

# Noise Levels in Markets in Ibadan, South West Nigeria



MKC Sridhar<sup>1\*</sup> and FO Omokhodion<sup>2</sup>

<sup>1</sup>Department of Environmental Health Sciences, University of Ibadan, Ibadan

<sup>2</sup>Department of Community Medicine, University of Ibadan, Ibadan

**Submission:** September 16, 2017; **Published:** October 27, 2017

\*Corresponding author: MKC Sridhar, Department of Environmental Health Sciences, University of Ibadan, Ibadan, Email: mkcsridhar@gmail.com

## Introduction

Markets in developing countries serve as vital socio-economic institutions. Their level of activities often reflects the prosperity of the country. Ibadan is now regarded as the second largest city in Black Africa next only to Lagos Metropolis. Much of the commercial activities in the city take place in the traditional markets within residential premises. The number of markets in the city have grown from 26 in 1972, 36 in 1985 and to about 47 by 1994. While these are well established, there are numerous other sites where selling and buying take place as the 'Yoruba' ethnic group, which is predominant in the city, are shrewd traders by tradition. The types of market stalls vary in Ibadan and they include: covered and lockable stalls, open stalls, open trading units with tables, and sale 'counters'.

The number of market stalls range from less than 100 (at Ijokodo area), to well over 5000 stalls at Dugbe and Gbagi areas Vagale [1], Filani & Iyun [2]. The quality of physical environment in the city markets is generally deplorable with the exception of a few newly built markets. Amenities such as water supply, toilet facilities and waste disposal are poor but access by road is reasonably adequate. Most of the major roads are open to them thereby exposing them to noise and vehicular emissions. Markets in the indigenous or traditional areas are always crowded and going by foot is more convenient.

In recent years it is being realized that noise does not have to be loud to cause health problems. There is increasing evidence that exposure to relatively low levels of noise for long periods can affect health, raising blood pressure, disrupting cognitive development in children, disturbing sleep and prompting psychiatric disorders Anon [3]. The data on noise levels in Nigerian urban centers is very limited and no information is available among the markets in particular, which are wide spread among the residential areas all over the city. This paper describes noise levels in various markets areas in Ibadan city, identification of locations where the noise levels are above the

permissible limits, and the activities that contribute to such higher levels.

## Materials and Methods

There are about 47 major markets in Ibadan city. These markets are of five types depending on the time of operation:

- Morning markets-held between 5.00AM and 12Noon and sell perishable goods such as vegetables and fruits.
- Day markets most common in Yoruba tradition and operate between 8AM and 7PM; characterized by very intensive commercial activities with high density of population, congestion and noise.
- Night markets – operate between 5PM and 10.00PM and specialize in selling various cooked foods; urbanization, however, has drastically reduced these types.
- Day and Night markets function between 8.00AM and 10.00PM and they deal with a variety of commodities.
- Periodic markets – held at intervals of 5 to 17 days during daytime; people from various nearby towns come and exhibit indigenous goods for sale.

Out of these, 22 were selected by random sampling. Night markets were not included in the study as they mostly deal with food items. Every market was visited during the peak period between 10 AM and 2 PM on working days. The sound levels were measured using CEL-269 Digital Integrating Sound Level Meter made in UK by CEL Instruments. At every point several readings, generally not less than three were taken and mean values and standard deviations were calculated before presenting in Tables.

## Results

The noise levels in various markets are presented in Table 1. The results indicate that the lowest mean noise level was 58.7dB

in Railway yard and New Gbagi markets. The highest levels of 88.13dB were recorded in plank section of Bodija market, which is the largest in the city. However, the ranges recorded 47dB as the lowest at the Cocoa House complex and a maximum of

100dB at slaughter slab area of cow section in Bodija market and electronic section of Agbeni market. These two markets are highly crowded at all times. The noise was mostly due to chatting and loud music.

**Table 1:** Noise levels in various markets under study.

Market	Year of Establishment	Number of Stalls	Noise level, (Range, dB (A))	Noise Level (Mean ± SD, dB (A))
Bodija	1987	2795	61-100 (n=15)	74.90 ± 10.4
Cow section	-	-	72-97 (n=15)	88.13± 9.5
Plank section	-	-	65-90 (n=19)	78.70± 8.2
Vegetable section	-	-	55-97 (n=6)	79.80± 18.1
Construction site	-	-	65-89 (n=10)	75.80± 7.7
Major road at the market	-	-	54-83 (n=16)	66.3± 6.9
Mokola	1950	997	52-85 (n=18)	64.7± 12.7
Sabo	1950	305	53-84 (n=20)	63.1± 8.3
Aleshinloye	1990	1596	50-100 (n=26)	65.1± 12.3
Agbeni	1950	4007	50-75 (n=8)	65.4± 9.6
Oje (fruit market)	1860	2741	54-74 (n=12)	63.0± 5.9
Agodi Gate	1968	3197	54-62 (n=11)	58.7± 3.3
New Gbagi	1989	2853	68-85 (n=9)	77.9± 5.1
Oja-Oba	1972	--	60-78 (n=13)	66.6± 7.3
Iwo Road	--	--	60-99 (n=54)	72.54± 8.5
Faleye (Automobile parts)	--	--	58-77 (n=11)	67.1± 5.8
Challenge	1977	314	61-78 (n=7)	68.9± 5.7
Ring Road	--	--	66-86 (n=9)	76.0± 5.9
Apata	1950	881	65-95 (n=21)	74.9± 8.9
Ojo	1950	2752	60-88 (n=16)	72.9± 8.1)
Shasha	1975	2853	47-75 (n=20)	65.3± 7.4
Cocoa House Complex	1960	--	63-70 (n=9)	66.9± 2.4
AG Leventis Supermarket	--	Single Unit	89-92 (n=1)	-
Sango, Music shop	--	Single Unit	52-93 (n=8)	66.0±13.6
Sango vegetable market	--	1074	53-97 (n=4)	79.3± 21.6
Samonda saw mills	--	A complex	55-64 (n=6)	58.7± 3.4
Railway yard market	--	--		

**Table 2:** Identified areas where noise levels exceeded permissible limits.

Specific Area	Noise Level Db (A)
Slaughtering area at Bodija market	
(Noise from people)	100
Music/Records Shop, Agbeni road side	93-100
Petrol Station generator (15 KV, < 2m away), Bodija market	98-99
Log cutting, Bodija market	97
Block making machine (cement in it), Bodija market	96-97
Plank cutting machine, in operation, Bodija market	95-97
Plank cutting machine, on but no plank in it, Bodija market	88-95
Grinding area, Ojo market	94-95
Pepper grinding machine, Sango market	93
Maize grinding machine, Bodija market	90-92

Music shop, Sango market	89-92
Petrol Station generator > 3 m away, Bodija market	89-90
Vulcanizers' air pump, Bodija market	83-90

The identified areas where the noise levels are more than the permissible limits are given in Table 2. The slaughtering area in Bodija market has the highest level followed by the electronics selling areas in Agbeni. In Bodija, about 300 cows are manually slaughtered every day from early hours of morning till late in the afternoon. Here, manual labour is used in bringing the cows to the place and in the slaughtering process. The sale of electronics and musicals are generally on the roadside and to attract the passersby, the traders play loud music. Other areas where the

noise levels are above the permissible limits were woodcutting, block making, grinding, petrol generators, and vulcanizing areas. The activities that contribute to higher noise levels are given in Table 3. Loading, unloading, grinding, cutting, sawing, tailoring, and cement block making are some of the activities that contribute to higher noise levels. Noise levels at the access roads and the road junctions are given in Table 4. The minimum recorded was 53dB and the maximum was 86dB. Some markets particularly [4].

**Table 3:** Various Activities that Contribute To Higher Noise Levels in the Markets.

Activity	Noise Level, Db (A)
Unloading goods in the market	65-72
Loading wood planks	72-75
Plank cutting operation	95-97
Log cutting	97
Vulcanizing	89
Maize grinding	90-92
General grinding (dry)	94-95
Yam flour grinding	70-75
A flour mill (small scale)	86-88
Pepper grinding (wet process)	80-93
Small scale grinding (5 in operation)	85-87
Block making machine in operation	96-97
Cash machine operation	63
Tailoring	
1 machine in use	76-77
4 machines in use	80-81
5 machines in use	84-85

**Table 4:** Noise Levels at The Road Junctions and Access Roads to Markets.

Roads / Junctions	Noise Level, Db (A)
Bodija market	
Entry to market, With no cars	65
With cars	70-75
Near petrol station	65-66
Near vegetable market	73-75
A side major road	68-75
Unloading area	65-70
Mokola market,	
Side entry road	63-66
Front entry road	63-73
Police van with siren	83
Railway yard area	60-64
Dugbe market junction	55-58

Alesinloye market side road	53-58
Kingsway / Adonis shops, Main road	58-62
Methodist area, main road	70-74
Agbeni main road	60-65
At a junction	64-72
End of the road / market	53-58
Mapo Hall junction	54-58
Oje fruit market, entry road	55-60
Agodi market area	
Taxi park	60-65
Traffic junction	55-60
Near post office	60-65
Iwo Road area	
No traffic	65
Heavy truck moving	78
Water tanker moving	78
Mary Hill School junction	70-75
Faleye automobile market area	
Salvation Army road junction (with traffic)	70-74
Salvation Army road junction (without traffic)	60-64
A 4-road junction near AGIP petrol station	70-75
Load carrier trolley	80
Idikan market area	69-77
Oke Ado area	
Ogunpa – Oke-Ado	65-80
Odusote bookstore area	66-71
Foko road junction	66-72
Isale-Ijale area	65-72
Oja-Oba market area	
No traffic	76-80
With car horn	83-85
Challenge, market area	63-77
Ring road area	65-78
Apata market area	
With traffic	76
A tipper reversing	81
A scooter	72-74
Main road junction	79-86
Petrol tanker moving	78
Cocoa House complex	
Main road	65-72
Main junction	69-75
Shasha market area	
Unloading area	68-72
A Truck accelerating	74-80

## References

1. Vagale LR (1972) Anatomy of Traditional Markets in Nigeria: Focus on Ibadan City, An occasional Publication from The Ibadan Polytechnic, Ibadan, pp. 1-38.
2. Filani MO, Iyun BF (1994) Markets, in "Ibadan Region". In: Filani MO, Akintola FO, Ikporukpo CO (Eds.), Ibadan, pp. 168-178.
3. Anon (1996) Plagued by noise, New Scientist, p. 14.
4. Federal Environmental Protection Agency (1991) Guidelines and Standards for Environmental Pollution and Control in Nigeria, pp. 67-68.



This work is licensed under Creative Commons Attribution 4.0 License  
DOI: [10.19080/CERJ.2017.02.555597](https://doi.org/10.19080/CERJ.2017.02.555597)

### Your next submission with Juniper Publishers will reach you the below assets

- Quality Editorial service
- Swift Peer Review
- Reprints availability
- E-prints Service
- Manuscript Podcast for convenient understanding
- Global attainment for your research
- Manuscript accessibility in different formats  
( Pdf, E-pub, Full Text, Audio)
- Unceasing customer service

Track the below URL for one-step submission  
<https://juniperpublishers.com/online-submission.php>