
ENVIRONMENTAL NOISE IN NIGERIA: PERCEPTION ON AWARENESS CAMPAIGNS BY THE RESIDENTS OF LAGOS STATE- IMPLICATION FOR ACHIEVING SUSTAINABLE DEVELOPMENT

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ABSTRACT

Environmental noise constitutes a serious health challenge in developing societies, particularly in a highly industrialised and urbanised setting like Lagos State, Nigeria. In Lagos the growth in environmental noise is unsustainable since it involves direct at the same time cumulative adverse health impact. When people are unhealthy, they can scarcely contribute their own quota to national development. There cannot be sustainable development without a healthy citizen. Many people in Lagos are not aware the relationship between environmental noise and sustainable development, so little or no attention is paid by the authority to control environmental noise. This study investigates influence of awareness campaign on perception of residents on environmental noise in Lagos-implication for sustainable development. This research is based on the hypothesis that there will be no statistically significant difference in the level of knowledge on sources of environmental noise and in exposure to awareness campaigns between residents in rural and urban areas in Lagos State that will bring about positive behavior toward environmental noise leading to achieving sustainable development.

The questionnaire and interview research instruments were used to collect quantitative and qualitative data. A total of 400 respondents were selected using purposive and cluster sampling methods. Respondents were selected from four local governments in urban and rural areas of Lagos State, Nigeria. Data were analyzed using the IBM SPSS version 23 Statistical tools, while hypotheses testing were carried out using independent sample t-test.

The study reveals that the level of knowledge on sources of environmental noise between the rural and urban residents in Lagos State is not statistically significant. This will have serious implications on sustainable development.

Based on the findings, the researcher recommended the need to raise awareness campaigns on environmental noise issues by government. Focus on massive enlightenment awareness campaigns aimed at informing, educating and sensitizing the public on the impact of environmental noise as it affect sustainable development.

Keywords: Environmental Noise, Media, Awareness, Campaigns, Sustainability.

INTRODUCTION

Environmental noise has become an increasingly widespread and serious source of discomfort and danger. It constitutes a serious public health problem which was associated with human life style and urbanisation. Environmental noise can be regarded as one of the agents of deterioration in people's quality of life in an urban environment (Berglund, Hassmen & Job, 1999). Environmental noise and its impact on health need to be considered as attribute of life indicators in sustainable development.

Awareness campaigns are widely used to expose high percentages of large populations to messages with the routine uses of existing media. A provocative remark or a creative slogan must be embarked by someone that will effectively bring about a successful awareness campaign. Chakravorty (2020), concluded that the media's play a role as an information provider also as a watchdog; with enormous responsibility towards society. Awareness campaign must run for over a prolonged period engaging residents at regular interval to be more effective as put forward by Biswas and Klrichherr (2014). In the recent time, sustainability and environmental awareness have gained media attention. The concept of sustainability has been in existence and use for nearly 30 years according to Alves, Silva, and Remoaldo (2015) even today it is still easier to define the concept than to apply it in practice.

The main purpose of environmental noise awareness campaigns is to bring harmonious living between human and nature; as a result Environmental noise must be controlled, using instruments of campaigns, to reduce its effects on people and Lagos at large. Singh and Rao (2001) emphasise that environmental awareness campaigns among the people had increased with greater expectations now for state and local governments to reduce noise levels.

Based on this, environmental awareness campaigns created by mass media are one of the most effective ways of getting the message across to the largest possible audience in a country. Khan (2016) opined that the level of environmental awareness should emphasize the causal relationship between the destruction of the environment on the one hand and social as well as health problems on the other hand and should point at the fact that especially the poorer, less educated people are exposed to environmental pollution.

The major sources of environmental noise in Nigeria cities as asserted by Oyedepo (2012) include road traffic, industrial machinery and generators. In their study, Pam and Garba (2019) pointed out that the desire for economic growth and prosperity has greatly increased the sources of environmental noise, most especially in the urban areas. The urbanization, economic growth and traffic situation are some of the contributing drive for environmental noise exposure with health impacts. Presently one of the greatest challenges to urban planning in the 21st century is sustainable development.

Murphy and King (2014) argue that environmental noise has traditionally been dismissed as an inevitable fact of life and has not been targeted and controlled to the same extent as other health risks, but today what was once referred to as a "forgotten pollutant" is now recognized by many as a public health issue that needs to be addressed in modern society.

Various researches revealed that environmental noise affects people's health which in turn has a negative impact on attainment of sustainable development. Hammer, Swinburn, and Neitzel (2014) found that habitual exposure to environmental noise causes a wide variety of adverse health effects. Also, Basner, Davis, Brink, Clark, et al. (2014) said that due to noise exposure, people are suffering from different kinds of diseases such as hearing impairment, interference with spoken communication, sleep disturbance and cardiovascular disturbance.

Münzel (2020) stated that noise can lead to sleep and activity disturbances, which in turn impact cognitive and emotional responses that could trigger an elevation of stress hormone levels. All these are major impediment to future sustainable development.

The environmental objectives for sustainable development policies can only be achieved if more people live and work in towns that are free of environmental noise. As a result, urban and rural areas must be changed in order to protect populations from exposure to noise. This clearly indicates that there cannot be sustainable development without a healthy citizenry. So talking of environmental sustainability is the ability to reduce the negative impacts of human behavior on environment. Sustainable development refers to a nation's attempt to control and reverse the negative effects of exploration and exploitation of natural resources, in order to preserve the environment for future use (Ochuko, Orikpete, Tambari et al., 2021).

This study focuses on influence of awareness campaigns on environmental noise on humans, and how this later impacts individual capital development that will in turn shape sustainable development. This paper looks at the sources of environmental noise and various mean of exposure to environmental noise with a view to examine the extent of effects of various sources of environmental noise and the mode of exposure to such noise. There is every indication that no community-level studies of environmental noise and awareness campaigns have been carried out in most of the selected areas especially the rural zone.

This study was motivated due to the absence of studies regarding influence of awareness campaign of environmental noise and its implication for sustainable development. It is guided by two research questions: (1) what are the sources of environmental noise identified by Lagos residents in the selected areas of study? (2) What are the dominant information sources available to Lagos residents on environmental noise?

The main objective of this study is to investigate the sources of environmental noise identified by Lagos residents and identify information sources on their exposure to awareness campaigns on environmental noise and the implications for sustainable development.

The study lastly, determines if the null hypothesis is rejected or not. Each indicator's hypothesis is based on the following suppositions: 1. No statistically significant difference in the level of knowledge on sources of environmental noise between residents in rural and urban residents in Lagos State. 2. No statistically significant difference in exposure to awareness campaigns on environmental noise between rural and urban residents in Lagos State.

The relevance of this study based on the fact that media has a large, more positive role to play in the investigation and dissemination of environmental noise awareness campaigns in relation to sustainable development, especially in the rural areas in which many studies have not been carried out. There also exists lack of studies on specifics impacts of environmental noise information sources. It became necessary to understand better the implicit shortfalls in the current methods of awareness campaigns of environmental noise barrier development in the areas of sustainable development. To fill the gap, the study did not only look at an awareness campaigns on environmental noise alone but went further to examine the implication on sustainable development.

The ability of the residents in identifying sources of environmental noise and various media through which they were exposed to environmental awareness will go a long way in changing their behavior towards the environment which will contribute greatly to sustainable development.

As of this study, it is difficult to ascertain the level of success recorded in area of environmental noise and sustainable environment. This paper contends that equilibrium should be created between environmental interest in creating awareness and sustainable development.

Literature Review

The concept of environmental awareness according to UNEP (1992) is explained as familiarity with an environmental subject with a real understanding of its deeper cause and implications. This is an indication that environmental awareness has a great effect in managing environmental attitudes which has a serious effect on environmentally friendly behaviours.

Thakur and Kaur (2018) defined environmental awareness as helping the social group and individual to gain a variety of experiences to acquire a basic understanding of the environment and its associated problems. It means awareness of the problems caused by environmental noise is the first step. Being aware that there are problems to be solved is a pre-condition to accepting the need for action to help solve them.

Media provide of public communication and defined by Jensen (2004) as a network to serve as a kind of cultural forum that organized and shapes our understanding of our social values. It can influence people's attitudes, and it has the power of convincing people and shape up opinions.

In the study of Chakravorty (2020) revealed that today, media have become essential commodity similar to food and clothing. Besides, media has a strong social and cultural impact on society. It is obvious that mass media are chosen widely to convey messages to build public opinion and awareness. In other words, the mass media is regarded as powerful sources of information because they can penetrate every segment of society.

The media used for the investigation of environmental awareness are newspaper, radio, internet and television programs which are widely and frequently used in modern media. According to The Global Health Observatory Data (2018), over 2600 global media channels operate with the support of about 3000 satellites, reaching nearly 1.5 billion people across the globe. It can be argued that the majority of global citizens learn about environmental issues, beyond their immediate surroundings, through global media as a result media has a critical role to play in helping to stop and change the future expansion of environmental challenges and to maintain the present efforts in the community. Some of other sources include newspapers, books, magazines, radio, the Internet, etc. This clearly established that people rely on recorded sources of information as well as on mass media like television and radio for getting information. These awareness sources are an important part of the environmental issues. Information from these sources is transformed into knowledge, in the knowledge of environmental issues and it is used as an input factor in the knowledge-based mitigation.

In their investigation on common sources of environmental noise Ayodeji and Olumuyiwa (2016) found that the common sources of environmental noise include peoples' conversation, generator, and traffic congestion. They further identified other sources of community noise to include automobiles, construction work, loudspeakers, recreational activities and fireworks.

Environmental noise impact on health also has negative effect on sustainable environment. Reporting on the health impact of environmental noise, Fox (2011) conclude that social media has also seen a great deal of usage by those seeking health information, with 59% of adult Americans (80% of internet users) reporting that they have accessed this type of

information online. According to the World Bank Group (WBG, 2005), radio, television, and newspaper are considered the major media outlets in developing countries.

In the study by Enobakhere, Orem, and Onah (2013) revealed that as a result of media campaigns attitudes of respondents concerning environmental issues, respondents has changed positively towards the environment and most respondents prefer listening to environmental campaigns on radio stations rather than any other means of information.

Also related is the study of Agnes, Omoogun, and Effiom (2019) revealed that dissemination of environmental information may be adequate with the use of television and mass media.

In the study conducted to assess the influence of media awareness campaigns and of environmental noise among different groups, Murphy and King (2014) said awareness is a crucial aspect of noise abatement. The reason is that public awareness of noise as an environmental problem is fundamental for public acceptance, political will, and successive implementation of the majority of other measures. Awareness is considered the first step in each participatory approach to the management of problems like noise control in public and private places.

The magnitude and consequences of the environmental noise problem in today's society becomes obvious. Environmental noise has become an increasingly widespread and serious source of discomfort and danger. Pam and Garba (2019) pointed out that the quest for economic growth and prosperity has increased the sources of environmental noise.

Sustainable development denotes an attempt by nation to control and reverse the negative consequences of exploration and exploitation of natural resources, in order to preserve the environment for future use. The concept of sustainable development involves the successful integration of environmental considerations into development management (Marconick, 1990). More so, it involves solutions for improving human welfare that does not result in degrading the environment or impinging in well-being of other people (McNicoll, 2007).

An often-cited definition of sustainable development is the 'ability to make development sustainable-to ensure that it meets the needs of the present without compromising the ability of future generations to meet their own needs' is from the Brundtland Commission (UNWCED, 1987). In the late 1970s and early 1980s, a number of independent scientists, activists, and policymakers were working on responses to the linked problems concerning issues of environment and development. Finally, in 1987, the United Nations' World Commission on Environment and Development released its report *Our Common Future*, which brought the terms 'sustainability' and 'sustainable development' into widespread use.

The research carried out by Evelyn and Tyav (2012) stated that the protection of the environment and man's wellbeing plays a key role in a nation's developmental process on the effects of environmental pollution in Nigeria, including environmental noise. The authors advanced that environmental problems ensued from man's interaction with the environment through involving in industrial and agricultural activities. They identified sources of environmental noise to include noise from, construction industries, religious houses; portable power supply-generating sets transportation and recording studios. The authors concluded that these activities affect human health as a result of environmental degradation which in turn hampers the socioeconomic development of a nation. They recommended that people must change their attitude towards environmental issues through awareness creation. In the study by Orie (2019) that examined the use of instruments of law to effectively control environmental noise in order for Nigeria to attain sustainable development. The author

discovered that exposure of residents to loud noise, affects their health and quality of life and which may thwart them from contributing their quota to sustainable development. The author also established that Nigeria has specific legislation for regulating environmental noise that these laws have major defects and inadequately implemented. The author concluded that effective enforcement of environmental laws is the key solution to regulating environmental noise which will enable Nigerians enjoy better standards of living and successively, attain sustainable development.

The challenge for the environmental noise control community should be to effectively redeem the issue of environmental noise control as not only for quality of life, health or annoyance issue, but at the same time for sustainable development, but this was not the case as advanced by Kihlma (2005) that the noise control community knows what must be achieved for sustainable development, but there appears to be little political will to change the norm. The gap between actual noise levels and the goals for sustainable development is very wide, but often political goals differ too much from what need to be done.

Considering environmental noise in initial planning, Kihlman (2005) said the effects of noise need to be better integrated into concepts related to sustainable development. King and Murphy (2016) opine that a failure to include noise as a consideration in sustainable development may jeopardize the likelihood of overall success. Kopina (2017) argues that to achieve sustainability, business, public and government stakeholders need to better understand the mechanisms underlying unsustainable practices. This was established in the study of Dublin airport by Kings (2019) that in Dublin airport's noise issues were not adequately considered in the initial planning stage, and severe restrictions were place on its operation by the Irish planning authority.

It clearly signified that at all stages in development environmental noise must be considered as failure to accurately assess noise impacts will lead to a major underutilization of resources, or force expensive for the solutions, even restrict the development of more sustainable practices, serving as a barrier to sustainability. Mensah and Casadevall (2019) note that despite the increase in awareness and the rapidly accumulating evidence pointing to adverse health impact, in discussions regarding the environment and sustainable development, the issue of noise is often neglected.

Methodology

This section defines the population of study and sampling technique used. It also explained the methods used in data collection, and analytical technique employed.

Population of study and sampling technique

Lagos State was selected for this study because it is the most urbanized state in Nigeria and also former Federal Capital territory of Nigeria. There are twenty local governments' areas in the state in which the study addresses four of them. The four clusters local government includes Ikeja and Agege referred to as urban and Epe and Badagry as rural were selected using simple random sampling. The choice of clusters technique as based of the fact that the elements of the population under study are geographically scattered. The selected four areas were based on the characteristics that differentiate urban and rural areas.

Study Population

The general population included small business owner whose operation are generating environmental noise above 18 years. Purposive sampling was used to identify the 10 persons included in the interviews. This is where cases were purposely identified because they hold

the desired information for this research work. A total of 400 resident respondents were sampled.

Surveys

A semi-structured interview administered and self-report questionnaire for this study consisted of three parts which help to generate information on variables such as demographic, media awareness, awareness on the sources of environmental noise. The questionnaire was constructed in five Likert scales and ranking for the items in the following manner- “Always =5”, “Usually =4”, “Neutral= 3”, “Occasionally= 2”, “Never= 1”.

Data analysis

Respondents of residents to questionnaire from different study areas were coded into the Statistical Package for Social Science (SPSS) version 23. Data were analyzed using descriptive statistics and independent t-test.

Results

Demographic characteristics

A total of 400 respondents participated in the survey. Of this figure, 44.75% were male, 55.25% female, majority of the respondents (44.3%) spent around five to nine years in the area they reside; 27.5% of respondents have spent around one to four years in the area, 18.3% respondents stated that they have been residing at the area for ten to fourteen years, the remaining 10% respondents stated they have been residing at their house for over fifteen years, age distribution of respondents; 16% fall within the age bracket of 18-24, 53% were within the age of 25-44, 27.5% respondents within the age of 45-64 while the least 3.5% of respondents fell with 65 years and above. In terms of marital status, 32% were single, 61.5% were married and 6.6% were divorced. This demonstrates that most of the residents that partook in the study were married with family responsibilities and many were also single. Most of the respondents were very literate having one form of educational qualification or the other. The distribution of occupational status shows that 11% were public servants, 28% were civil servants, 40% were self-employed and 21% were in the private sector. It means that bulks of the residents in the areas are an economically active population who are more mobile than the elderly.

The study used thematic analysis as a supportive method, which focuses on analyzing interview answers. A total of 10 participants were interviewed for the study. Five of the participants were females, while five were males. This was done purposely to keep the sex balance, with their age range from 18 to 50years. They were all literate. Participants interviewed, were those whose businesses were observed to pollute the environment with noise. Among the list of businesses in which they were engaged were discotheques, welding shops, block makers, Grain milling, saw millers, and people close to places of worship. All the persons interviewed indicated economic survival in terms of earning a livelihood as the major reason for setting the kind of businesses they were engaged in.

Result: Sources of Environmental Noise

Table 1

S/N	Items	Always	Usually	Neutral	Occasionally	Never	Total n=400
1	Religion broadcast constitutes environmental noise.	134	127	64	55	20	n=400
2	Low flight altitudes constitute environmental noise.	102	88	74	92	44	n=400
3	Social activities constitute environmental noise.	110	125	46	97	22	n=400
4	Artisan activities constitute environmental noise.	155	119	49	45	32	n=400
5	Railway activity constitutes environmental noise.	103	72	88	55	82	n=400
6	Record sellers' advertising constitutes environmental noise.	157	109	50	62	22	n=400
							n=400

Result: Dominant Information Sources on Environmental Noise

Table 2

S/N	Items	Always	Sometimes	Neutral	Rarely	Never	Total
1	I watch environmental noise issues on TV.	104	183	37	51	25	n=400
2	I listen to programs on environmental noise on radio.	80	188	64	46	22	n=400
3	I read about environmental noise issues in newspaper.	79	188	59	42	32	n=400
4	I access social media for environmental noise information.	81	156	67	61	35	n=400
5	Listen to government communication awareness on environmental noise.	70	171	67	64	28	n=400
6	I have heard about environmental noise.	227	114	18	34	7	n=400
							n=400

Test of Hypotheses

Independent t-test was statistical tests used in the research for the hypothesis.

Ho1. There will be no statistically significant difference in the level of knowledge on sources of environmental noise between residents in rural and urban settlements in Lagos State.

Ho2. There is no statistically significant difference in exposure to awareness campaigns on environmental noise between rural and urban residents in Lagos State.

Result of Hypothesis Testing

H₀: There will be no statistically significant difference in the level of knowledge on sources of environmental noise between residents in rural and urban area in Lagos State.

**Table 3-: Result of the Independent Sample t-test for hypothesis 1
Sample Size: 400 Respondents**

Group Statistics:	
Mean responses for Urban	2.275
Mean responses for Rural	2.408
Mean Difference	-0.133
Standard Deviation – Urban	0.733
Standard Deviation – Rural	0.749
Leven's Test for Equality of Variances:	
F	0.573
p-value	0.450

Independent t-test – Equal Variances Assumed (student t-test):	
t-statistic	-1.718
p-value	0.087
95% confidence interval of the mean difference	Lower: -0.285 Upper: 0.019
Independent t-test – Equal Variances Not Assumed (Welch's t-test):	
t-statistic	-1.707
p-value	0.089
95% confidence interval of the mean difference	Lower: -0.285 Upper: 0.020
Effect Size (Eta Squared):	0.007

Table 3 presents the result of the independent-sample t-test for hypothesis one. The Leven's test for the equality (homogeneity) of variance ($F = 0.573$, $p\text{-value} = 0.450 > 0.05$). Evidently, the box plot (figure 1) shows the degree of the variability in the level of knowledge on sources of environmental noise in rural and urban settlements.

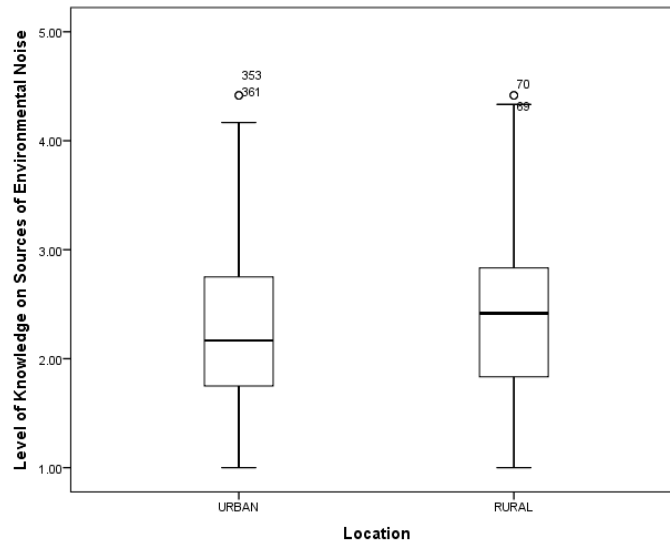


Figure1: Box plot for level of knowledge on sources of environmental noise

As shown in figure1, there is almost equal variability in urban and rural settlement regarding the level of knowledge on sources of environmental noise. Student's t -test is considered suitable for the test of this hypothesis. The student's t -test or equal variance test ($t(398) = -1.718$, $p\text{-value} = 0.087 > 0.05$) implies that there is no statistically significant difference in the level of knowledge on sources of environmental noise between rural ($Mean = 2.408$, $SD = 0.749$) and urban ($Mean = 2.275$, $SD = 0.733$) settlements in Lagos State. The null hypothesis that "there will be no statistically significant difference in the level of knowledge on sources of environmental noise between residents in rural and urban area in Lagos State" cannot be rejected. This implies that there is no statistically significant difference in the level of knowledge on sources of environmental noise between the rural and urban residents in Lagos State. It means that both rural and urban areas are familiar with various sources of environmental noise.

This means that the level of knowledge on sources of environmental noise between the rural and urban residents in Lagos State is not statistically significant within the study area.

It indicates that sustainable development could be achieved when the people are aware of the sources of environmental noise with the human impact which will change their behavior.

Interview response:

To analyze qualitative data, the researcher coded the respondent's feedback and selected those responses that were in line with the questions. Responses from participants were presented in the form of narrations accompanying survey respondents' views.

On participants' level of Knowledge on sources of environmental noise:

A Welder in Epe town said: "I agreed that my activities contributed to environmental noise in the community". (Residents/ Epe/ 3/1/2021).

Another respondent block maker in Agege said: "I know what noise is and the machine I am using in producing block generate environmental noise, but I don't have any other work". (Male/Residents/Agege/27/01/2021).

Confirming the sources of environmental noise in Lagos metropolis a female respondent in Ikeja, said: "Here, we experience much environmental noise from motorists, motorcyclists, and the use of power generators". (Female/Residents/Ikeja/27/01/2021).

Another female participant also agreed that: "The use of a generator and relaxation center like a clubhouse is generating more environmental noise". (Female/Residents/Allen/27/01/2021).

People living around the religious houses shared different opinions in their response to noise coming out from the religious house.

A male resident at Ilogbo Eremi Said: "I cannot regard religious broadcast from either Church or Mosque as environmental noise, it was just to remind us about the call to prayer" (Male/Residents/Ilogbo Eremi/28/01/2021).

But to another resident: "The noise from this religious house is too much and the government should stop or lock religious houses that continue to create environmental noise". (Male/Residents/Ilogbo Eremi /28/01/2021).

A resident was of the opinion that: "Major sources of environmental noise in their areas have to do with the activities of mobile advertisers selling records and local medicine". (Male/Residents/Ikeja/27/01/2021).

A participant said that:

"All I know about the environment noise in my surrounding, since we have been living here, noise always come from the big generators operated by various industries closing to this community. We have been used to the noise. How can I tell you that my areas are not noisy or I am not aware of the sources"? (Male/Residents/Ogba/27/01/2021).

A respondent said that: "This area is too close to the airport, and once the aero planes are landing or taking off, the noise coming from the engine is devastating". (Male/Residents/Ikeja/27/01/2021).

Another participant has this to say:

“Most of the time especially in the middle of night, the noise from railway locomotive engine always wake us. You know this area is close to railway station. There is nothing we can do than to learn to cope with the situation”. (Male/Residents/Agege/27/01/2021).

Test of Hypothesis 2

H₀: There is nostatistically significant difference on exposure to media awareness campaigns on environmental noise between rural and urban residents in Lagos State.

**Table4-: Result of the Independent Sample t-test for Hypothesis 2
Sample Size: 400 Respondents**

Group Statistics:	
Mean responses for Urban	2.455
Mean responses for Rural	2.260
Mean Difference	0.195
Standard Deviation – Urban	0.769
Standard Deviation – Rural	0.575
Leven’s Test for Equality of Variances:	
F	20.342
<i>p</i> -value	0.000
Independent t-test – Equal Variances Assumed (student t-test):	
t-statistic	2.627
<i>p</i> -value	0.009
95% confidence interval of the mean difference	Lower: 0.049
	Upper: 0.341
Independent t-test – Equal Variances not Assumed (Welch’s t-test):	
t-statistic	2.861
<i>p</i> -value	0.004
95% confidence interval of the mean difference	Lower: 0.061
	Upper: 0.329
Effect Size (Eta Squared):	0.020

Table 4-: presents the result of the independent-sample t-test. The Leven’s test for the equality (homogeneity) of variance ($F = 20.342$, $p\text{-value} = 0.000 < 0.05$). More obviously,

the box plot (figure 2) shows the presence and extent of the variability in the awareness campaigns on environmental noise in the rural and urban locations.

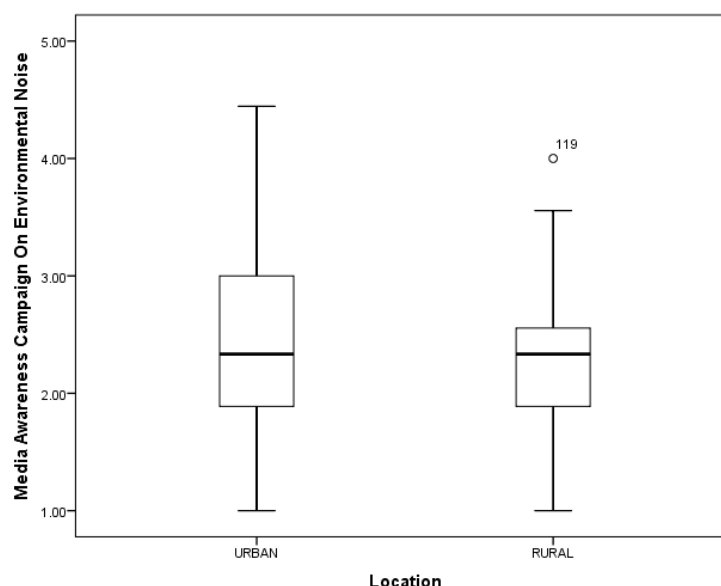


Figure 2: Box plot for media awareness campaigns on environmental noise.

As shown in figure 2 Welch's *t*-test is considered appropriate for the test of this hypothesis. The Welch's *t*-test or unequal variance test ($t = 2.861$, $p\text{-value} = 0.004 < 0.05$) reveals that there is statistically significant difference in the exposure to media awareness campaigns on environmental noise between rural ($Mean = 2.260$, $SD = 0.575$) and urban ($Mean = 2.455$, $SD = 0.796$) residents in Lagos State. There is a statistically significant difference between rural and urban residents, because the $p\text{-value}$ (0.004) is lower than 0.05. The hypothesis that "there is no statistically significant difference on exposure to media awareness campaigns is rejected. This implies that urban residents have higher exposure to media awareness campaigns than their rural counterparts. The result showed that while exposure to media awareness is similar in both rural and urban locations in some instances, there are some noticeable significant differences. These similarities can best be explained as components that are readily available as means of media exposures in both rural and urban regions. The contrasting views indicated the obvious differences in media awareness of the two locations. These differences include access to environmental noise issues in newspapers, government communications and media content which are elusive in the rural locations when compared to the urban areas.

Participant response to interview on exposure to campaign on environmental noise said:

A participant said:

"The media especially radio and television agency is not airing enough programs on environmental noise. Environmental noise is occurring in rural areas where people have radio sets to listen. For a long time, I have been working in Ibereko as a Welder in the Badagry area of Lagos State, and I listen to the radio, only very few programs are dedicated to environmental noise". (Residents/ Ibereko, 29/1/2021).

Confirming the forms of an awareness campaigns in Lagos metropolis, a resident in the Dopemu area said: "I listen to radio and television, but the media are not given enough awareness campaigns on environmental noise, which is not good". (Male/Residents Dopemu, 12/1/2021).

A female respondent Said:

"I feel that we are now aware that we are the ones who caused the problems we have faced by destroying the environment through our daily activities that generate environmental noise. Through the media awareness campaigns, we can also get the solution".

(Female/Residents/Ikeja/12/1/2021).

Forty-five-year-old Woman lamentably expresses that:

"Little attention is given to environmental awareness campaigns by the media. I listen to the radio and watch television regularly to view programs been aired. The awareness was not enough that can change people's perception of noise".
(Female/Residents/Ogba/12/1/2021).

A hotelier in his view concludes that:

"The newspaper does not have a single environmental program dedicated to environmental noise. In print media pages are dedicated to football activities on a daily basis, but the same cannot be said of environmental noise. I watch television to view the program on environmental noise regularly".
(Hotelier/Badagry/29/01/2021).

A male respondent from Epe Said: "It is vital for the media houses to air media programs about environmental noise regularly". (Residents/Epe/3/01/2021).

A participant from Ikeja Said:

"More people are now familiar with various media sets in their homes, schools, pubs, hotels and offices especially in urban and rural areas and also listen to news online. All these media should be compelled to do more program on environmental issues to create awareness." (Male/Residents/Agege/3/01/2021).

A female participant opined that:

"Media houses have tried to inform the public on environmental issues but have allocated less time to it. At times they do not inform people about health effects, you only hear about the noise during a serious disaster." (Residents/Agege/3/01/2021).

Another participant said:

"Media is a good way to raise awareness but journalists sometimes fail to show up at events where money will not exchange hand and since there is no body to pay them for covering environmental noise issues they may likely not ready to show interest in reporting."
(Female/Residents/Dopemu/3/01/2021).

One participant noted that:

“Yes, more people will be informed on environmental issues through the media, importance of reducing noise in our community instead of waiting for the government to do something for them.” (Male/Residents/Dopemu/29/01/2021).

Discussions

Dominant Sources of Environmental Noise Identified by Residents.

The analysis of hypothesis showed that there is a significant variation in their level of knowledge on sources of environmental noise within the study area. The environmental noise created by neighbours, religious broadcast/social activities and operations of low altitude flights, industrial and railway activities are dominant environmental noise sources identified by both rural and urban residents, which is similar to both, why areas of differences include artisan activities, indiscriminate use of vehicular horns, and other automobile activities of the urban region that constitute environmental noise in the urban locations. By implication, it means that there are similarity and dissimilarity sources of environmental noise identified and its related issues. This clearly showed that sustainable development could be achieved when the people are aware of the sources of environmental noise and the impacts which will change their awareness behavior. Lack of awareness on sources of environmental noise can prevent people from knowing that what they are doing is directly or indirectly contributing to environmental noise in their environment, in line with study of Atkinson (2014) that notes, with noise people are just doing what they do, they may not realize that “their personal freedoms may generate inwardly hating, stressed and sleepless lives in those around them.

The outcome of this study is in consonance with the results of Eludoyin (2016) that there are two major settings where noise occurs- the community noise and industrial. Similarly, Firadus and Ahmed (2018) study also identified noise from the neighbour house, street hawkers, and household as various activities that are sources of environmental noise. The finding of Awosusi et al. (2014) also identified common sources of environmental noise to include people’s conversation, generator and relaxation centers like clubhouse is similar to the finding of Ayodeji and Olumuyiwa (2016) that confirmed common sources of environmental noise to include people conversation, generator, and traffic congestion. The religious houses source of environmental noise to the respondents, it contributes more as a source of environmental noise, which is in line with the finding of Ononugbo, Avwiri (2019) that environmental noise levels recorded in both churches and mosques are higher than acceptable levels of 75 dB creating unhealthy, unsafe for the worshipper.

But there is a difference between the rural and urban residents in other sources like artisans, record sellers, vehicle horns, and automobiles; this is justified considering the number of record seller’s activities, traffic situation in urban areas compared to rural areas. According to Aditya and Chowdary (2020), heavy vehicles and their contribution towards noise levels are proven to be effective with the forthright fact that heavy vehicles and their corresponding honking were majorly affecting the equivalent noise level compared to other vehicular proportions.

Dominant Information Sources on Exposure to Awareness Campaigns on Environmental Noise.

The fact that the urban and rural residents are not exposing to the same sources of information on environmental awareness campaigns can be attributed to the reason that they do not have access to similar information and the state government have not done enough to sensitize the public on environmental noise issues which eventually will influence their behavior toward sustainable development. Hence greater efforts will be required to increase

the resident awareness campaigns of environmental noise. The actual challenge is to supply information to the residents to recognize since information is crucial component in raising awareness campaigns, presenting understanding and stimulating positive action toward sustainable development. Results of hypothesis two indicated that urban and rural residents showed significant variation in their sources on exposure to awareness campaigns on environmental noise. Awareness, thereby highlighting that information sources on exposure to awareness campaigns was an important factor affecting environmental noise awareness campaigns among the urban and rural that is vital for sustainable development. Urban residents showed more exposure to environmental noise awareness campaigns than their rural counterparts. A possible reason for the differences between urban and rural residents hinge on the fact that both groups are in actual fact exposed to sources of information on environmental noise differently. It means that their perception on awareness campaigns on environmental noise in thinking about sustainable development will differ. Urban residents listen more to electronic media, and buy newspapers more frequently which probably gives them wider access, knowledge and information on various environmental noise issues in different parts of the world. Urban residents readily have access to internet facilities which further boost their knowledge on environmental noise issues, whereas the rural residents' counterparts are not exposed to such information. Epileptic electricity supply could be regarded as a major factor accountable for insignificant access to electronic media by rural residents in the study area. The finding supports the outcome of study by Ostman (2010) that television, radio, social media, newspapers, and regular information from the stakeholders or citizens are the dominant information source that is available to the Lagos residents on environmental noise. The finding supports Snyder and Hamilton (2002) that campaigns utilizing radio, video, and television were found to have greater effects than those utilizing print media. The findings also align with Kapoor (2011) that 40% of the respondents in urban areas preferred television programs while 26% of rural residents showed their interest in radio programs. Also, Roba (2014) showed that many respondents tended to listen to the radio in rural area. European Technical Report (2003) reported that the most important sources of information on environmental matters are television followed by newspapers, radio, and discussions with other citizens or stakeholders. The findings of Agnes, Omoogun, and Effiom (2019) revealed the disseminating of environmental information might be adequate with the use of television.

This infers that in propagating environmental awareness campaigns by the government, the most appropriate media that would be most effective, educative, and understood, that will benefit both the residents of rural and urban areas is electronic media, as indicated in this finding.

The contrasting views indicated the obvious differences in media awareness of the two locations. The differences include access to environmental noise issues in newspapers, government communications, and media content which are elusive in the rural locations when compared to the urban regions.

The present study showed that the residents in rural and urban view on environmental noise and using media awareness campaign to achieve sustainable development can only be achieved through the use of appropriate media. While the residents in urban areas are more exposed to various media more significantly electronic media, this is not the same with the residents in the rural areas that have limited media exposure. The current evidence suggests that these beliefs can meaningfully contribute to understanding of the levels of knowledge on environmental noise sources and awareness campaigns sources through various media,

bringing insights concerning the gap in the rural and urban population between their informed view on environmental noise causes and their lack of awareness campaigns that will change their environmental action toward sustainability. The study highlights the wide ranging impacts of sources of information on environmental noise and dominant sources of environmental noise and postulates that the management and control of environmental noise are essential in the pursuit of the sustainable development, as a result environmental noise control cannot be forgotten aspect of sustainability.

Conclusion

Globally environmental noise constitutes serious public health that requires creating effective awareness campaigns in promoting sustainable development. This study has examined the awareness campaigns of environmental noise on the perception of rural and urban areas and the implication for sustainable development. While pointing out the level of knowledge on sources of environmental noise between rural and urban settlements in Lagos State, is statistically not significant, the paper went further to examine the exposure to media awareness campaigns on environmental noise towards changing their behaviour to environmental noise to help attain sustainable development. Arising from the findings of this study, the conclusion drawn is that there are great variations on their level of knowledge on information sources of environmental noise and exposure to media awareness campaigns. Environmental noise is a new reality that will have damaging effects on the society. It is an incident that will affect every facet of our lives, our life style, economy and natural areas. Bearing this in mind, awareness campaigns creation is an important measure in addressing environmental noise issues.

It is by improving our understanding of the measure and the nature of the environmental noise problem, and its impact on sustainability, that policies can be formulated and implemented to support the mitigation of environmental noise where it is vital and protect those areas of good sound quality.

The finding of the study indicates, that environmental noise has a relationship with all the sustainable development, it further demonstrates that noise control is fundamental to sustainable development; it is clear that failure to address environmental noise in a serious and concerted way would present a significant challenge to the realization of the sustainable development and will eventually act as a negative restriction on achieving sustainable progress.

This can be achieved by the agency responsible for protecting the environment. Lagos State Environmental Protection Agency (LASEPA) should be more aggressive in awareness campaigns in sensitizing the public about environmental noise for sustainability.

Recommendations

In collaboration with other agencies, the Lagos State government should organize regular seminars and workshops to enlighten the residents on the hazards of environmental noise with the most effective media, and develop proper awareness campaigns strategies as revealed by the study. Since awareness campaigns programs reach people through radio, television, and newspapers about environmental noise. The media should not confine their reporting on issue of environmental hazards, but should play the agenda function by emphasizing the effects of environmental noise especially on sustainable development. Public discussions on environmental noise sources should be done regularly to create and increase people's awareness. Understanding how different media can assist these organizations will

also facilitate policymakers to establish the corresponding policy to support the promotion of sustainable development.

The technology in place on awareness campaigns on environmental noise will achieved its objectives by adopting electronic media input across efforts to change behavior of people towards sustainable development.

Environmental noise should be included in health impact assessment of any proposed development program; this will go a long way in promoting sustainable development.

Finally, it is recommended that environmental noise should be appropriately implemented and address in terms of social harmony, regulation and quality of life as to achieve the necessary sustainable development.

Implications on achieving Sustainable Development

The variations of residents on level of knowledge on sources of environmental noise and exposure to media awareness campaigns, implications for sustainable development:

1. The Lagos State government should be actively involved in raising awareness campaigns on environmental noise issues that will lead to sustainable development. Awareness of environmental quality will help to combat and educate the population on the need for good quality of the environment.
2. There is little pressure on the part of state governments from citizen's groups for action to be taken on environmental noise. This is due to a lack of understanding of the impacts of environmental noise on sustainable development. There is a need for integration of the public into the decision process, which will bring back a feeling of ownership that will manifest itself in improved acceptance of the benefits of environmental noise awareness campaigns, also more extensively in sustainable development.
3. A step-by-step program of implementation of environmental noise policies by the government is probably the realistic way forward. This must be critically done in the context of a clear, strategic approach. Government existing policies, programs and actions should be made available to all the residents. To achieve effectiveness of this, both electronic and print media, also circulating various published materials should be on continuous basis.
4. Government officials can make significant contributions to improve public awareness campaigns of environmental noise issues and impact on sustainable development by making it a priority issue when addressing in public. Since lack of effective public participation negatively impacted on the perception of the obstacles for effectiveness of awareness campaigns of environmental noise which eventually resulted in their ability to take action to achieve sustainable development.

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