



Fire Disaster Emergency Practices of Selected Markets In South-South Region Of Nigeria

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ABSTRACT

Despite the importance of fire disaster emergency practices, it has been a thing of neglect in most public facilities in Nigeria and this has been a contributing factor to the never-ending fire incidents. The study assessed the fire disaster emergency practices among selected markets in south-south region of Nigeria. The study adopted survey research design and questionnaire for data collection among shop owner/space occupant across major markets in Rivers, Bayelsa and Cross-Rivers States. The result of the study showed that majority of respondents are aware of fire disaster in the markets (58.1%) and perceived electrical fault (64.3%) as the major causal agent of fire in the market. Furthermore, majority of the respondents disagreed about market association is charge with electrical work (70.0%), occupants are restricted from using naked fire (55.7%), space/shop occupants are restricted from domestic activities in the market (52.9%) and fire extinguisher is available in the market (78.7%). Overall, there was lack of prevention, mitigation and response measures among various markets and their occupants. The study therefore recommended that restriction should be placed on various fire causing agents and activities while electrical related activities should be done to standard and accordingly.

KEYWORDS: Fire Disaster, Disaster Emergency Practices, Markets, South-South

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I. INTRODUCTION

Various anthropogenic activities have led to improper planning or execution of urbanization process coupled with population growth has increased the exposure of human environment to various degrees of both natural and man-induced disasters. The occurrence of disasters and emergencies in Nigeria has increased in frequency and intensity in recent times. Among many man-induced disasters in Nigeria, fire disaster has become a regular phenomenon. In the last decade, the frequency, severity and intensity of fire outbreaks have been overwhelming which is not limited to residential areas (Iyaji et al., 2016) and institutions (Abdulsalam, et al., 2016; Ndetu and Kaluyu, 2016), even market places have, in recent times been impacted by fire disaster (Popoola et al., 2016).

On February 6, 2019, the fire destroyed 70 shops in Yan'Katako Market in Rijayar Lemo area of Kano. On January 12, 2018, no fewer than 100 shops, equipment and goods worth millions of naira were razed by an inferno at a section of the Sango Plank Market in Ibadan. On November 6, 2019, just as traders were stock-piling wares in their shops for Christmas sales, a multi-storey building surrounding the popular Balogun market in Lagos was gutted by massive fire that blazed in the early hours of the day. Traders whose shops were razed in the market known for its wide selection of colourful Nigerian fabrics were shocked and devastated as they watched their means of livelihood go up in flames (Fakoyejo, 2020). Goods and property worth millions of naira were destroyed by fire at the timber section of the Industrial Market, Umuahia, Abia State, on New Year's Day (Sunday, 2020). No fewer than 120 shops were affected by the fire disaster that engulfed the market on Sunday in Ebonyi state (John, 2020). Fire in the early hours of Wednesday razed the Building materials market, Ogidi, in the Idemili North Local Government Area of Anambra State (Okafor, 2020).

Many market places in Nigeria have experienced numerous fire disasters; however, many of these disasters have been attributed to poor attitude and awareness, lack or poor facilities, poor knowledge on fire disaster response (Kihila, 2017; Adekunle, et al., 2018; Elenwo, et al., 2019). Despite the importance of fire

disaster emergency practices, Makanjuola, *et al.*, (2009) noted that fire emergency practices has been a thing of neglect in most public facilities in Nigeria and this has been a contributing factor to the never-ending fire incidents. This issue has continued to generate a lot of concern among the public as well as government. The study assessed the fire disaster emergency practices among selected markets in south-south region of Nigeria.

II. MATERIALS AND METHOD

2.1 Study Area

The South-South Region of Nigeria is located on $4^{\circ}21' 43.2''\text{N}$, $7^{\circ} 40' 52.8''\text{N}$ and longitude $5^{\circ} 8' 42''\text{E}$, $9^{\circ} 30'7.2''\text{E}$ (Figure 1) protruding towards the Gulf of Guinea on the Atlantic coast of West Africa (Shittu, 2014).

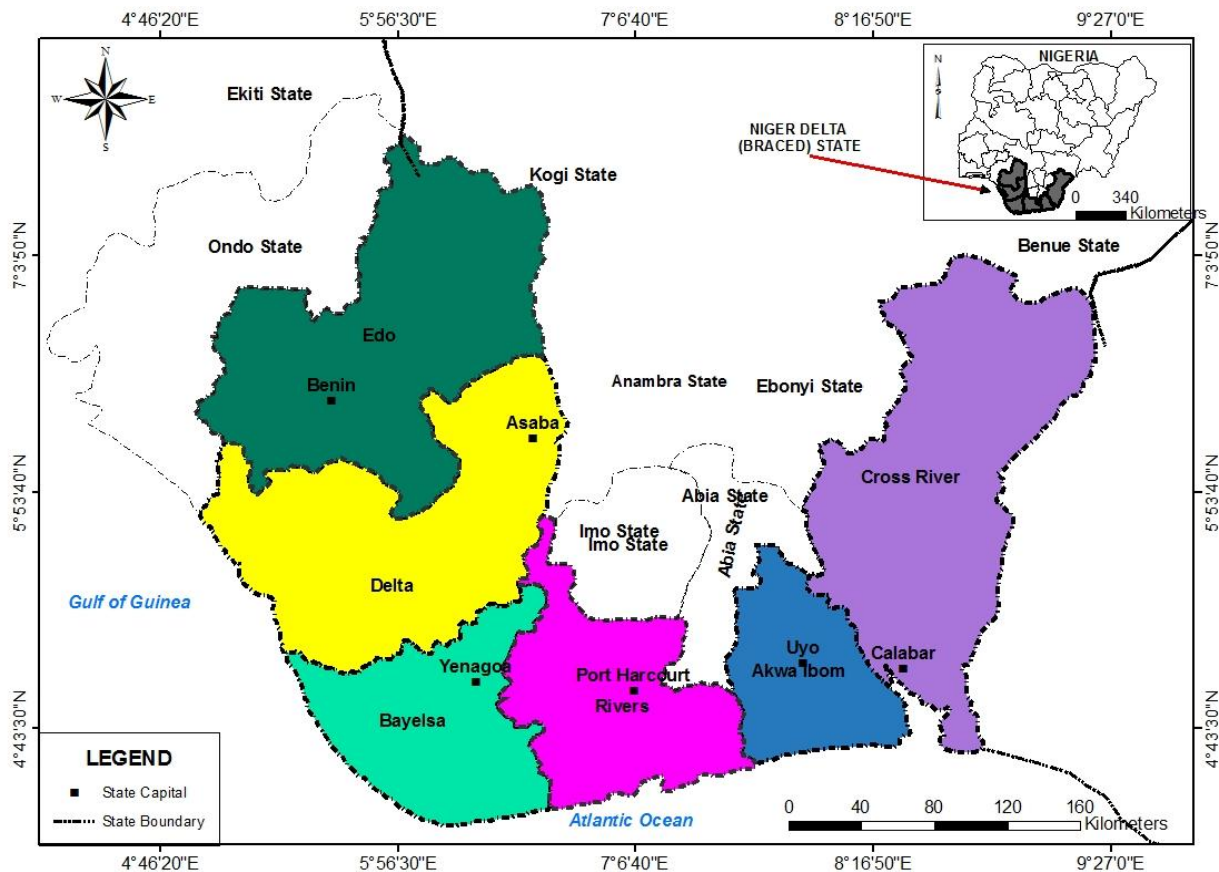


Figure 1: Overview of the South-South region of Nigeria showing the study areas

The region is a densely populated area in Nigeria. Its population is about 31 million people. The land mass extends over about $70,000\text{ km}^2$, and make up 7.5 percent of Nigeria's landmass. The region consists of Akwa- Ibom, Bayelsa, Cross- River, Delta, Edo and Rivers states. It harbours more than 40 ethnic groups, which include: the Annang, Efik, Ibibio, Isoko, Ijaw, Ikwerre, Oron, Itsekiri, Urhobo, Ukwani, Kalabari, etc. Each of these ethnic groups has its own unique feature in terms of culture. The region is oil-rich by nature and has been the centre of international controversy over waste of natural resources, pipeline vandalism, devastating pollution, ecocide, and human right violations. The nation extracts over 2 million barrels of crude oil from the region in a day (Ekwo, 2011).

2.2 Research Design

The study adopted survey research design. The study population comprised of shop owners/space occupants from major markets from Rivers, Cross-Rivers and Bayelsa States. For proper coverage, the database of the registered shop owner/space occupants from each market was sourced from the markets associations (Table 1). With the aid of Taro Yamane, 400 sample size was sorted across the study area while the distribution of the sample size was based on the percentage (proportion) of registered shop owner/space occupants from each markets. Simple random sampling technique was adopted for selection of respondents. Out of 400 copies of questionnaire purposively administered, 384 copies were properly filled and fit for analysis which represents 96% of administered questionnaires.

Table 1: Population of Registered Shop Owners/Space Occupants

States	LGAs	Markets	Registered Shop Owners
Rivers	Port Harcourt	Mile One Market	363
		Mile three Market	412
		Creek Road Market	191
	Obio-Akpor	Rumuokoro Market	109
		Rukpokwu Modern Market	62
Bayelsa	Yenagoa	Swali Market	216
		Okaka Market	197
		Opolo Market	117
		Tombia-Etegwe Market	92
		Kpansia Market	111
Cross River	Calabar South	Watt Market	301
		Marian Market	294
	Akpabuyo	Esuk Mba Market	112
Total	5	13	2577

Questionnaire was used to elicit information from respondents. The questionnaire adopted for the study made use of Likert 5points scale, open-ended and closed-ended format. The study examined numerous instrument items to arrive at the final output of instrument (Questionnaire) for validity purpose while the reliability was done based test-retest method which obtained reliability coefficient (c) of 0.7.

2.3 Data Analysis

The retrieved questionnaire was coded and subjected to Statistical Package for the Social Sciences (SPSS) for proper analysis. The descriptive statistics tool such as frequency counts, percentages of response and chats were adopted for the analysis of study objective while study hypothesis was analysed using Pearson product moment correlation (PPMC) Analysis.

III. RESULT AND DISCUSSION

3.1 Result

Table 2 highlighted the causes and frequent of fire incidents in the markets. The outcome indicated 58.1% of the engaged individuals are aware of fire disaster in the markets while 41.9% claimed otherwise. Among other things, 64.3% of the individuals involved in the investigation linked incidents of fire disaster to electrical fault, 14.6% linked it cooking with naked flames while 7.0% (each) of the individuals in the study linked fire disaster in the market to overload of electrical appliance, carelessness in the use of fire and other causal agents. Furthermore, those involved in the investigation claimed fire disaster often take place in less than 6-months which represent 11.2%, 26.3% claimed the oftenest is within one year, 42% claimed the oftenest is between 2-3years while 7.0% and 13.5% claimed the oftenest is between 4-5years and 6years more respectively. The extent of the frequency as indicated by those involved in the investigation was 37.8% for monthly extent and 62.2% claimed it was yearly extent.

Table 3 considered various prevention, mitigation and response measures towards fire disaster. The outcome indicated that 23.7% of those engaged in the study agreed that their market association is charge with electrical work, 70.0% disagreed while 3.4% undecided. 41.1% of the engaged individuals agreed that occupants are restricted from naked fire, 55.7% disagreed and 3.1% were undecided. 43.2% agreed that space/shop occupants are restricted from domestic activities in the market, 52.9% disagreed but such unit while 6.3% of the respondents were undecided. 32.6% of the engaged individuals agreed that hazardous chemical are restricted, 64.1% of the engaged individuals disagreed while 3.4% was undecided. Among the other things, 22.6% agreed that all electrical boxes are covered while 74.8% disagreed while 2.6% of the engaged shop/space occupants were undecided about such activities. 15.9% agreed that there market association ensure fire disaster readiness effectiveness while 74.0% disagreed 10.2% of the respondents were undecided. The outcome deduced that 30.2% agreed that market association create awareness about fire prevention while 67.7% disagreed while 2.1% was undecided. On market protection action, 42% agreed that occupants are advised and charged to engage in activities that help in minimizing fire hazard, 53.9% of the occupants assessed disagreed while 4.2% of the occupants were undecided. The outcome indicated that 23.7% agreed that the market in cooperation with government agency for their disaster mitigation actions while 73.4% disagreed on the existence of such cooperation with government agency while 2.9% are undecided. 20.1% of the occupants in the study agreed that the market has “exit route map” displayed across the market area while 76.3% disagreed about availability such

map and 3.6% of the occupants were undecided. Furthermore, 24.2% of the space/shop occupants agreed that the market has various fire mitigating devices installed across the market while 71.9% of the occupants disagreed while 3.9% was uncertain. 20.6% of the respondents agreed that fire extinguisher is available in the market while 78.7% of the engaged occupants disagreed about the availability of such device while 0.8% were undecided. The outcome of the investigation deduced that 32.6% agreed that water is available for fire hazard response, 59.2% of the respondents disagreed while 4.7% was undecided.

Table 4.3: Causes and Frequency of Fire Disaster in Markets

Variable	Frequency (n=384)	Percentage (%)
Aware of Fire Disaster		
Yes	233	58.1
No	161	41.9
Perceived Causes of Fire Disaster		
Electrical Fault	247	64.3
Cooking with Naked flames in the Market	56	14.6
Overload of Electrical Appliance	27	7.0
Carelessness in the use of Fire	27	7.0
Other	27	7.0
Frequency of Fire Disaster		
Daily/Weekly	-	-
Less than 6-Months	43	11.2
Within 1year	101	26.3
2-3years	161	42
4-5years	27	7.0
6years and Above	52	13.5
Extent of Frequency		
Daily	-	-
Weekly	-	-
Monthly	145	37.8
Yearly	239	62.2

(Source: Researcher's field work, 2021)

Table 4.6: Prevention, Mitigation and Response Measures

S/N	Prevention, Mitigation and Response Measures	SA (%)	A (%)	D (%)	SD (%)	UN (%)	Total (%)	Mean
1	Market associations are in-charge of electrical wiring of the market to prevent the use of substandard materials.	38 (9.9)	53 (13.8)	160 (41.7)	120 (31.3)	13 (3.4)	384 (100)	2.96
2	Shop/Space occupants are restricted from using naked fire (burning) in the market	65 (16.9)	93 (24.2)	164 (42.7)	50 (13.0)	12 (3.1)	348 (100)	3.39
3	Shop/Space occupants are restricted from domestic activities such as living and cooking in the market	53 (13.8)	113 (29.4)	179 (46.6)	24 (6.3)	15 (3.9)	348 (100)	3.43
4	Petrol, Kerosene and hazardous chemicals are not allowed to be stored in the market	49 (12.8)	76 (19.8)	210 (54.7)	36 (9.4)	13 (3.4)	348 (100)	3.29
5	All electric/mechanical equipment and junction boxes covered	55 (14.3)	32 (8.3)	217 (56.6)	70 (18.2)	10 (2.6)	348 (100)	3.14
6	Market association make certain that fire preventing measures are effective across the market	43 (11.2)	18 (4.7)	241 (62.8)	43 (11.2)	39 (10.2)	348 (100)	2.96
7	Market association create awareness about the risk associated with fire disaster.	74 (19.3)	42 (10.9)	208 (54.2)	52 (13.5)	8 (2.1)	348 (100)	3.32
8	Our market encourages and promotes actions that bring about shop/space owner	69 (18.0)	92 (24.0)	149 (38.8)	58 (15.1)	16 (4.2)	348 (100)	3.37

	participation in reducing the risk associated with fire disaster.							
9	For the effectiveness of the mitigation measure, our market is in partnership with government agency such as fire fighters.	28 (7.3)	63 (16.4)	206 (53.6)	76 (19.8)	11 (2.9)	348 (100)	3.05
10	Our market has “exit route map” displayed across the market area.	31 (8.1)	46 (12.0)	195 (50.8)	98 (25.5)	14 (3.6)	348 (100)	2.95
11	Fire alarm, Smoke/Heat detector, Emergency lighting are installed across the market	27 (7.0)	66 (17.2)	174 (45.3)	102 (26.6)	15 (3.9)	348 (100)	2.97
12	General purpose ABC fire extinguisher available in the market	23 (6.0)	56 (14.6)	168 (43.8)	134 (34.9)	3 (0.8)	348 (100)	2.90
13	Water is readily available in the market in response to fire disaster	49 (12.8)	90 (23.4)	133 (34.7)	94 (24.5)	18 (4.7)	384 (100)	3.15

NB: SA-Strongly Agree, A- Agree, D- Disagree, SD- Strongly Disagree and UD Undecided

(Source: Researcher's field work, 2021)

3.2 Discussion

Many of the space/shop occupants engaged in the study are aware of fire disaster in the markets while the causes of such fire range from electrical fault, cooking with open fire, overload of electrical appliance, carelessness in the use of fire in that order. There was corroboration with the study of Twum-Barima (2014) which asserted that wavering of electrical supply led to fire incidents in their studied markets couple with domestic activities involving open fire, surcharge of appliances and unprofessional wiring arrangement causes fire hazard. Ilori et al., (2019) study pointed out electrical-related issue as a causal-agent of fire hazard in learning institutions in Nigeria. According to Popoola et al., (2016), human remain the major causal agent of market fires and it is preventable and possibly annihilated once all causes are identified. Furthermore, the outcome indicated that market fire occurrence is within 2-3years majorly, although it takes longer time (4-5years and/or 6years or more) and shorter time (less than 6months) in some situation. For instance, the marketers of Esuk Mba Market claimed they have not witness fire hazard in about 6years more while those in Watt Market witnessed fire hazard twice within a year with an interval of about 4months.

The prevention, mitigation and response measures towards fire disaster for this study deduced that space/shop occupants disagreed about their market association being charge with electrical work, occupants are restricted from naked fire, domestic activities and hazardous chemical in the market, all electrical boxes are covered, market association ensure fire disaster readiness effectiveness and create awareness about fire prevention, market in cooperation with government agency for their disaster mitigation actions, the market has “exit route map” displayed across the market area, various fire mitigating devices installed across the market, fire extinguisher is available in the market and water is available for fire hazard response. This outcome is an indication for lack of prevention, mitigation and response measures among various markets and their occupants in South-south region of Nigeria. The finding is corroborated with of Alimasunya et al., (2019) where the learn institute of study showed inadequate practice towards fire safety measures such as fire-fighting apparatus, safety standard, response plan and governing association. Similarly, the study carried out by Menya and K’Akumu (2016) indicated insufficient capability towards fire prevention and mitigation practices identified by Alimasunya et al., (2019). The outcome of Abdulsalam et al., (2016) showed similarity to the present study which observed lack of all-encompassing disaster plan, insufficient fire-fighting amenities, incognizant of “exit route map” and generally poor understanding of fire hazards among the respondents. The observation from all the markets indicated lack of prevention, mitigation and response measures and part of the inadequacy noted was improper arrangement of the market, electrical wires are highly exposed and poorly arranged, lack of fire-fighting amenities and poor house-keeping.

IV. CONCLUSION AND RECOMMENDATION

Fire incidents have become a common phenomenon in recent time and not limited to a particular institution which resulted to various levels of impact on the lives, properties and environment. The essence of fire disaster emergency practices is to ensure that fire incidents occurrence is minimized and if does occurred, the impact is brought to minimal level. However, based on the outcome of the study, it was concluded that there is lack of prevention, mitigation and response measures among various markets and their occupants.

The study made the following recommendations;

- i. Restriction should be placed on various fire causing agents and activities while electrical related activities should be done to standard and accordingly.
- ii. Market association must collaborate with their occupants to develop ways of enlighten and training the marketers on preparedness and possible ways of responding to such event.
- iii. Government should make basic training on fire safety as a prerequisite for all traders/marketers before they are allotted shops or market spaces for them to carry out their businesses.

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