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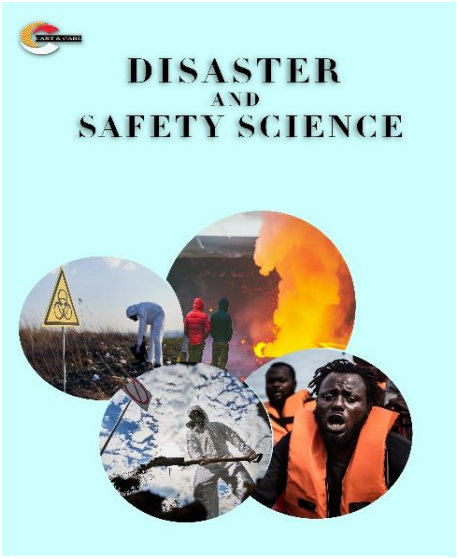

Assessment of Fire Disaster Emergency Preparedness Awareness Among Marketers at Major Markets in Niger Delta, Nigeria

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Abstract

Fire occupies a significant place in the daily activities of human beings, its occurrence in market places is a threat to lives and properties. The study assessed of fire disaster emergency preparedness awareness among marketers at major markets in Niger Delta, Nigeria. fire disaster emergency preparedness of selected markets in South-South Nigeria with the aid of survey research method. The study traversed through major markets in Cross River, Bayelsa and Rivers States and 384 space/shop occupants while data was gathered through questionnaire. Using descriptive statistics, the study outcome deduced that the causes of market fire range from electrical fault (64.3%), cooking with naked flames (14.6%), overload of electrical appliance (7.0%), carelessness in the use of fire (7.0%) and its occurrence is within 2-3years majorly (42.0%). Also, shop/space occupants showed inadequate understanding of fire disaster preparedness (39.3%); although, very adequate in their understanding towards fire safety practices (37.8%) while they responded to fire incident as a volunteer (40.1%). The study recommended the need for markets to partner with government agencies such as firefighting agency in order to improve their knowledge, awareness and fire disaster preparedness practice.

Keywords: Awareness, Emergency Preparedness, Fire Incidents, Fire Disaster, Disaster, Market, Niger Delta

Introduction

Various anthropogenic activities have led to improper planning or execution of the urbanisation process coupled with population growth has increased the exposure of the human environment to multiple degrees of both natural and man-induced disasters (Iyaji et al., 2016; Ugwu et al., 2022). The frequency and intensity of disasters and emergencies in Nigeria have recently increased. Fire disasters have become a regular phenomenon among many man-induced disasters in Nigeria. 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; Adeleye et al., 2020) and institutions (Abdulsalam et al., 2016; Ndetu & Kaluyu, 2016; Alimasunya et al., 2019), even market places have, in recent times been impacted by fire disaster (Popoola et al., 2016; Elenwo et al., 2019). According to Abdulsalam et al. (2016), fire is one essential good required by humans for their day-to-day activities; its occurrence in places where it is not required and, in some cases, beyond the capacity of its need, becomes a danger. As noted by Popoola et al. (2016), human activities such as burning, improper electrical works, high voltage electricity, and indoor/outdoor explosions are some of the causes of fire disasters, and these incidences are not restricted to a specific time or season.

Fire outbreaks have risen to worldwide attention in recent years as an environmental and economic issue (Agyekum et al., 2016). Sadly, Nigeria, like many other countries, has, over the years, experienced its fair share of fire disasters. In Lagos, the National Emergency Management Agency (NEMA) reported the average number of deaths between 2009 and 2014 due to fire disasters in buildings to be 98.4 (Adeleye et al., 2020).

Similarly, Popoola et al. (2016) reported increased incidents of fire outbreaks in many Lagos state markets between 2012 and 2014, while Ogunmosunle (2013) noted that 40% of fire incidents in Rivers state in the year 2012 took place in the marketplaces, resulting to injuries, destruction of properties and deaths. Elenwo et al. (2019) reported market fire incidents recorded in Port Harcourt between 2013 and 2020, while Okon and Njoku (2018) and Uguru and Obukoeroro (2020) reported market fire incidents recorded in Calabar Municipal and Yenegoa, respectively. These events have resulted in loss of lives, injuries and destruction of properties worth billions of Naira (Popoola et al., 2016; Elenwo *et al*., 2019).

Many studies have attributed these incidences to a lack of preparedness measures that ensure preventive and mitigation measures for fire disasters (Kihila, 2017; Adekunle et al., 2018; Elenwo *et al.,* 2019; Adeleye et al., 2020; Okwuonu et al., 2021). Many of the prominent marketplaces in the Niger Delta region of Nigeria have experienced numerous fire disasters, as earlier mentioned. However, many of these disasters have been attributed to poor attitude and awareness, lack of facilities, and poor knowledge of fire disaster response. Considering this shortcoming, the present study assesses fire disaster emergency preparedness among marketers at significant markets in Niger Delta, Nigeria.

Materials and Methods

Study area

The study was carried out within the Niger Delta Region of Nigeria, which is located at 4º49'60"N and 6º0'00" East (Figure 1), protruding towards the Gulf of Guinea on the Atlantic coast of West Africa (Shittu, 2014). The region comprises the present-day Abia, Akwa-Ibom, Bayelsa, Cross River, Delta, Edo, Imo, Ondo, and Rivers states. Major markets were selected from Bayelsa, Cross- River and Rivers states. The land mass extends about 70,000 km2, making up 7.5% of Nigeria's landmass. The Niger Delta 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 rights violations. The nation extracts over 2 million barrels of crude oil from the Niger Delta region in a day (Ekwo, 2011).

Research Design and Data Analysis

The study adopted a survey research design. The study population comprised shop owners/space occupants from significant rivers, cross-rivers, and Bayelsa State markets. For proper coverage, each market's database of the registered shop owner/space occupants was sourced from the market associations (Table 1). With the aid of Taro Yamane, 400 sample sizes were sorted across the study area, while the distribution of the sample size was based on the percentage (proportion) of registered shop owners/space occupants from each market. A simple random sampling technique was adopted for the selection of respondents. Out of 400 copies of the questionnaire purposively administered, 384 copies were filled correctly and fit for analysis, representing 96% of administered questionnaires. The retrieved copies of the questionnaire were coded and subjected to statistical analysis using Statistical Package for the Social Sciences (SPSS-21) for proper analysis. The study data were analysed through descriptive and inferential statistics.

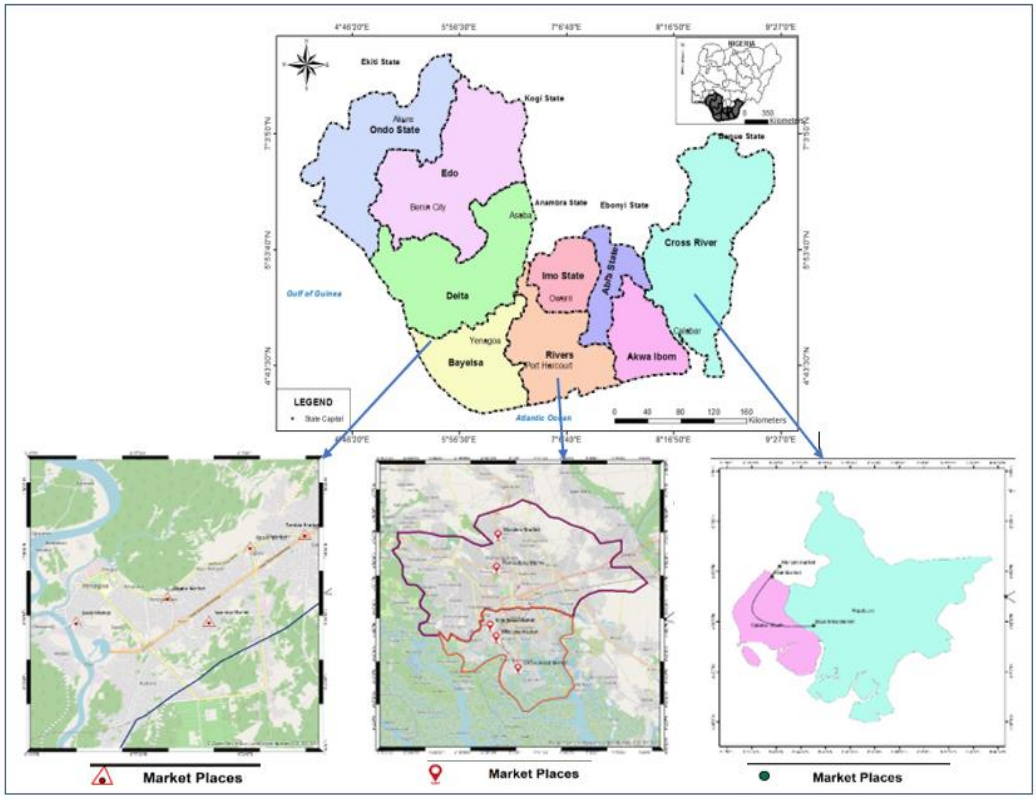

Figure 1: Overview of the Study Area and Study Points (Markets)

Table 1: Administration of the Questionnaire among the LGAs of Study

States	LGAs	Markets	Registered Shop Owners	Shop Owners' Registration (%)	Administration of the Questionnaire
Rivers	Port Harcourt	Mile One Market	363	14.1	56
		Mile three Market	412	16	64
		Creek Road Market	191	7.4	30
	Obio-Akpor	Rumuokoro Market	109	4.2	17
		Modern Market	62	2.4	10
Bayelsa	Yenagoa	Swali Market	216	8.4	34
		Okaka Market	197	7.6	30
		Opolo Market	117	4.5	18
		Tombia-Etegwe Market	92	3.6	14
Cross-Rivers	Calabar South	Kpansia Market	111	4.3	17
		Watt Market	301	11.7	47
		Marian Market	294	11.4	45
	Akpabuyo	Esuk Mba Market	112	4.4	18
			2577		**400**

Result

Socio-Demographic Details of the Respondents

The socio-demographic details of those involved in the assessment are presented in Table 2. The outcome deduced that 59.9% of the respondents engaged in the investigation were male within the age group of 30-40 years (43.5%). This indicated that most of those involved are within the age group that would understand the importance of the study. The marital status deduced that 58.3% are married and educated, with 35.1% and 15.9% possessing secondary and tertiary education, respectively. This implies that many of the respondents understand the present study. The investigation further indicated that 31.5% had occupied their shop/space for about six months to 4 years, 25.8% had occupied their shop/space for about 5-7years, and

42.7% had occupied their shop/space for about eight years and above. This indicates that many respondents can give accurate feedback concerning market fire incidents in the past few years.

Table 2: Socio-Demographic Details of the Respondents

Variable	Frequency (n=384)	Percentage (%)
Sex of Respondents		
Male	230	59.9
Female	154	40.1
Age (years)		
18-29 years	93	24.2
30-40 years	167	43.5
41-50 years	69	18.0
51-60 years	34	8.9
61 and above	21	5.4
Marital Status		
Single	89	23.2
Married	224	58.3
Divorced	57	14.8
Widowed	14	3.6
Educational Qualification		
No Formal Education	69	18.0
Primary	119	31.0
Secondary	135	35.1
Tertiary	61	15.9
Years of Occupancy of Shop/Space		
Less than 1year	52	13.5
2-4years	69	18.0
5-7years	99	25.8
8-12years	81	21.1
13years and Above	83	21.6

Causes and Frequency of Fire Disaster among Markets

The causes and frequency of fire incidents in the markets were assessed and presented in Table 3. The outcome indicated that 58.1% of the engaged individuals knew about market fire disasters, while 41.9% claimed otherwise. Among other things, 64.3% of the individuals involved in the investigation linked incidents of fire disaster to an electrical fault, 14.6% linked 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 indicated that fire disasters often take place in less than six months, which represents 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 the monthly extent, and 62.2% claimed it was the yearly extent.

Awareness and Knowledge of Fire Disaster Emergency Preparedness

The respondents' feedback on the extent of awareness and knowledge of fire disaster emergency preparedness was presented in Table 4. The outcome revealed that 32.0% of those individuals in the investigation indicated being cognisant of fire disaster emergency readiness, 18.8% claimed not to be cognisant, and 49.2% of those engaged are undecided about their cognisant of fire disaster emergency readiness. Considering the "Muster Point" point in the market, 27.3% of the engaged individuals claimed to be aware of the fact, 59.4% claimed not to be mindful of such a point, and 13.3% of the involved individuals are undecided about such a point. Similarly, 10.9% of the engaged space occupants claimed to know the emergency contact to reach during

a fire disaster, 81.5% are not cognisant of such contact, and 7.6% are undecided about the emergency contact. Among the shop occupants engaged, 9.1% claimed to possess a "very adequate" understanding of fire disaster preparedness, 22.9% claimed to possess an "adequate" experience, while 39.3% and 28.7% claimed to possess an "inadequate" and "very inadequate" understanding of fire disaster preparedness respectively.

Table 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

The outcome deduced that 32.8% of the occupants engaged in the investigation get their information from their association, 12.8% claimed they sourced their information through television and radio, 6.5% sourced through newspapers, 13.0% sourced through social gathering lectures, 13.3% source of information was based on their personal experience while 21.1% and 0.5% of the occupants engaged in the investigation claimed to source their information through family and friends and other possible sources respectively. Furthermore, 37.8% claimed to possess a "very adequate" understanding of fire safety practices, 15.6% claimed to possess an "adequate" experience, while 30.7% and 15.9% claimed to possess an "inadequate" and "very inadequate" understanding of fire disaster preparedness, respectively. The outcome indicated that 23.7% of the individuals involved in the study had never responded to a fire disaster emergency, 40.1% claimed to have responded but as a volunteer, 32.0% claimed to have responded but as a victim, while 1.6% and 2.6% of the shop occupants claimed to have responded as official responder from the market association and in another form respectively.

Table 4: Awareness and Knowledge of Fire Disaster Emergency Preparedness

Variable	Frequency (n=384)	Percentage (%)
Aware of Fire Disaster Emergency Preparedness		
Yes	123	32.0
No	72	18.8
Undecided	189	49.2
Aware of "Muster Point" During Fire Disaster		
Yes	105	27.3
No	228	59.4
Undecided	51	13.3
Aware of Emergency Number During Fire Disaster		
Yes	42	10.9
No	313	81.5
Undecided	29	7.6
Knowledge of Fire Disaster Emergency Preparedness		
Very adequate	35	9.1
Adequate	88	22.9
Inadequate	151	39.3
Very inadequate	110	28.7
Major Source of Information		
From the Association	126	32.8
Television and Radio	49	12.8
Newspaper	25	6.5
Social Gathering Lecture	50	13.0
Personal experience	51	13.3
Friends and Family	81	21.1
Other	2	0.5
Knowledge of Fire Safety Measures		
Very adequate	145	37.8
Adequate	60	15.6
Inadequate	118	30.7
Very inadequate	61	15.9
Ever Responded to Fire Disaster Emergency		
No	91	23.7
Yes, as a volunteer	154	40.1
Yes, as a Victim	123	32.0
Yes, as an Official Responder	6	1.6
Yes, as Other	10	2.6

Discussion

Causes and Frequency of Fire Disaster

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

Awareness and Knowledge of Fire Disaster Emergency Preparedness

Most shop/space occupants are undecided about fire disaster emergency readiness and the "Mustard Point" during a fire disaster. This is equivalent to a lack of understanding of preparing for market fire. Also, most engaged marketers are not cognisant of emergency contact to reach during a fire disaster. The finding showed similarities with the assessment of Anyanwu *et al. (2016),* where their respondents lacked the possession of contact to reach during fire incidents. As Ogbonna and Nwaogazie (2015) asserted, the opportunity for external response to reach out during fire incidents could eliminate or prevent fire from causing deaths and destruction. The outcome deduced that the respondents had an inadequate understanding of fire disaster preparedness; however, most respondents sourced their information from their association. Also, the respondents showed a very adequate understanding towards fire safety practices. According to the respondents, their safety practices include switching off all electrical appliances, avoiding flammable substances around their working environment and being careful with open fire burning activities. The outcome showed similarity with the work of Ogbonna and Nwaogazie (2015), where those involved in the study showed high knowledge of fire safety practices. However, the extent was linked to the kind of business environment the respondents worked which was the oil and gas industry, and such requires a high level of safety practices due to the high risk of fire occurrence in the industry. The outcome indicated that occupants of the space/shop responded to the fire incident as volunteers, victims, association officials and other responders in that order. According to the space/shop occupants at Marian Market, they are on their own whenever there is a fire outbreak in the market and most of the time; the firefighters come after we have put off the fire. Similarly, occupants engaged in the Swali market claimed fire-fighters are never available even if we call them about a fire outbreak. They sometimes claim a lack of water or no man on duty at the time of emergency.

Conclusion and Recommendations

Fire incidents have become a common phenomenon in recent times. They are not limited to a particular institution, which has resulted in various levels of impact on the lives, properties and environment. Market fire incidents in major cities of Nigeria have led to the destruction of goods worth billions of Naira with little or no resilience against the present and possibly future incidents. The essence of fire disaster preparedness is to ensure that the occurrence of a fire incident is minimised and that if it does occur, the impact is brought to a minimal level. However, to achieve this, the knowledge and awareness of the individuals in such an environment must be assessed and improved upon. From the study findings, it was concluded that the level of knowledge and understanding towards fire disaster emergency preparedness among marketers at significant markets in the Niger Delta, Nigeria, is minimal. It is therefore recommended that market associations should partner with Government agencies such as the Fire Service to always conduct quarterly fire drills/ fire awareness programmes for the traders/marketers, which will also form part of their preparedness plan and, at the same time, a preparedness measure in the case of market fire.

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