21

Assessment of Passive and Active Security Measures Against Bomb Blasts in Garki Model Market of The Federal Capital Territory of Nigeria

By

UGBEDE SUNDAY ODAUDU
Department of Architecture,
Kano University of Science and Technology,
Wudil, Nigeria.

And

ABDULLAHI TIJJANI ZAKARI
Department of Architecture,
Kano University of Science and Technology,
Wudil, Nigeria.

Abstract

Nigeria has witness bomb blasts in markets mostly in the northern part and Federal Capital Territory (FCT) of the country. Hence, it became necessary for a research to be conducted in Garki model market, since it is located in the FCT of Nigeria. The aim of the study is to assess the safety measures against bomb blasts in Garki model market in Abuja, in order to generate guidelines to improve security in the FCT markets of Nigeria. The instruments used to collect the primary research data were the questionnaire, discussions and direct observation schedule. Secondary data were collected from the reviews of materials that are relevant to this research. Tables and photographs were used to analyse the research data. Among the findings are: the market gates have no burglary wire on them to resist the bombers from jumping over them; the security personnel against bomb blasts are not adequate in the market. Among the recommended guidelines are: market gates must have burglary wire or any other security protective device on them to resist the bombers from jumping over them; adequate security personnel against bomb blasts in markets should be provided by the responsible authorities.

Keywords: Bomb Blasts, Guidelines, Markets, Nigeria, Security.

The history of mankind has been the best way of ensuring the security of people and their properties, territories, states and the entire country (Anyadike, 2013). Security has been considered to be worth preserving in any nation. It has been argued that the concept of security is associated with the safety and survival of the state or country and its citizens from harm or dangerous threats (Anyadike, 2013). Bomb blast is a threat that has been significantly rated in Nigeria. According to Walker (2012), the public places in Nigeria have been experiencing bomb blasts which are traceable to Boko Haram Group; they have led to a severe threat on the socio-economic life in the country. Markets are public places where almost all the basic needs of people are sold in wholesales and retails (Chabbi-Chemrouk, 2007; Ngugi, 2015). This means that they are public places where many people go for business transactions. Hence, determining the passive and active safety measures against bomb blasts in Nigerian markets is absolutely necessary because public places in Nigeria are prone to bomb blasts.

Passive safety measure is designing buildings against bomb blasts, while active safety measure is to establish the means of protecting buildings against bomb blasts via security gargets and personnel (Centre for the Protection of National Infrastructure, 2010).The necessity of these safety measures in Nigerian markets cannot be over emphasised. This is because Walker(2012); Elijah, Edem and Etuk (2015) stated that Nigeria has witnessed bomb blasts mostly in the northern part and Federal Capital Territory (FCT) and markets are among the public places of these threats. For example, there was a bomb attack on a busy shopping district in Wuse, Abuja on 25th June, 2014 which killed 21 people and injured 52 people (BBC News, 2014). Plate I shows the scene of a bomb blast in a shopping district in Wuse Abuja.

Plate I: Scene of a Bomb Blast in a Shopping District in Wuse, Abuja [Source: BBC News, 2014 (https://www.bbc.com/news/world-africa-28019433)].

Also, 15 people were killed due to bomb blast that occurred on 22nd December, 2014 in Bauchi market, Bauchi State of Nigeria (Premium Times, 2014). Plate II shows scene of a bomb blast at Bauchi market. In addition, 26 people were killed and 56 were injured on 5th January, 2018 due to a bomb blast in a market in Mubi, Adamawa State of Nigeria (Pulse, 2018).Moreover, 12 people were killed on 1st May, 2018 as a result of bomb blast in a market in Mubi, Adamawa State of Nigeria (Guardian News, 2018).

Plate II: Scene of a Bomb Blast at Bauchi Market [Source: Premium Times, 2014 (https://www.premiumtimesng.com/news/top-news/173660-breaking-fresh-explosion-rocks-bauchi-market.html)]

Based on the bomb threats in Nigeria, this study is therefore aimed to assess the safety measures against bomb blasts in Garki model market in Abuja, in order to generate guidelines to improve security in the FCT markets of Nigeria. Objectives of this study are: to determine the architectural design of Garki model market against bomb blasts; to ascertain the availability and adequacy of security gargets against bomb blasts in Garki model market; to evaluate the adequacy and effectiveness of security personnel against bomb blasts in Garki model market. The scope of this study is the entire Garki model market with all its buildings and security infrastructures. Garki model market is situated in the Federal Capital Territory (FCT) of Nigeria. The FCT of Nigeria is comprised of six local councils. They are the city of Abuja (Abuja Municipal Area Council), Abaji, Gwagwalada, Kuje, Bwari and Kwali (Satellite City Google Maps, 2016). Garki model market is located along Samuel Ladoke Akintola Boulevard (off Karaye Street); it is situated in the central part of Abuja Municipal Area Council of the FCT (Satellite Google Map Data, 2016).

Methods and Procedures

The study adopted descriptive survey method; generated quantitative and qualitative data. There are seven regional built-up markets under the control of FCT Markets Management Committee in the Federal Capital Development Authority of Nigeria(Federal Capital Development Authority, 2016). Purposive sampling method is known as judgmental, selective or subjective sampling due to the qualities the informants possess and usually, the samples being investigated are quite small with phenomenon of interest especially when compared with the probability sampling techniques (Etikan *et al.*, 2016; Lund Research Limited, 2012; Palinkas *et al.*, 2015). These seven regional built-up markets under the control of FCT Markets Management Committee are few in numbers. Therefore, by using purposive sampling method, Garki model market was selected for this study because it has been rated as a standard market (Abuja Markets Management Limited, 2016). Therefore, it became important that lessons should be learnt from this standard market with regards to the safety measures against bomb blasts.

The instruments used to collect the primary research data were the questionnaire, discussions and direct observation schedule.According to the managing company of Garki model market (Abuja Markets Management Limited, 2016), Garki model market is made upof558 open stalls and 872 lock-up shops. Thus, by summing up the numbers of open stalls and lock-up shops in the market, it mathematically implies that there are 1,430 sales points in Garki model market. 20% sample size of the target population of

the study is a good recommended sample size (Prashant and Supriya, 2010; Steve, 2011; Suresh and Chandrashekara, 2012). Hence, 287 sales points in the market and other infrastructures were studied via random sampling method. The 287 sales points selected for this study are slightly above 20% of the total number of sales points in the market and this in turn has made the sample size to be acceptable. In this case, copies of the questionnaire were administered to 287 sales people in the selected sales points with the help of four research assistants. This implies that in each selected sales point, a questionnaire was administered to one sales person. Hence, by using the same method, copies of the questionnaire were also administered to287 buyers in the market.

According to Masadeh (2012) and Morgan *et al.* (2002), the outstanding benefits of using the method of focus group in a research is acquired in smaller groups of four or five participants. Thus, they were organised for the various categories of sales people in the market with the help of four research assistants. In this research, focus group discussions that were made up of five sales people in 10 different groups were organised in the market. The reason for using up to 10 numbers of different focus groups in the market is to adequately and efficiently maximise the outstanding benefits of the research instrument or to get the maximum results from large numbers of the participants with respect to the size of the market in terms of the number of sales points in the market (1,430 sales points).Moreover, discussions were made with the management staff of the market with the support of direct observation schedule for the purpose of the study. Secondary data were collected from the reviews of materials that are relevant to this research as seen in Plates I and II and other content citations. Tables and photographs were used to analyse there search data.

Data Presentation and Discussion of Results

Data from the respondents with respect to the architectural design of the marketagainst bomb blasts; availability and adequacy of security gargets against bomb blasts; the adequacy and effectiveness of the security personnel against bomb blasts in Garki model market are discussed.

Architectural Design of the Market against Bomb Blasts

Adequacy of architectural design is the satisfaction derived from using the building with regards to aesthetic and functionality (Jawdeh, 2013; Mustafa, 2017). The adequacy of architectural design in this paper focused on the functional satisfaction in terms of the passive and active security measures against bomb blasts in the market. Hence, the majority of participants of this research responded that the architectural design of the market against bomb blasts is not adequate. This implies that the majority of participants of this research are not satisfied with the design of the market against bomb blasts. Table 1 shows the responses from the questionnaire with regards to the

percentages of adequacy and non-adequacy of the architectural design of the market against bomb blasts.

Table 1: Responses from the Questionnaires with Regards to the Percentages of Adequacy and Non-adequacy of the Architectural Design of Garki Model Market against Bomb Blasts.

S/N	Respondent	Number (Percentage) of Adequacy	Number (Percentage) of Non-adequacy
1	Sales People	104(34.5%)	183 (65.5%)
2	Buyers	76 (26.5%)	211 (73.5%)

Source: Researchers' Field Work, 2018.

The focus group discussion with sales people and the discussion with the management staff of the market revealed that the entire landmass of the market is fenced. It was observed that the fence walls are made up of sandcrete blocks with burglary wire on them. However, the market gates have no burglary wire on them to resist the bombers from jumping over them. Plate I shows an exit gate of the market without burglary wire or any other security protective device on it. It was observed that the market has one entrance gate and two exit gates. The discussion with the management staff showed that all of them are not bomb detecting type. It was observed that the market is not landscaped to check the movement of bombers; if the bombers can find their ways into the market, attacking people will be easy. Plate II shows the part of the market without ground cover for landscape.

Plate I: Exit Gate of Garki Model Market without Burglary Wire or any other SecurityProtective Device on it(Source: Researchers' Field Work, 2018).

Plate II: Part of Garki Model Market without Ground Cover for Landscape(Source: Researchers' Field Work, 2018).

It was observed that there are no defined car parking spaces in the market and as a result of this issue, people park cars indiscriminately in any available space. In this case, appropriate security check against bomb blasts is poor because the bombers can use this chance to bomb the market. Plate III shows indiscriminate parking of cars closed to the lock-up shop buildings in the market. It was also observed that the buildings in the market are made up of sandcrete block walls; when there are bomb blasts on this type of walls, they can collapse easily. In addition, it was observed thatthe spaces between the market buildings range from two metres to four metres in some areas. In this case, when there is a bomb blast on one building, the probability of the surrounding buildings to damage is high. Plate IV shows the open stall buildings in the market with inadequate spaces between them.

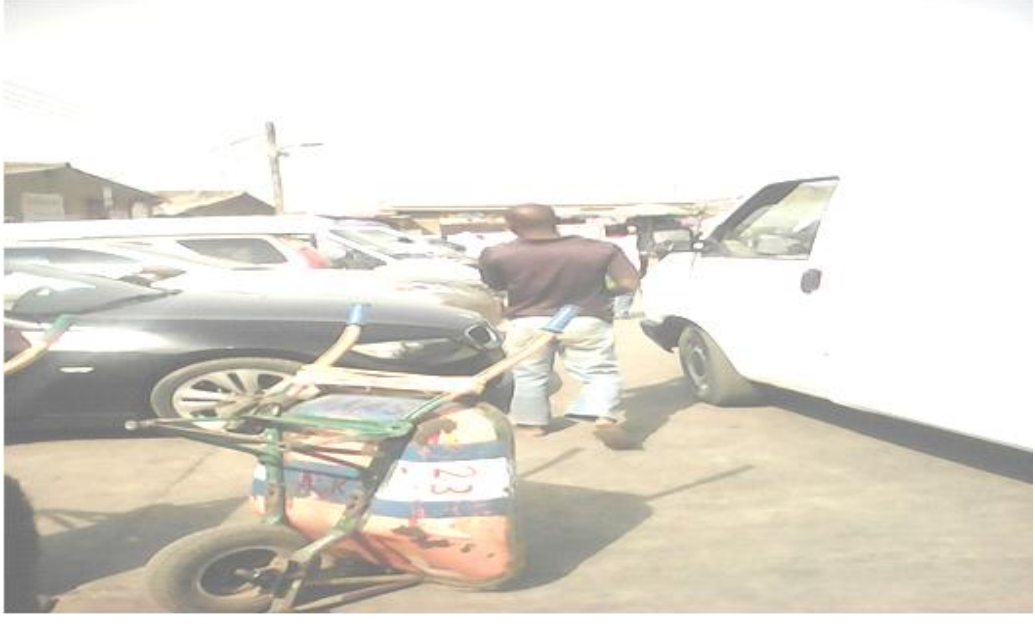

Plate III: Indiscriminate Parking of Cars Closed to the Lock-up Shop Buildings in Garki Model Market(Source: Researchers' Field Work, 2018).

Plate IV: Open Stall Buildings in Garki Model Market with Inadequate Spaces between them (Source: Researchers' Field Work, 2018).

Availability and Adequacy of Security Gargets against Bomb Blasts in the Market

The majority of participants of this research responded that the security gargets against bomb blasts are not adequate in the market. Table 2 shows the responses from the questionnaire with regards to the percentages of adequacy and non-adequacy of the security gargets against bomb blasts in the market.

Table 2: Responses from the Questionnaires with Regards to the Percentages of Adequacy and Non-adequacy of Security Gargets against Bomb Blasts in Garki Model Market

S/N	Respondent	Number (Percentage) of Adequacy	Number (Percentage) of Non-adequacy
1	Sales People	131 (45.6%)	156 (54.4%)
2	Buyers	119 (41.5%)	168 (58.5%)

Source: Researchers' Field Work, 2018.

The focus group discussion with sales people and the discussion with the management staff of the market revealed that there are Closed-circuit Television (CCTV) Cameras in the market but the detectors against bomb blasts are not available in the market. However, the use of mobilemetal detectors in the hands of security men at the entrance gate of the market were observed. There is a limit to which the mobile metal detectors can work because when metals are hidden in a rubber container they cannot be detected by the device.

Adequacy and Effectiveness of Security Personnel against Bomb Blasts in the Market

The majority of participants of this research responded that the security personnelagainst bomb blasts are not adequate in the market. Table 3 shows there sponses from the questionnaire with regards to the percentages of adequacy and non-adequacy of security personnel against bomb blasts in the market.

Table 3: Responses from the Questionnaires with Regards to the Percentages of Adequacy and Non-adequacy of Security Personnel against Bomb Blasts in Garki Model Market.

S/N	Respondent	Number (Percentage) of Adequacy	Number (Percentage) of Non-adequacy
1	Sales People	118 (41.1%)	169 (58.9%)
2	Buyers	83 (28.9 %)	204 (71.1%)

Source: Researchers' Field Work, 2018.

Conclusion and Recommendations

Security is associated with the safety and survival of the state or country and its citizens from harm or dangerous threats. Bomb blast is a threat that has been significantly rated high in Nigeria especially in its northern part and the Federal Capital Territory (FCT). To this end, Garki model market in Abuja was studied since it is located in the FCT of Nigeria, and the aim was to assess the safety measures against bomb blasts in the market, in order to generate guidelines to improve security in the FCT markets of Nigeria.

The research findings showed that: the architectural design of the market against bomb blasts is not adequate ;the fence walls are made up of sandcrete blocks with burglary wire on them but the market gates have no burglary wire on them to resist the bombers from jumping over them; the entrance gates to the market are not bomb detecting type; the market is not landscaped to check the movement of bombers; appropriate check against bomb blasts is poor in the market due to the lack of defined car parking spaces and this is leading to the indiscriminate parking of cars in any available space; buildings in the market are made up of sandcrete block walls, and when there are bomb blasts on this type of walls, they can collapse easily; the spaces between the market buildings range from two metres to four metres in some areas, and in this case, when there is a bomb blast on one building, the probability of the surrounding buildings to damage is high.

Other research findings are: the security gargets against bomb blasts are not adequate in the market;the detectors against bomb blasts are not available in the market; the security personnel against bomb blasts are not adequate in the market. Based on the findings of this research, the following guidelines are therefore recommended to improve security against bomb blasts in the FCT markets of Nigeria:

Guidelines for the Architectural Design of Markets against Bomb Blasts in the Federal Capital Territory of Nigeria

i. Markets should be adequately designed against bomb blasts.
ii. Market gates must have burglary wire or any other security protective device on them to resist the bombers from jumping over them.
iii. The entrance gates to the markets must be bomb detecting type.
iv. Markets should be landscaped to check the movement of bombers.

v. Markets should have defined car parking spaces to reduce indiscriminate parking of cars in any available space, in order to allow appropriate check against bomb blasts.
vi. Fences and other buildings in markets should be made up of concrete or stone walls or any other strong walling material to be able to resist bomb blasts.
vii. The spaces between market buildings should not be less than eight metres during the design and construction stages to reduce the damages of buildings, in case of bomb blasts.

Guidelines for the Security Gargets and Personnel against Bomb Blasts in Markets in the Federal Capital Territory of Nigeria

i. Adequate security gargets against bomb blasts in markets should be provided by the government.
ii. Adequate security personnel against bomb blasts in markets should be provided by the responsible authorities.

This research did not consider the fear of bomb blasts and the psychological effects of the fear on the people in the study area; this is a gap in knowledge. Therefore, in subsequent research of this nature, this gap should be filled.

References

Abuja Markets Management Limited (2016). Our Facilities. A Report of Facilities of AbujaMarketsManagementLimited.http://www.abujamarketsmanagement.com/our-facilities/. Retrieved on 06-06-2017.

Anyadike, N.O.(2013).Boko Haram and National Security Challenges in Nigeria; Causes and Solutions.*Journal of Economics and Sustainable Development,* 4(5), 12-23.

BBC News(2014).Nigeria: Abuja Bomb Blast in Wuse District Kills 21. Online News from the British Broadcasting Corporation.https://www.bbc.com/news/world-africa-28019433.Retrieved on 11-07-2018.

Centre for the Protection of National Infrastructure (2010).Protecting againstTerrorism.ProtectiveSecurityAdviceBook.https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/62120/protecting-against-terrorism-3rd-edition.pdf.Retrieved on 13-09-2018.

Chabbi-Chemrouk, N (2007). Koudougou Central Market.On Site Review Report.Burkina Faso 2007 Award Cycle.

Elijah, E.,Edem, T.E. &Etuk, U. (2015). Urban Planning, Architecture and Global Terrorism: The Nigerian Perspective.*European Scientific Journal,* 11(23),269-286, ISSN: 1857 – 7881 (Print) e - ISSN 1857- 7431.

Etikan, I., Musa, S.A. & Alkassim, R.S. (2016). Comparison of Convenience Sampling and Purposive Sampling. *American Journal of Theoretical and Applied Statistics,* 5(1),1-4.

Federal Capital Development Authority of Nigeria (2016). The Department of Urban and Regional Planning. Builders of Abuja.http://fcda.gov.ng/index.php?option=com_content&view=article&id=30&Itemid=66. Retrieved on 22-11-2017.

Guardian News (2018).Dozens Killed in Nigeria Suicide Bomb Attack. Guardian News Online.https://www.theguardian.com/world/2018/may/01/dozens-killed-in-nigeria-suicide-bomb-attack.Retrieved on 10-09-2018.

Jawdeh, H.B. (2013).Improving the Integration of Building Design and Facilities Management. A Doctorate Degree Thesis Submitted to School of the Built Environment, College of Science and Technology, University of Salford, United Kingdom.

John, P. (2014). *Physical Security and Environmental Protection.* A Book on Security and the Environment. London, New York: Taylor and Francis Group.

Lund Research Limited (2012).Purposive Sampling. Sampling Feature.http://dissertation.laerd.com/purposive-sampling.php. Retrieved on 11-10-2016.

Masadeh, M.A.(2012).Focus Group: Reviews and Practices.*International Journal of Applied Science and Technology*,2(10), 63-68.

Morgan, M., Gibbs, S., Maxwell, K.& Britten, N. (2002). *Hearing Children's Voices: Methodological Issues in Conducting Focus Groups with Children Aged 7-11 Years.* Thousand Oaks:Sage Publication.

Mustafa, F.A. (2017).Performance Assessment of Buildings via Post-occupancy Evaluation: A Case Study of the Building of the Architecture and Software

Engineering Departments in SalahaddinUniversity-Erbil, Iraq.*Frontiers of Architectural Research*, 6 (1), 412–429.

Ngugi, G.P. (2015). Urban Retail Market Transformation: A Case of Gikomba Market, Nairobi, Kenya.An Unpublished Thesis Write-up. Department of Architecture and Building Science, University of Nairobi.

Palinkas, L.A.,Horwitz, S.M., Green, C.A., Wisdom, J.P., Duan, N. & Hoagwood, K. (2015).Purposeful Sampling for Qualitative Data Collection and Analysis in Mixed Method Implementation Research.*Adm Policy Ment Health*, 42(5), 533–544.

Premium Times (2014).Fresh Explosion Rocks Bauchi Market. The Premium Times Online News.https://www.premiumtimesng.com/news/top-news/173660-breaking-fresh-explosion-rocks-bauchi-market.html.Retrieved on 22-08-2018.

Prashant K. and Supriya B. (2010). Sample Size Calculation. *International Journal of Ayurveda Research*, 1(1), 55–57.

Pulse (2018).More than 60 Killed in North-East Nigeria Suicide Blasts.The Pulse Online News.https://www.pulse.ng/news/local/boko-haram-more-than-60-killed-in-north-east-nigeria-suicide-blasts/jqhg7rk.Retrieved on 23-08-2018.

Satellite City Google Maps (2016). List of Six Local Councils in Abuja (Federal Capital Territory). http://naijatellit.blogspot.com.ng/2016/01/list-of-6-local-councils-in-abuja.html. Retrieved on 31-01-2017.

Satellite Google Map Data (2016). Location of Garki Model Market. Map Showing the Location of Garki Model Market.https://www.google.com/maps/@9.0220938,7.4905048,452m/data=!3m1!1e3.Retrieved on 22-09-2018.

Steve, C. (February 26, 2011). What is the Smallest Sample Size I can use for my Study?The Dissertation Statistics Consultant Blog.http://www.statisticsconsultant.com/dissertation-advice/what-is-the-smallest-sample-size-i-can-use-for-my-study/. Retrieved on 22-09-2016.

Suresh, K.P. & Chandrashekara, S. (2012).Sample Size Estimation and Power Analysis for Clinical Research Studies. *Journal of Human Reproductive Sciences*, 5(1),7–13.

Walker, A. (2012).What is Boko Haram? Special Report 308,June 2012.United States Institute of Peace.https://www.usip.org/sites/default/files/SR308.pdf.Retrieved on 19-09-2018.