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ASSESSMENT OF SOCIOECONOMIC EFFECTS AND CAUSES OF FIRE OUTBREAKS IN GOMBE METROPOLIS

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Abstract

Occurrence of fire disasters in and around human living spaces is in evitable due to human error of omission or commission. Fire disasters claimed many families and rendered many more homeless. Property worth millions of naira and some important documents were lost due to fire disaster. The paper attempts to assess socioeconomic effects and causes of fire outbreaks in Gombe metropolis. The study employed descriptive statistics of the secondary data from fire service, Gombe. Similarly responses from the victims, community leaders, and fire-fighting officials were obtained and analyzed. The period (2012-2017) was considered due to remarkable fire outbreaks recorded in study area. From the records, there were about 828 recorded fire incidents in the study area within the time frame. The year 2015 recoded the highest case (413) with about 35 people killed and 203 seriously injured. Property worth about ₦1 billion were destroyed. The major cause identified was electric faults (85%). Other causes such as petroleum related causes (8%). On the other hand, arson, blast, candle, other unknown causes of fire disasters and those under investigation put together, occupied 7%. However, some of the challenges faced by Gombe Fire Service with respect to fire management include the use of obsolete equipment to combat fires in times of emergency, false calls, poor access roads, and attacks from some youths, among others. Similarly, the significant impacts in terms of lives lost, injuries sustained and properties damaged were also analyzed. It was revealed that the total lives lost due to fire outbreak within the time frame of this study 6 people, while the total injuries sustained were 25 persons, and the total estimated properties worth ₦1, 025,971,270 over the years under review. The paper proffered some recommendations in order to save lives and properties of people in the study area.

Keywords: Assessment, Socioeconomic, Effect, Causes, Fire outbreaks, Gombe Metropolis.

Introduction

Wikipedia (2015) defines fire as the rapid oxidation of materials in exothermic chemical process of combustion releasing heat, light and various reaction products. At appoint in time, combustion reaction call the ignition point, flames are produced. The flame is the visible portion of the fire. The

alarming cases of fire outbreaks in Nigeria in the recent years is frightening and

disturbing. The amount and value of the wealth destroyed, the number of lives lost and houses burnt to ashes can hardly be quantified. This makes it necessary to make people more aware and conscious about the causes and effects of fire disasters in their

immediate environment in order to save their lives and property.

It has been examined that, fire disaster remains the second to the flood disaster in terms of number of lives and property destroyed by fire in Gombe (Uwaifo, 2018). It is rarely a week passes without report(s) of fire incidence in one part of the metropolis or the other especially in the dry season during harmattan. In the harmattan season, the northeast trade winds are dry and mostly blow with high velocity across the country thereby facilitating the spread of fire to combustible materials around.

Fire disaster is evident and more pronounced in Gombe metropolitan area than other parts of the State. For instance, in the year 2012 about 185 people lost their lives due to 470 fire incidents in the country. (Nigeria Fire Service Commission, 2013). In the FCT alone, not fewer than 69 people were killed in fire incidents and property worth ₦765 million were destroyed in the year 2012. Other states such as Rivers, over 230 deaths were recorded, 73 injured in 227 fire incidents in the state, (Osaro, 2013). In the same vein, Lagos state recorded 417 fire incidents in two months i.e. between January and March 2015.

The trend of fire hazards in the study area is not completely different from what is obtained in other parts of country. For instance, 12 lives and property worth N279.8 million were lost to fire within only four months (i.e. January and April 2012). Recently (on 23rd February, 2017) the worse and pathetic fire disaster claimed a mother and four children at *Malam Inna* Quarters in Gombe Metropolis.

Other remarkable fire disasters in Gombe from the said date to the present time

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include that of the Gombe Grains Market (popularly known as *Tudun- Hatsi*) on the 21st may, 2014, also Gombe Main Market where more than 48 shops were razed by fire on the 27th December, 2016. Similarly, Students' Hostel (Abubakar House) in Government Science Secondary School Gombe was claimed by fire on 15th March, 2017. Three days after (i.e. on the 18th March, 2017) fire disaster claimed rams, animal feeds and other property worth millions of naira at Goats and Sheep Main Market (*Tiken Awaki*) near Dukku Motor Park.

According to Punch newspaper report (2016), "no fewer than 60 people and property worth ₦ 790.5 million were lost in fire disasters between January and November this year in Gombe State". Also an interview with the state fire service official (name and rank withheld) reads:

"The Fire Service has only two fire fighting engines in the Gombe metropolis, and under normal circumstances we are supposed to have eight. The two functional fire engines we have cannot cover the metropolis effectively and also there is a need to relocate the service from where it was to a permanent site where it would have enough space to perform effectively"

Fire is often described as the greatest servant but worst master, difficult to control when it turns due to its burning, scorching and destructive power. In addition to claiming of lives, fire destroys valuable property such as cars, houses food and documents.

In addition, the destructive power of the can occur especially when and where fuel and oxygen are readily available either in the room, office, vehicle, markets, bush, etc.

One irony to note about our commitment as a nation towards fire disaster control is the

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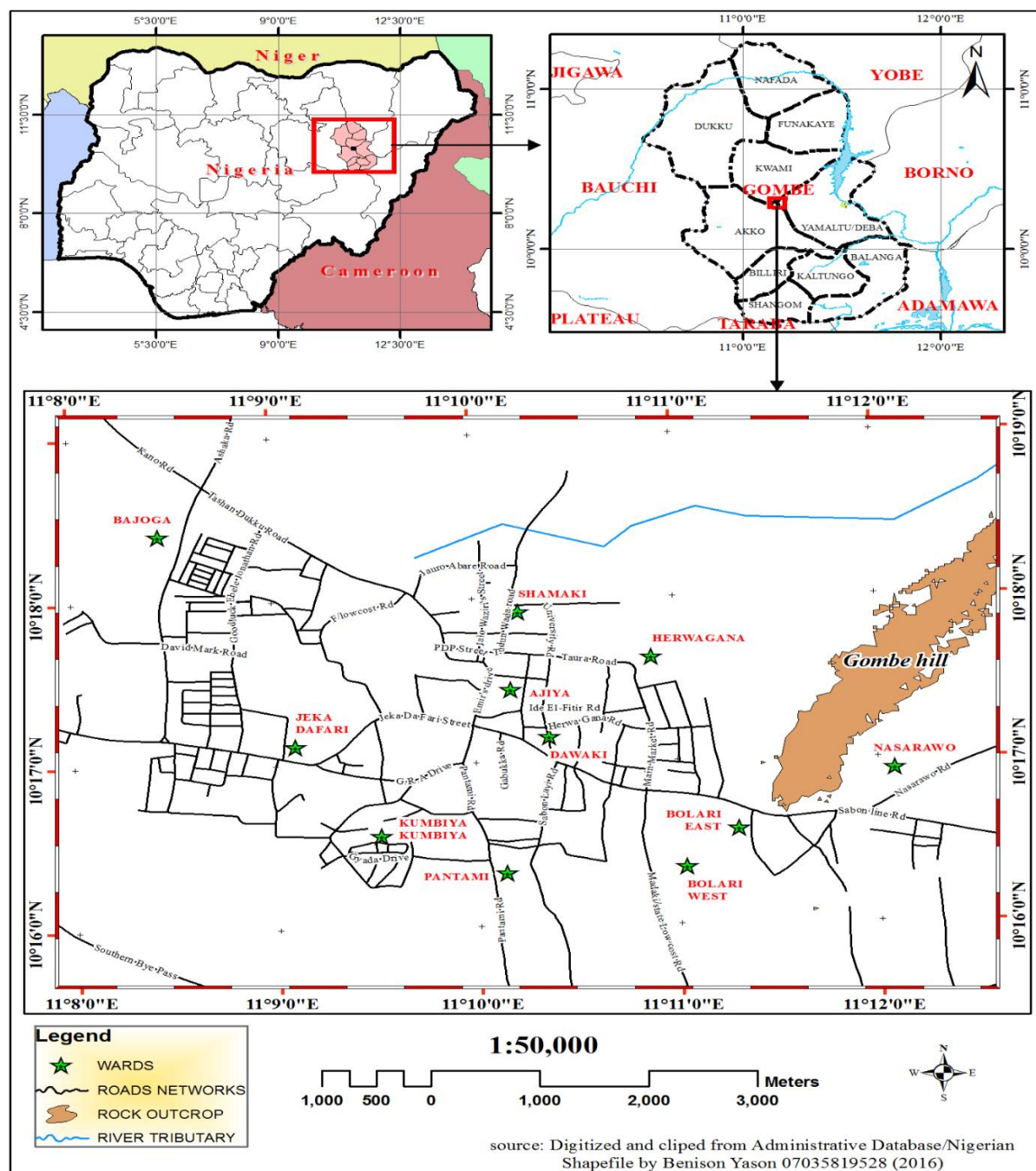
fact that the country with approximated population of 170 million people has not more 300 fire stations; while London City with about 8 million people has almost equals the number of firefighting stations (Osaro, 2013).

1.2 The Study Area

Gombe metropolis comprises part of Gombe local government area and Akko local government areas, this is the heart of the State as the State capital is Gombe local government area Gombe metropolis is located on latitudes $10^{\circ} 08' - 11^{\circ} 24' \text{ N}$ and longitudes $11^{\circ} 01' - 11^{\circ} 19' \text{ E}$, with a total area of about 175 km^2 (*Gombe State Government, ministry of land and survey. Pp7-25*)

It shares common boundary with Akko LGA in the South and West; Yamaltu-Deba to the East and Kwami to the North. Gombe

town is well linked by road to other regional centres like Biu / Maiduguri, Potiskum / Damaturu, Bauchi / Jos and Yola / Jalingo. A single gauge railway line on the Bauchi – Maiduguri route also links the town, in addition to an international airport (see figure 1.1 and 1.2). Gombe is the capital of Gombe State and is divided into eleven (11) wards which includes; Ajiya, Bajoga, Bolari East, Bolari West, Dawaki, Herwagana, Kumbiya-Kumbiya, Pantami, Jekadafari, Nasarawo, and Shamaki. Gombe metropolis here refers to the entire Gombe local government area and other sub urban areas that are in other local government areas but are parts of the Gombe metropolis and State capital. These include Jauro Abare, Jauro Kuna, Arawa, Kagarawal, Kundulum, Malan Inna, Barunde, Bye-pass, etc. See Figure 1.



Source: Modified in GIS Lab Geography Dept. GSU (2019)

Fig. 1: Map of Gombe metropolis showing the study area

1.3 Materials and Methods

In this paper both primary and secondary sources of data were used. In primary source of data fieldwork were carried out with aid of some undergraduate students of the Department of Geography Gombe State University with view to identifying major causes and effects of fire outbreaks in the study area. To achieve this, interviews were conducted with some Ward Heads, individuals (including victims), and Gombe State Fire Service Commission officials in order to acquire first-hand information on the substantial causes and effects of fire disasters in the town.

In view of that, the areas visited within the metropolitan centre where the interviews and questionnaires were administered include Jekadafari Quarters, Tudun Wada, Pantami/Gabukka, Malam Inna, etc. The

responses on the fire incidents for the said period have been accessed and analyzed.

On the secondary source of data, some academic journals, periodicals and other related information were also accessed on internet. These include Wikipedia, encyclopedia Encarta, etc. where different works and write-ups concerning fire disasters in Nigeria and beyond were studied as well as the records from the Fire Service, Gombe

1.4 Results and Discussions

Major Fire Outbreaks in Gombe (2012 – 2017)

There have been several cases of fire outbreaks in the metropolis within the baseline data collected. However, only the reported fire cases to the fire service commission were considered in this paper.

Table 1: Reported cases of Fire incidences in Gombe Metropolis (2012-2017)

Year	No. of Incidences	Lives Lost	Lives Saved	Injuries	Estimated Properties estimated loss in Naira (₦)
2012	-	0	356	6	124,325,000
2013	-	1	109	1	43,260,000
2014	-	4	111	7	5,530,000
2015	314	20	2504	21	238,114,270
2016	235	1	1175	74	373,906,000
2017	279	14	1,677	108	408,421,000
Total	828	40	5,932	217	1,025,971,270

Source: Gombe State Fire Service Department (2018).

Table 1 shows the records of fire incidences between 2012 and 2017. The records reveal that there were 828 fire incidences claimed about 40 people. While 217 people sustained injuries of varying degrees. However, the years 2015 and 2017 had the highest number

of death, 20 people (53%) and 14 people (18%) respectively). See Figures 4 and 5. Also Figure 2 indicates that the highest number of death and the rates of injuries were highest in the years 2014 and 2017.

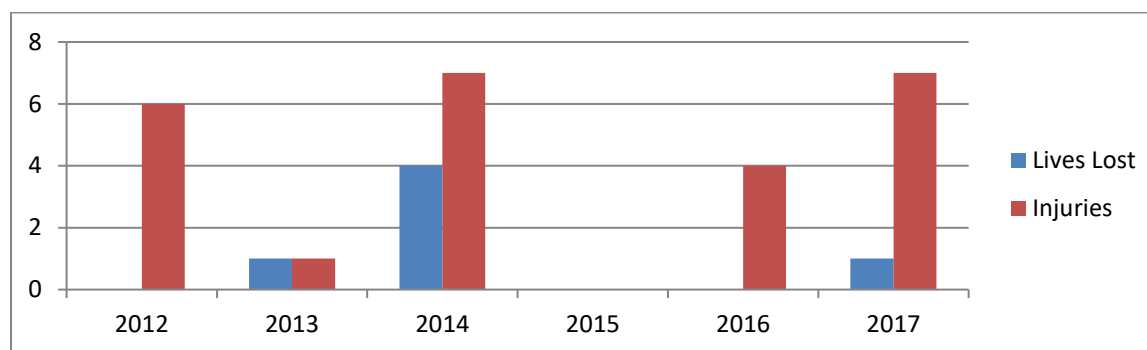


Figure 2: Showing the number of lives lost and injuries (2012-2017)

Peak periods

It was generally observed from the monthly records of fire incidences that the higher incidences occurred in March, February, April and January. This is attributed to the fact these are the driest months in the study area which is influenced by the harmattan. Both the wind and the surfaces are generally dry therefore can easily catch fire. While low record of the incidence was recorded in June, July, August and September in which the surfaces and the air are mostly wet and damp, and therefore do not encourage fire.

For example, in the year 2015 between November and April Gombe Fire Service Office received about 252 calls as against 47 calls between May and October the same year. Similarly in 2016, there was a total 160 calls between November and April against 65 between May and October.

Causes of Fire Outbreaks

Major cause of fire disaster in the study area identified was electrical faults which

could be as a result of illegal connection, overloading of electrical appliances, electric spark or use of substandard electrical materials (Gombe state fire service, 2017). The unknown can be referred to as those that the causes could not be ascertained due to late arrival of fire service personnel or as a result of total burning of everything making the trace of the cause cumbersome or very difficult.

The year 2017 was another remarkable year when inhabitants of Gombe metropolis experienced high rate of fire outbreak with a total of twenty-eight, the main cause was also electric that caused eighteen out of the twenty eight fire outbreak that occurred that year. One important factor that leads to the electric faults in some residences was caused by some rodents such as rats. They sometimes scratched the insulator of the electric cable wire in the ceiling which when sparked causes fire outbreak.

Table 2: Causes of Fire Outbreak in the Study Area

Causes	2012	2013	2014	2015	2016	2017
Electric	23	12	19	2	11	18
Unknown	10	2	1	8	1	6
Under Investigation	10	2	0	3	0	2
Petrol Storage	3	1	3	0	3	2
Arson	0	1	0	0	0	0
Blast	0	0	0	1	0	0
Pyromania	0	0	0	0	0	0
Candle	0	0	1	0	0	0
Total	46	18	24	14	15	28

Source: Authors' Fieldwork, 2018.

Basically, from the study, it could be understood that the factors responsible for fire outbreak in the study area could be categorized into two:

- a. Internal causes: these are factors mostly found within the building. This may include electrical appliances such as heaters, desk lamp, computers, and electrical cookers. These were found to be the major cause in the study area (see Table 2) etc. while, the unknown causes ranked the second.
- b. The external factors are those found outside a structure. This includes bush burning, deliberate act of setting fire in to someone's house (Arson and Pyromania). **Arson** refers to the act of malicious setting of fire to a house or other property. Only one case was reported in the study area. While **Pyromania** is the mental illness in which fires are repeatedly and deliberately set by a person suffering from mental retardation. In this case fire is set up without anger and monetary gains or other benefits. No case was reported in the study area also (see Table 2)

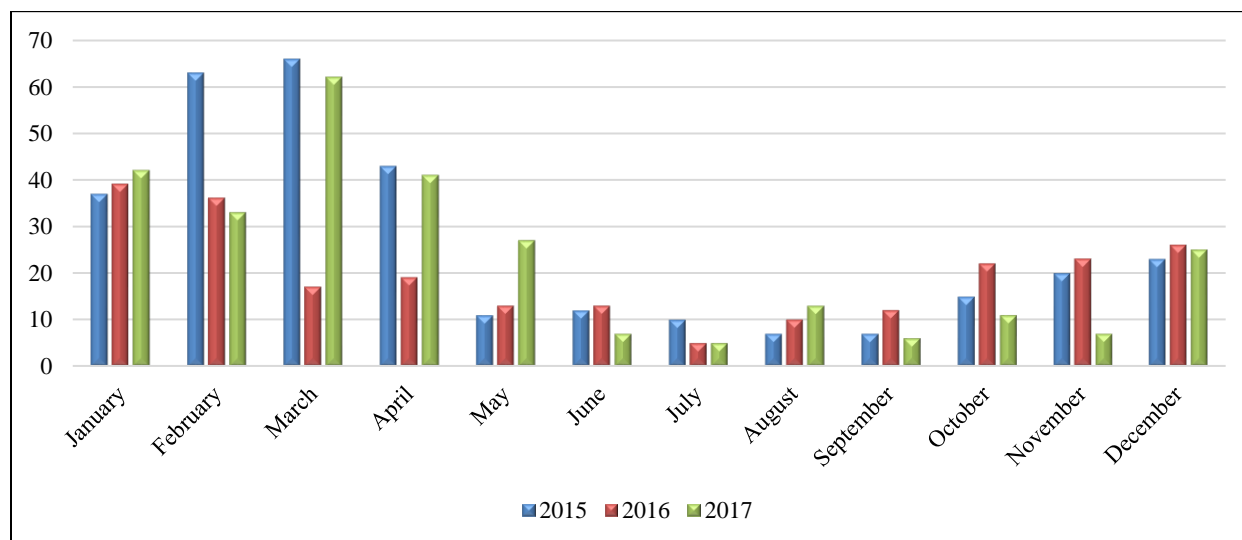


Figure 3: Mean Monthly fire incidences between 2015 and 2017 in Gombe Metropolis.

From Table 3: above, the year with the highest total number of fire outbreak in terms of frequency was 2015 and the main cause of fire was electricity, the year had a total number 314 fire cases of which 23 were identified as caused by electricity (Table 1).

It could also be observed that fire incidents were more concentrated between January and early days of May, which is considered as transition between dry and wet season in the study area. The rates of incidences become lower between June and September until around October through December when it picks up. This proves that there is relationship between fire incidence and seasons of the year which characterize the nature of the trade winds due to their source regions and properties among other things.

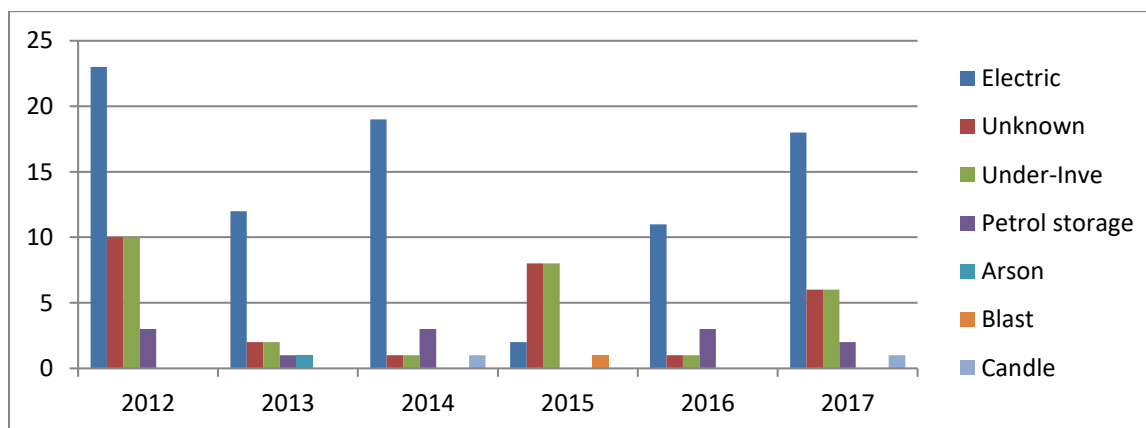


Fig 4: Frequency of fire outbreak for 6 years (2012-2017)

From Table 2 and Figure 4 above, it is obvious that some of the causes were yet to be identified; hence they were referred to as “under investigation”, while some could not be ascertained therefore they are referred to as Unknown. Those caused by lit candle could be traced to carelessness and

negligence especially on the part of adults who do not monitor the burning of candles before going to sleep.

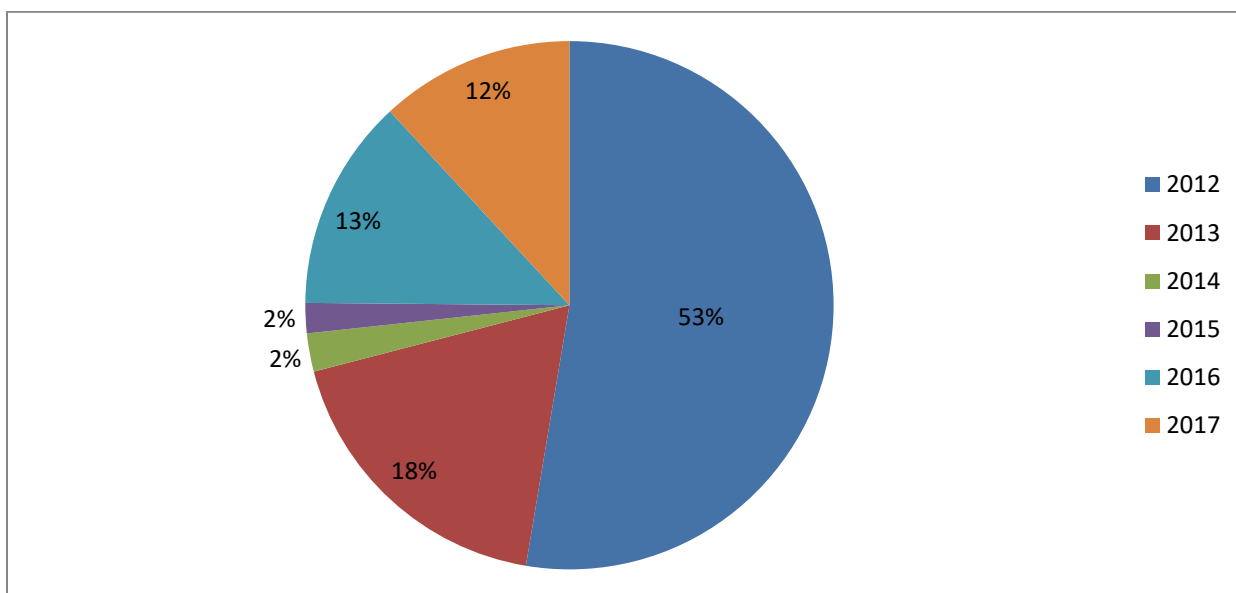


Fig 5: Estimated value of property lost due to fire outbreak in the study area between 2012 and 2017



Plate 1: Fire at Tashan Dukku Animal Market.



Plate 2: Fire at Timber Market Gombe

Socioeconomic Effects of Fire Outbreak

The impacts can be grouped into lives lost, lives saved and properties lost as well as injuries sustained. The environment also is getting polluted due to fire disasters which may consequently leads to health hazards more especially asthmatic patients was after the Jekadafari petroleum tanker fire disaster. The environment (air) took sometimes to get back to normalcy.

The effects of fire outbreak can be broad to the extent of causing psychological trauma, reducing the standard of living of the victims and sometimes leading to relocation out of the metropolis or out of the city and sometimes out of the State depending on the state of origin of the victim, the degree of damage of the fire and in most cases depending on the time of the outbreak. However, the black smokes come from the scene can be seen from distant places within the metropolis thereby making the situation of high blood pressure patients worsen.

This monies put together was not a small amount, it could have been used in promoting some small scale businesses, which will go a long way in decreasing the rate of unemployment among youths in the study area.

Challenges faced by the fire service

- i. Obsolete equipment: Most of the available equipment available was 911 Lorries manufactured about 50 year ago. Sometimes they could not move faster even during emergencies.
- ii. Poor training: Most of the staff members interviewed confirmed that they do not receive adequate attention from the policy makers like

police, immigration, custom, etc.

- iii. Negative attitudes of residents (attacks due to late arrivals): Another pathetic situation is attacks and stoning being perpetrated by some irresponsible members of society especially when they did not receive desirable services from the fire fighters. These youths do not consider the situation in the fire industry.
- iv. False calls: the same category of these youths that attacks fire-men, they sometimes make false calls just to deceive fire-men. This definitely demoralizes them in responding to calls during emergencies, even if the calls were genuine.

Conclusion

Fire has been described as the greatest servant but worse master; difficult to control when it turns into inferno as it wrath on burning and scorching everything in its path. It has no respect for man, rich and poor alike.

This paper discussed and analyzed the causes and impacts of fire outbreak in Gombe metropolis, Gombe State. Based on the results of this study, it is vividly clear that generally that the inhabitants were indeed vulnerable to fire outbreak in residential buildings, markets, offices, market places and business places. The prime cause was **electric related issues (85%)** such as; electric spark, power surge, illegal electricity connections, faulty sockets, substandard wires and electrifications etc. as well as Kitchen

appliances: such as gas cooker, ovens electric stove, gas cylinders etc.

The study further reveals that there were about 823 fire incidents in the study area within the years under review. About 35 people killed and property worth N1 billion damaged.

Recommendations

In order to achieve a huge success in safety of lives and properties and reduce the adverse effects of fire outbreak in the study area, the following recommendations are put forward:

- i. Awareness campaign should be organized regularly in form of seminars, meetings and orientation by the government through State Fire Service to the community leaders, traditional rulers and religious leaders etc. on fire safety and precautions.
- ii. Gombe State Fire Service should be well equipped by the government with modern equipment needed to combat fire in times of outbreak especially during emergencies also publicized their contacts via media.
- iii. The inhabitants of Gombe metropolis do not have the phone contact of the fire service in order to contact them when there is fire outbreak. These should be given out through the media such as radio, television and social media
- iv. The government should encourage people to have at least

one fire extinguisher at home and in the case of moving vehicles.

- v. The man power of the State fire Service should be reviewed as there is inadequate man power to respond to fire outbreaks in Gombe metropolis, this would also reduce the unemployment rate in the study area.
- vi. Legal actions should be taken against those that threaten fire fighters by stoning or using abusive words or languages against them.
- vii. Gombe State Urban planning should continue to make sure that proper urban planning is adhered to for easy access especially during fire disasters.
- viii. Only qualified in electrical installations should be allowed to purchase, connect and install electrical appliances in our homes, markets, etc.

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