
Analysis of the Recap of the National Fire Safety Code of Nigeria and the Effects on Public Buildings

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ABSTRACT

The Fire Code is a regulation made under the Fire Protection and Prevention Act, consisting of a set of minimum requirements respecting fire safety within and around existing buildings and facilities. The importance of public buildings in Nigeria cannot be over emphasized. For example, public buildings are major sources of livelihoods for many people. A contextual review of public buildings in Nigeria is therefore important; in order to appreciate the need for improved National Fire Safety Code in Nigeria. National Fire Safety Code of Nigeria was overviewed with the aim of being informed of the need to generate improved National Fire Safety Code that can efficiently reduce fire outbreaks in public buildings and thereby reduce the rate of socioeconomic lost as well as mitigating the release of harmful smoke to the environment. Evaluating the importance of public buildings to people, and the socioeconomic lost in Nigeria as a result of fire outbreaks in public buildings, as well as the negative effects of the harmful smoke that are being release to the environment are the objectives. The findings showed that, the adopted National Fire Safety Code of Nigeria focuses on active fire protection measures without emphasising on the passive fire prevention and protection measures. It also showed that, smoke from fire outbreaks in Nigerian commercial buildings is one of the causes of eye diseases, respiratory diseases, lung cancer and skin cancer, and it has also contributed to acid rain and global warming. It is expected that, this study shall reduce the socioeconomic lost in Nigeria as well as mitigating the release of harmful smoke to the environment and lay a foundation for further studying of fire outbreaks in public buildings in Nigeria. Thus, it is recommended that, improved National Fire Safety Code is generated by Nigeria, putting Nigerian culture, pattern of building designs and immediate circumstances into consideration.

Keywords: Public Buildings, Fire Code, Nigeria, Smoke, Socioeconomic Lost.

INTRODUCTION

Fire Code is a regulation made

under the Fire Protection and Prevention Act, consisting of a set of

minimum requirements respecting fire safety within and around existing buildings and facilities (Ontario Ministry of Community Safety and Correctional Services, 2016). It advances life safety for the public and first responders to fire outbreaks as well as property protection by providing a comprehensive, integrated approach to fire code regulation and fire hazard management. It is a set of rules prescribing minimum requirements to prevent fire and explosion hazards arising from storage, handling, or use of dangerous materials, or from other specific hazardous conditions. The fire code is aimed primarily at preventing fires, ensuring that necessary training and equipment will be on hand, and that the original design basis of the building, including the basic plan set out by the architect is not compromised. It also addresses inspection and maintenance requirements of various fire protection equipment in order to maintain optimal active fire protection and passive fire protection measures.

Fire safety is the set of practices intended to reduce the destruction caused by fire. Fire safety measures include those that are intended to prevent ignition of an uncontrolled fire, and those that are used to limit the development and effects of a fire after it starts. Fire safety measures include those that are planned during the construction of a

building or implemented in structures that are already standing, and those that are taught to occupants of the building. According to Code of Practice for Fire Safety in Buildings, 2011, fire safety in buildings is determined by a number of factors which are the provisions of means of escape in case of fire, the ability for a building to resist the effects of fire and to minimize the spread of fire and smoke, and the provision of means of access to enable firefighters to effect rescue and fight fire.

A public building is a building that is used for public use. Regional built-up markets, malls, retail stores, office buildings are examples of public buildings. Public buildings like regional built-up markets are major sources of livelihoods for many people (Amiteye, 2015) and market traders are able to contribute to the economic growth and development of the country in diverse ways. They contribute to generating local revenue, create employment, provide household incomes and support human resource development by providing for and educating their children or other family relatives (Owusu & Lund, 2004; Baah-Ennumh & Adom-Asamoah, 2012). Market places are economic, social, political and cultural institutions (Overa, 2006). Markets serve as places for various forms of cultural exchanges because traders are usually of heterogeneous ethnic backgrounds. Thus, a contextual

review of public buildings in Nigeria is therefore essential, in order to appreciate the need for improved National Fire Safety Code in Nigeria that can efficiently reduce the fire outbreaks in public buildings.

STATEMENT OF THE PROBLEM

According to International Fire Code, 2006, fire protection devices are to be maintained in an operable condition at all times. Lives and properties can be saved by being prepared before fire outbreaks in buildings (Alhaji, 2014 and Seattle Government, 2016). However, across the length and breadth of Nigeria, frequent fire outbreaks in public buildings is a problem and it has led to loss of lives, goods and destruction of valuable properties (Federal Fire Service of Nigeria, 2016). There is no any month without fire outbreak in commercial building in Nigeria. Using markets for example, between January, 2015 and March, 2016, fire outbreaks in Nigerian markets have claimed 600 lives and properties worth 5.30 trillion naira (Federal Fire Service of Nigeria, 2016). This includes two trillion naira worth of goods and properties lost in the fire incident on the 26th March, 2016 at Abubakar Rimi Sabon-Gari market, Kano, Kano State, Nigeria (Federal Fire Service of Nigeria, 2016).

Air pollution occurs when the air contains fumes or gases, smoke, dust and odour in harmful amount;

smoke contains carbon dioxide (CO₂) and human activities that pumped excessive amount of CO₂ into the atmosphere are the causes of acid rain, and global warming by depleting the ozone layer [UNEP (United Nations Environment Programme) Collaborating Centre on Energy and Environment 2006; Jason, 2009; George *et al.*, 2013; British Columbia Government, 2016; Department of Environmental Protection, 2016; Union of Concerned Scientists, 2016]. Thus, as commercial building materials or components are being burnt when there are fire outbreaks in Nigerian commercial buildings, chemicals, insecticides, pesticides, fertilizers and other agricultural materials, paints, scientific and engineering products made of harmful materials, and divers products for sales in the commercial buildings are equally burnt. Consequently, damage has been made to atmospheric environment, through the released of harmful smoke (containing CO₂) to atmospheric environment as a result of these fire outbreaks and these in turn have caused acid rain and global warming.

The smoke being released to the atmospheric environment causes eye diseases by the time it enter the eye, respiratory diseases and lung cancer by time is inhaled, and it also make ozone layer to be worn out by making ozone holes to allow harmful ultra violet rays to enter the

atmosphere of the earth, which affect human life through diseases, particularly, skin cancer (Jason, 2009; National Geographic, 2015; Department of Environmental Protection, 2016; Department of Health, 2016; Michael, 2016; Manitoba Health, Seniors and Active Living, 2016). Therefore, it can be logically said that, the harmful smoke being released to the atmospheric environment as a result of frequent fire outbreaks in Nigerian public buildings is one of the causes of eye diseases, respiratory diseases, lung cancer and skin cancer.

It can also be said that the more traders in the public buildings like markets try to save money, goods and properties from being destroyed by fire, during fire outbreaks, the more the inhalation of smoke for these attempts and even the people in the nearby buildings to the affected public buildings are not exempted from the inhalation of smoke, if these people remain in the nearby buildings to the affected public buildings during the fire outbreaks. Buyers in the public buildings like markets can equally be affected by the smoke, if the buyers fail to escape from the public buildings at the time fires started or before the excessive increase of smoke and subsequently, the increase of

congestion of escape routes by people which will hinder prompt escape. Plates I, II and III show the pictures of fire outbreaks in public buildings in Nigeria with the smoke being released to the atmospheric environment.

In the year 2002, Nigeria adopted the 1995 National Fire Safety Code of Canada, issued by the National Research Council of Canada which is subject to amendment from time to time by Canada (Nigerian Fire Safety Act, 2002). This implies that, whenever there is amendment of National Fire Safety Code of Canada due to change of circumstances, in order to have a suitable National Fire Safety Code in Canada, Nigeria will be following this amendment regardless of any opposite change of circumstance of Canada in Nigeria. This adopted National Fire Safety Code of Canada is not suitable for the kind of public buildings in Nigeria because, Canada and Nigeria do not have the same culture and they do not have the same pattern of the designs of the public buildings like regional built-up markets. Therefore, it is important for Nigeria to generate improved National Fire Safety Code that can efficiently reduce fire outbreaks in public buildings in Nigeria.



Plate 1: Fire Outbreak at the Singer Market, Kano, Kano State, Nigeria on 20th February, 2016 (Source: Kano State Fire Service, 2016: <https://www.newsbreak.ng/tag/kano-state-fire-service/>).



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Plate II: Fire Outbreak at Garki Model Market, Garki, Abuja, Nigeria, on 30th December, 2015 (Source: Federal Fire Service of Nigeria, 2016: <https://www.informationng.com/tag/federal-fire-service>).



Plate III: Grand Square Mall, Central Business District Area of Abuja, Nigeria on 23th October, 2015. (Source: The Scoop Nigeria: <http://www.thescoopng.com/2015/10/23/fire-engulfs-abujas-grand-square-mall-pictures/>)

AIM OF THE STUDY

The aim of this study is to overview the National Fire Safety Code of the Federal Republic of Nigeria, in order to be informed of the need to improve on National Fire Safety Code that can efficiently reduce fire outbreaks in the public buildings and thereby reduce the socioeconomic lost in Nigeria as well as mitigating the release of harmful smoke to the environment.

OBJECTIVES OF THE STUDY

Evaluating the importance of public buildings to people, and the socioeconomic lost in Nigeria as a result of fire outbreaks in public buildings, as well as the negative effects of the harmful smoke that are being released to the environment are the objectives.

JUSTIFICATION OF THE STUDY

Active fire protection measures are ways to stop the spread of fires by means of the application of fire

protection devices while passive fire prevention and protection measures are means whereby fires may be prevented as much as possible through designs and the use of appropriate materials and partially focused on programmes to educate people against starting fires. The ideal National Safety Code is to cover both the passive and active fire prevention and protection measures within and around buildings and facilities (International Fire Code, 2012; National Fire Protection Association, 2016; Nigerian Society of Engineers, 2016, National Institute of Building Sciences, 2017).

However, the 1995 edition of the National Fire Code of Canada that was adopted by Nigeria in the year 2002 as the National Fire Safety Code of Nigeria, as may be amended from time to time by Canada, focused on the active fire protection measures (under sections 2.7 and 6.7). Likewise, the 2005 edition of the National Fire Code of Canada, under Division B, Part 1 to Part 7, concentrated on active fire protection measures and flammable liquids in buildings. Similarly, the 2010 edition of the National Fire Code of Canada, under section 5.6, emphasised on the active fire protection measures in buildings and controlling fire outbreaks during construction of buildings. Also, the 2015 edition of the National Fire Code of Canada which is currently in use by Canada, under section 2.7,

concentrated on the active fire protection measures in buildings.

Considering the 1995 to 2015 editions of National Fire Code of Canada as adopted as National Fire Safety Code of Nigeria, emphasis has been given to active fire protection measures in buildings, without giving attention to passive fire prevention and protection measures in buildings and this is a gap in knowledge that needs to be filled. Filling this gap will reduce frequent fire outbreaks in public buildings in Nigeria.

FINDINGS

The 1995 edition of the National Fire Code of Canada that was adopted by Nigeria in the year 2002 as the National Fire Safety Code of Nigeria, as may be amended from time to time by Canada, focuses on the active fire protection measures and controlling fire outbreaks during construction of buildings, without giving attention to passive fire prevention and protection measures in buildings and this is a gap in knowledge that needs to be filled in order to reduce frequent fire outbreaks in public buildings in Nigeria.

The harmful smoke being released to the atmospheric environment as a result of frequent fire outbreaks in Nigerian public buildings is one of the causes of eye diseases, respiratory diseases, lung cancer and skin cancer. It has also contributed to acid rain and global warming.

BENEFITS OF THE STUDY

It is expected that, this study shall make the government of Nigeria to have improved National Fire Safety Code. The improved National Fire Safety Code will help in reducing fire outbreaks in public buildings in Nigeria and thereby reduce the socioeconomic lost as well as mitigating the release of harmful smoke to the environment. It is also expected that, this study shall lay a foundation for further studying of fire outbreaks in public buildings in Nigeria.

CONCLUSION AND RECOMMENDATIONS

Fire code is a set of rules prescribing minimum requirements to prevent fire and explosion hazards arising from storage, handling, or use of dangerous materials, or from other specific hazardous conditions. It is aimed primarily at preventing fires, ensuring that necessary training and equipment will be on hand, and that the original design basis of the building, including the basic plan set out by the architect is not compromised. A public building is a building that is used for public use. Regional built-up markets, malls, retail stores, office buildings are examples of public buildings. The importance of public buildings in Nigeria cannot be over emphasis. For example, public buildings are major

sources of livelihoods for many people and a contextual review of public buildings in Nigeria is therefore essential, in order to appreciate the need for improved National Fire Safety Code in Nigeria.

The aim of this study is to overview the National Fire Safety Code of the Federal Republic of Nigeria in order to be informed of the need to generate improved National Fire Safety Code that can efficiently reduce fire outbreaks in public buildings and thereby reduce the socioeconomic lost in Nigeria as well as mitigating the release of harmful smoke to the environment. Evaluating the importance of public buildings to people, and the socioeconomic lost in Nigeria as a result of fire outbreaks in public buildings, as well as the negative effects of the harmful smoke that are being release to the environment are the objectives. The findings showed that, the adopted National Fire Safety Code of Nigeria focuses on active fire protection measures without emphasising on the passive fire prevention and protection measures. It also showed that, smoke from fire outbreaks in Nigerian public buildings is one of the causes of eye diseases, respiratory diseases, lung cancer and skin cancer, and it has also contributed to acid rain and global warming. It is expected that, this study shall reduce the socioeconomic lost in Nigeria, as well as mitigating the release of harmful smoke to the

environment as a result of fire outbreaks in public buildings. It is also expected that, this study shall lay a foundation for further studying of fire outbreaks in public buildings in Nigeria. Thus, it is recommended that, improved National Fire Safety Code is generated by Nigeria putting Nigerian culture, pattern of building designs and immediate circumstances into consideration.

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