	Pseudo R-Square	Significant level (0.05)	Decision
Rivers	379	1.850	0.083	0.3050	**Not significant**

Table 7: contain the results of the Ordinal regression analysis carried out to ascertain the effect of training and competent level of fire-fighting workers on their Promptness in the states within the South-South. The results revealed that the relationship between the training level of fire-fighting workers and their Promptness in the states is positive. This result implies that one unit increase in training of the fire-service workers will triggers a corresponding 1.850 unit increase in promptness of the fire service workers Rivers State.

The pseudo R^2 values of 0.083 suggest that training is responsible for only 8% change in promptness of the fire service workers the states while other factors that were not considered in the models covered 92%. These results suggest that training and competency are not actually a true determinant of promptness except in River States.

For the hypothesis tests, the results also revealed that the training level of fire-fighting workers has no significant effect on the Promptness of the workers in Rivers State because their p-value is higher than 0.05, thus, null hypothesis is accepted and alternate hypothesis rejected

Ho.1b: The planning level of the state fire service has no significant impact on the promptness of fire service workers in Rivers States

Table 8: Results of Ordinal regression analysis of the relationship between planning and the Promptness of the fire-fighters in the States within the South-South

STATES	N.	Model estimate	Pseudo R-Square	Significant level (0.05)	Decision
Rivers	379	-0.327	0.083	0.8010	**Not significant**

Table 8 contain the results of the Ordinal regression analysis carried out to ascertain the effect of planning level of fire-fighting workers on their Promptness in the Rivers state. The results revealed that the relationship between the planning level of fire-fighting workers and their Promptness in River state is negative Rivers State. This result implies that one unit increase in planning level of the fire-service workers triggers corresponding reduction in promptness by 0.327 unit, this abnormality noticed in Rivers State could be as a result of administrative bottlenecks, leadership styles and other underlying factors that are peculiar to the fire service stations in Rivers.

The pseudo R^2 values of 0.083 suggest that planning level is responsible for only 8% change in promptness of the fire service workers for the state while other factors that were not considered in the models covered 92%. These results suggest that planning level are not actually a true determinant of promptness except in Rivers States.

For the hypotheses tests, the results also revealed that planning level of fire-fighting workers has no significant effect on their Promptness for Rivers State because their p-value is higher than 0.05, thus, null hypothesis is accepted and alternate hypothesis rejected

Ho.1c: The logistics and equipment availability level for fire-fighting workers has no significant effect on their Promptness in River Sate, Nigeria

Table 9: Results of Ordinal regression analysis of the relationship between the fire-fighting logistics and the Promptness of the fire-fighters in the Rivers States, Nigeria

STATES	N.	Model estimate	Pseudo R-Square	Significant level (0.05)	Decision
Rivers	379	0.753	0.283	0.2360	**Not significant**

Source; Researchers Computation 2022

Table 9 contain the results of the Ordinal regression analysis carried out to ascertain the effect of logistics availability level on the Promptness of fire-fighting workers in the state. The results revealed that the relationship between logistics and equipment availability level for fire-fighting workers and their Promptness are positive. This result implies that one unit increase in logistics and equipment availability level for the fire-service workers triggers a corresponding 0.753 unit increase in promptness of the fire service in Rivers States.

The pseudo R^2 values of 0.283 suggest that logistics and equipment availability are responsible for only 28% change in promptness of the fire service workers for the state while other factors that were not considered in the models covered 72% respectively. This result suggest that logistics and equipment availability is not actual determinant of promptness in Rivers State.

For the hypotheses tests, the results also revealed that logistics and equipment availability has no significant effect on the Promptness of fire-fighting workers in Rivers State because the p-value is higher than 0.05, thus, null hypothesis is accepted and alternate hypothesis rejected

3.4 The Relationship between Preparedness and Responsiveness of Fire Service Workers in Rivers States

Ho2a: The training and competency level of fire-fighting workers has no significant effect on their responsiveness to fire incidents in Rivers State.

Table 10 Results of Ordinal regression analysis of the relationship between training and competency level and Responsiveness of the fire-fighters in Rivers State

STATES	N.	Model estimate	Pseudo R-Square	Significant level (0.05)	Decision
Rivers	379	1.737	0.657	0.0361	**Significant**

Source; Researchers Computation 2022

Table 10 contains the results of the Ordinal regression analysis carried out to ascertain the effect of training level of fire-fighting workers on their responsiveness to fire incidents in Rivers State. The results revealed that the relationship between training and competency level of fire-fighting workers and their responsiveness to fire incidents in the state is positive. This result implies that one unit increase in training and competency of the fire-service workers will triggers a corresponding 1.737 unit increase in responsiveness of the fire service workers Rivers State.

The pseudo R^2 values 0.657 suggest that training and competency are responsible for 66% change in responsiveness of the fire-service workers for the state while other factors that were not considered in the models covered 34% respectively. These results suggest that training and competency are actually and true determinant of responsiveness in Rivers State.

For the hypothesis tests, the results also revealed that the training and competent level of fire-fighting workers significantly affects their responsiveness in Rivers State because their p-value is less than 0.05, thus, null hypothesis is rejected and alternative hypothesis accepted.

Ho.2b: The planning level of fire-fighting workers has no significant effect on their responsiveness to fire incidents in Rivers States.

Table 11 Results of Ordinal regression analysis of the relationship between planning level and Responsiveness of the fire-fighters in the states within the South-South.

STATES	N.	Model estimate	Pseudo R-Square	Significant level (0.05)	Decision
Rivers	379	-0.137	0.357	0.9290	**Not significant**

Table 11 contain the results of the Ordinal regression analysis carried out to ascertain the effect of planning level on the responsiveness of the fire service workers in Rivers States. The results revealed that the relationship between the planning level of fire-fighting workers and their responsiveness to fire incidents in the state is negative in the State. This result implies that one unit increase in planning level of the fire-service workers triggers a reduction in responsiveness by 0.137 unit, this abnormality noticed in Rivers State could be as a results of poor leadership style, administrative bottlenecks and other underlying factors that is peculiar to the state fire service station.

The pseudo R^2 values 0.357 suggest that planning level is responsible for only 36% change in responsiveness of the fire-service workers for the respective states while other factors that were not considered in

the models covered 64%. These results suggest that training and competency are not actually the true determinant of responsiveness in Rivers States because their level of involvement is less than 50%.

For the hypothesis tests, the results also revealed that the planning level of the fire-fighting workers has no significant effect on their responsiveness because the p-value is higher than 0.05, thus, null hypothesis is accepted and alternate hypothesis rejected.

Ho.2c: Logistics and equipment availability level has no significant effect on the responsiveness of the fire-service workers to fire incidents in Rivers State.

Table 12 Results of Ordinal regression analysis of the relationship between logistics availability and Responsiveness of the fire-fighters in Rivers State

STATES	N.	Model estimate	Pseudo R-Square	Significant level (0.05)	Decision
Rivers	379	-0.305	0.357	0.6260	**Not significant**

Table 12 contain the results of the ordinal regression analysis carried out to ascertain the effect of logistics and equipment availability on the responsiveness of the fire service workers in Rivers States. The result revealed that the relationship between logistics and equipment availability level of fire-fighting workers and their responsiveness to fire incidents in the state is negative. This result implies that one unit increase in logistics and equipment availability level of the fire-service workers triggered reduction in responsiveness by 0.305 unit, this abnormality noticed in Rivers State could be as a results of poor leadership style, administrative bottlenecks and other underlying factors that is peculiar to the state fire service stations.

The pseudo R^2 0.357 suggest that logistics and equipment availability level is responsible for 36% change in responsiveness of the fire-service workers for the respective the state while other factors that were not considered in the models covered 64% respectively. These results suggest that logistics and equipment availability level are not actually the true determinant of responsiveness in Rivers States because their level of involvement is less than 50%.

For the hypotheses tests, the results also revealed that logistics and equipment availability have no significant effect on the responsiveness of fire-fighting workers to fire incidents for in Rivers State because the p-value is higher than 0.05, thus null hypothesis is accepted and alternate hypothesis rejected

IV. Conclusions

Based on these findings above, it was concluded that the preparedness level of Rivers State fire service workers is good in terms of training of fire service workers, planning of fire service operations and availability of logistics and equipment needed for effective fire service operation. The good level of preparedness in terms of training, planning and logistic availability could be attributed to the improved effort of the state government to combat problems of fire accidents in the state by ensuring that fire service workers are well trained and equipped to handle the challenges posed by fire outbreak within the state.

The outcome of the study also revealed the response level of the River State fire service workers is poor in terms of promptness but good in terms of responsiveness. The poor level of promptness could be attributed to issues of bad road and traffic usually noticed in river state which hinders free flow of vehicles including fire service trucks. The good level of responsiveness is attributed to the facts that the fire service workers are well trained and equipped to discharge their duties effectively in river state. Finally, the finding revealed that the preparedness of fire service workers in these states in terms of training, planning and logistics positively but insignificantly affected the response level of the fire service workers in area of promptness and responsiveness. This outcome implied that preparedness level of the fire service workers improved their level of response but this improvement is not substantial. This suggest that there are other preparedness factors needed to appreciably and substantially motivate the workers in order to have significant response. such factor includes increase in salaries, promotion and other bureaucratic and politics in workplace.

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