



COMMERCIAL OPEN AIR COOKING AND GLOBAL WARMING: PERCEPTION OF LOCAL EATERY OPERATORS IN AWKA

***MOZIE, CHISOM EJIOFOR, *NWOSU, CHIBUIKE
JULIUS **ADAKU, CHINWE ANYAMENE
*UZOAGBA, OGOCHUKWU NNEKA**

**Department of Mass Communication, Nnamdi
Azikiwe University Awka **Department of Mass
Communication, Federal Polytechnic Oke*

Abstract

*This research work
titled "Commercial
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the backdrop of the*

Keywords:

*Climate Change,
Exposure, Global
Warming, Knowledge
and Mitigating
Behaviour*

*vital role of climate
change in human*

INTRODUCTION

This research work is on "Commercial Open Air Cooking and Global Warming: Perception of Local Eatery Operators in Awka". It came against the backdrop of the vital role of climate change in human development and survival (Atilola, 2010; Knutson, 2011). This import of climate change to human destiny has expectedly placed the subject in the front burner of global social, economic and political discourse (Aladag & Ugurlu, 2009). Nigeria has not been an exception in this global concern as the country is also obliged to enlighten and mobilise her citizens towards behaviours that will reduce concentration

development and nature of the variables warming; the eatery survival. This import of under investigation operators have low climate change to and anchored on the knowledge of factors human destiny has Knowledge, Attitude that contribute to expectedly placed the and Practices model .A global warming and subject in the front total of 387 that they have failed to burner of global social, respondents were take steps towards economic and political drawn from behaviour that discourse. Nigeria has commercial open air mitigates global not been an exception chefs around Awka warming in line with in this global concern Urban through a suggestion made by as the country is also simple random global and local obliged to enlighten procedure while the agencies. It was and mobilize her instrument of data recommended that citizens towards collection was a Global warming behaviours that will questionnaire campaign should be reduce concentration containing sets of intensified targeting of greenhouse gases in questions which specifically the atmosphere. One of addressed the commercial eatery the areas of concern in measurable variables. operators with the this respect is carbon From the quantitative view to improving emission from open air data gathered and their knowledge and cooking which is a analyzed, it was found awareness of the common practice in that local eatery implication of their the country. The study operators in Awka activities to global was designed as a have low exposure to warming. survey due to the the issues of global

of greenhouse gases in the atmosphere. One of the areas of concern in this respect is carbon emission from open air cooking which is a common practice in the country.

Currently, there is widespread consensus in the scientific community and even among politicians that climate change is happening and that the impacts are already with us. Climate change is often used to describe any kind of change in climate that may be natural or human- induced (Union of

Concerned Scientist UCS, 2002; Olaniyi, Funmilayo & Olutimehin, 2014). Climate change, according to Ekpoh (2009), is any long-term change in the patterns of average weather of a specific region or the earth as a whole. The United States Environmental Protection Agency (USEPA, 2014) states that Climate change refers to any significant change in the measures of climate lasting for an extended period of time. In other words, climate change includes major changes in temperature, precipitation, or wind patterns, among other effects, that occur over several decades or longer. It involves an abnormal variation in the earth's climate that usually occurs over durations ranging from decades to millions of years. Evidence shows that global mean temperature increased by 0.60C during the 20th century, with the 6 hottest years occurring between 1997 and 2007 (IPCC, 2007). This warming of the world's climate has been linked to higher concentrations of carbon dioxide and other greenhouse gases (GHGs) in the atmosphere, which are dominantly of anthropogenic origin such as fossil fuel combustion, land use and deforestation. By anthropogenic origin is meant that these gases are products of human as against natural activities (Odey, 2009).

Climate change is an environmental, social and economic challenge on a global scale (Mendelsohn and Williams, 2006). It spells grave harmful consequences for the earth in the form of significant variations in regional climates, recurrent droughts, excessive heat waves, windstorms, killer floods, and so on. Knutson (2011) notes that the challenges posed by climate change crises constitute major threat to sustainable development. The concern of sustainable development relates to the need to face and save the future in order to keep and safeguard the interests of coming generations. Aliyu (2009) is of the opinion that climate change would constrain the ability of developing countries to attain their poverty reduction and sustainable development objectives under the United Nations Millennium Development Goals (MDGs). There is a dual relationship between sustainable development and climate change. Climate change influences key natural and human living conditions and thereby also the basis for social and economic development while on the other hand society's priorities on sustainable development influence both the greenhouse gases (GHG) emissions that are causing climate change and

vulnerability. The four most important greenhouse gases are carbon dioxide, methane, nitrous oxide and fluorinated gases. Human activities are responsible for almost all of the increase in greenhouse gases in the atmosphere over the last one hundred and fifty (150) years (IPCC, 2007). The largest source of gas emission is from burning fossil fuels for electricity, heat and transportation (USEPA, 2014).

There are noticeable consequences of climate change in Nigeria such as intense thunderstorms, widespread floods and incessant droughts. Odey (2009) has pointed out that the impacts of climate change pose great dangers with consequences such as desertification, sea level rise, flooding, and water salination, among others. These impacts could further result in food security challenges, damage to infrastructure and social dislocation. Additional impacts include threat to health as rising temperature could bring about diseases such as chronic heat rashes, Cerebra-Spinal Meningitis (CSM), stroke, malaria and other related diseases (USEPA, 2014).

Admittedly, the overall effect of climate change touches at the very root of human survival and destiny. Ekpoh (2009) summarises the picture when he observes that climate change will affect every citizen, every part of our environment and our natural resources, and thus practically every aspect of our lives, our economy, our urban and sub-urban development patterns. Global concern regarding the devastating impact of climate change has emphasized the need for creating awareness and building community capacity for adaptation strategies to mitigate the effects of climate change. As pointed out by Naclimuthu and Vijayakumari (2013), the need of the hour is to make people sensitive towards nature through a strong programme of climate change awareness. This is imperative in the sense that, there are some misconception and misunderstanding of climate change issues.

In Nigeria, one of the feared causes of climate change is carbon emission from open air cooking which is a common phenomenon among people of the country both in rural and urban areas. In rural areas, use of firewood is a domestic common practice whereas in urban areas it is more commonly found among local commercial eateries (Olaniyi *et al.* 2014; Stanley, Dadu, Joshua & Uchenna, 2013). Open air cooking, unlike the modern cookers

that use electricity, gas or kerosene, causes emission of carbon dioxide (CO₂), the leading greenhouse gas.

Given the ubiquity of local eateries in an average Nigerian town (Stanley *et al.*, 2013), it became important to study the perception of the operators in relation to the climate change implication of their activities. Awka, the capital city of Anambra State, and by implication one of the most important towns in the country, became the particular focus of the research.

Statement of the Research Problem

Open air cooking is a major source of carbon dioxide (CO₂) which is the leading known greenhouse gas (GHG) that leads to global warming (Aladag & Ugurlu, 2009). Given that open air cooking is a common practice amongst local eateries which are ubiquitous in Nigerian towns and even rural areas (Stanley *et al.*, 2013), how exposed is the country to carbon emission as a result of this practice?

The widespread practice of open air cooking in the country is notwithstanding the campaigns that have been ongoing against activities that lead to GHG emission and environmental pollution. Would this imply that the eatery operators are still ignorant or that there are other factors that have worked against compliance? How effective has the climate change campaign been? These problems necessitated this study

Research Questions

1. How exposed are local eateries operators in Awka to issues of global warming?
2. How knowledgeable are these operators about causes of global warming?
3. How apprehensive are these local operators in line with evidential implication of global warming?
4. How much have the local eateries operators taken steps towards behaviour that mitigates global warming in line with suggestion made by global and local agencies?

Significance of the Study

This study promised to be useful to the campaign against climate change. The data to be generated regarding the knowledge, perception and attitude of local eatery operators would help local and international agencies

involved with this campaign in gauging the level of effectiveness of their efforts. This would in turn aid them in re-strategising for improved performance.

Similarly, the study might serve as some form of enlightenment for eatery operators and others who may be involved in one climate change-related activity or the other. By bringing to the fore the state of things regarding climate change communication and compliance, the study might increase awareness among these and other stakeholders.

Literature Review and Conceptual Clarifications

Climate Change: An Overview

Climate change, according to Olaniyi *et al.* (2014), refers to an increase in average global temperatures. Natural events and human activities are believed to be contributing to this increase in temperatures. This is caused primarily by increases in greenhouse gases such as Carbon Dioxide (CO₂). The scientific community has reached a consensus that global warming is real and that human activities are causing the warming trend. Global temperatures have steadily risen over the last century, and according to scientists, 2005 was the warmest year on record, and the warming trend is expected to continue through the 21st century and beyond (Dove, 2006; Boyes & Stanisstreet, 2012). According to Intergovernmental Panel on Climate Change (2001):

From various scientific researches, it has been estimated that average global temperature of the earth surface increased $0.74 \pm 0.18^{\circ}\text{C}$ ($1.33^{\circ}\text{F} \pm 0.32^{\circ}\text{F}$) during the 100 years ending in 2005. Scientific climate modeling projections... indicate that global surface temperature will likely rise a further 1.1oC to 6.4oC (2.0 to 11.5oF) during the 21st century (p.19).

The direct effect of global warming is climate change, which means the disruption of climate pattern, and consequent impact on the environment and human life. Climate is the average state of the weather; it is fairly stable and predictable (Mendelsohn, Dinar & Williams, 2006. Weather is the day to day state of the atmosphere; it is a chaotic non-linear dynamic system. In general climate means weather pattern that is, averages of variables like cold and hot, humid and dry, cloudy and clear, drizzles and downpour, breeze and blizzard, and other variables that can be measured at any given

site. Climate change refers to the change in the state of climate that can be identified by “changes in mean or variability of its properties and that persists for extended periods, typically decades or longer” (Mosothware, 2011).

Climate change occurs when the amount of energy stored by the “climate system” is varied. The variation occurs when the balance, for example between energy received from the sun and the radiated energy is disturbed. This disturbance can be caused by a number of natural mechanisms such as variation in the earth’s orbit, variation in ocean circulation, and changes in earth’s composition. In recent times the disturbance is caused by human activities (Nachimuthu & Vijayakumari, 2013).

The Intergovernmental Panel on Climate Change (IPCC) and major scientific organizations of industrialized countries have concluded that the increase in global temperature since the middle of twentieth century has been due mainly to human-induced (anthropogenic) greenhouse gases concentration via the green house effect; while the warming effect of natural phenomenon such as solar variation contributed a small warming effect from pre-industrial times to 1950, and from then a reverse cooling effect (IPCC, 2001; Knutson, 2011). The United Nations Framework on Climate Change (UNFCCC) uses the term “climate change” for human-induced change while the term “climate variability” is used for changes due to external forcing. External forcing is climate change caused by change in the global energy balance owing to fluctuations in the earth’s orbit, ocean circulation and atmospheric composition (Rye, Rubba & Wiesenmajer, 2007).

Climate Change in Nigeria

Nigeria like other nations of the world is vulnerable to the impact of climate change. Global warming is real and evidence abounds in the country. Although the country has been lucky not to have experienced major climate-change-induced natural disasters, the effect of climate change is evidenced by rise in sea level and erosion along the nation’s coastline; the weather pattern is no longer distinct in the country, witnessed very hot weather conditions have been witnessed and high precipitations have

occurred leading to flooding which ruined crops in parts of the country creating food scarcity, the latest being Jigawa State. Gully erosion has sacked many communities especially in Edo and Anambra States. As a result of persistent drought, the Lake Chad has almost dried up, while there had been persistent desert encroachment in the north (Odjugo, 2013). Aledare, Olayiwola and Olaseni (2014) observe as follows:

Nigeria is experiencing adverse climate conditions with negative impacts on the welfare of millions of people. Persistent droughts and flooding, off season rains and dry spells have sent growing seasons out of orbit, on a country dependent on a rain fed agriculture. Alarm bells are ringing with lakes drying up and a reduction in river flow in the arid and semi arid region. The result is fewer water supplies for use in agriculture, hydro power generation and other users. The main suspect for all this havoc is Climate Change. Scientific studies show snows are disappearing rapidly. Climate Change has been confirmed following release of the 4th IPCC Assessment report. Africa will be worst hit by the effects of Climate Change which Nigeria is part of it (p.104).

The damaging effect of climate change on agriculture is underscored by the fact that the sector contributes some percentage of the Nigerian Gross National Product and majority of the rural populace are employed in this sector. The dominant role of agriculture makes it obvious that even minor climate deteriorations can cause devastating socioeconomic consequences (Atilola, 2010; Odjugo, 2013). Odjugo (2013) laments:

We already have an increasing incidence of disease, declining agricultural productivity, and a rising number of heat waves. There is glaring evidence that climate change is not only happening but it's changing our lives. Declining rainfall in already desert-prone areas in northern Nigeria is causing increasing desertification, the former food basket in central Nigeria is now empty, and people in the coastal areas who used to depend on fishing have seen their livelihoods destroyed by the rising waters (p.1204).

Climate change is also affecting Nigeria's energy sector profoundly. Conflict over the use of water resources among different economic sector has adversely affected the hydropower plants in Kanji, Jebba and Shiroro which are the key to the security of electricity supply in the country and

represent about one-third of the country's total installed electricity generating capacity. These plants have produced significantly lower energy leading to epileptic power supply as a result of excessive drought affecting water volume and the capacity of the power plants to produce optimally (Ekpoh & Ekpoh, 2011; Ojomo, Elliott, Amjad & Bartram, 2015). Incessant power outage increases the cost of doing business and hampers the pace of industrialization in the country. Industries that are dependent on climate sensitive resources or conditions e.g. agro businesses, construction, infrastructure, transportation, pollution control are potentially vulnerable to changes in the climate (Ojomo *et al.*, 2015).

Environmental Campaign

Rogers and Storey (1987) observe that there is often confusion between the labels "campaign", "communication campaign or programme", "media or mass media campaign", and "intervention". However, no particular definition adequately covers current practice, and there are many local variations of what is meant by these labels. Indeed, a variety of definitions exists in the literature but the following elements of a communication campaign are essential (Rogers & Storey, 1987).

Nevertheless, in understanding campaign it is crucial to first recognize that a campaign is purposive. The specific outcomes can be extremely diverse ranging from individual level cognitive effects to societal or structural change. However, the bottom line is that such campaign was a deliberate measure aimed at specific goals (Rogers & Storey, 1987).

Secondly, a communication campaign is aimed at a large audience. Rogers and Storey (1987) note that "large" is used to distinguish campaigns from interpersonal persuasive communications by one individual (or a few people) aiming to seek to influence only a few others. So for a communication to be termed campaign it ought to transcend interpersonal and micro group communication to address a relatively large audience.

Thirdly, communication campaigns have a specified time limit. This is not to state that all campaigns are short lived. For example, the initial Stanford Climate Change Prevention Programme ran for three years, however follow-up investigations were conducted over decades (Bord, Fisher & O'Conner, 2007).

The fourth point is that a communication campaign comprises a designed set of organized activities. This is most evident in message design and distribution. Messages are organized in terms of both form and content, and responsibility is taken for selecting appropriate communication channels and media. As Rogers and Storey (1987) point out, even those campaigns whose nature or goal is emancipation or participation involve organised message production and distribution.

In summary, the term communication campaign implies that:

- it is planned to generate specific outcomes;
- in a relatively large number of individuals;
- within a specified time period; and
- uses an organised set of communication activities.

Against the foregoing, environmental campaign could be described as a form of communication campaign aimed enlightening and achieving behavioural change regarding matters related to preservation, improvement and sustenance of the physical environment (Bord *et al.*, 2007).

Based on the above noted general characteristics of communication campaign, an environmental campaign should be planned to generate specific outcomes. For instance, it might be targeted towards creating awareness on climate change or sanitation and possibly eliciting the desired attitude from the audience (Rogers & Storey, 1987; Hausbeck, Milbrath & Enright, 1999).

Similarly, an environmental campaign should be targeted to a relatively large number of persons. For instance, the target audience could be a community, a state, a region/province or a nation. Furthermore, environmental campaign could be undertaken on the transnational scale such as what is being done by international agencies such as the United Nations Habitat and other bodies (Hausbeck *et al.*, 1999).

An environmental campaign should occur within a specified time period. This characteristic stems from the fact that it is a planned endeavour and not just a spontaneous, haphazard activity. Hence, it has been planned to last from a particular time now to a particular in the future when the

expected outcomes would be assessed towards adjudging the campaign a success or otherwise (Halpern & Bates, 2004).

Lastly, an environmental campaign must employ an organised set of communication activities. In other words, it is a systematically planned communication programme typically involving research, content selection, delivery and evaluation (Rogers & Storey, 1987; Hausbeck, Milbrath & Enright, 1999; Hausbeck *et al.*, 1999; Halpern & Bates, 2004; Ojomo, Elliott, Amjad & Bartram, 2015).

2.4 Mass Media and Environmental Campaign

According to Witte (2000), the mass media “are intensively employed in environmental campaign” (p.111). Vast sums are spent annually for materials and salaries that have gone into the production and distribution of booklets, pamphlets, exhibits, newspaper articles, and radio and television programmes.” These media are employed at all levels of environmental campaign in the hope that three effects might occur: the learning of correct environmental information and knowledge, the changing of environmental attitudes and values and the establishment of new behaviour (Witte, 2000, p.113).

Mass media campaigns have long been a tool for promoting environmental preservation, improvement and sustenance (Noar, 2006) being widely used to expose high proportions of large populations to messages through routine uses of existing media, such as television, radio, and newspapers. Communication campaigns involving diverse environmental topics and target audiences have been conducted for decades (Wakefield, 2010).

Such campaigns are frequently competing with factors, such as powerful social norms, and behaviours driven by addiction or habit. Mass media campaigns have generally aimed primarily to change knowledge, awareness and attitudes, contributing to the goal of changing behaviour. However, there has not normally been a high expectation that such campaigns on their own would change people’s behaviour (Wakefield, 2010).

Witte (2000) argues that “Theory suggests that, as with other environmental protection efforts, mass media campaigns are most likely to reduce unhealthy attitudes if their messages are reinforced by other

efforts. Reinforcing factors may include law enforcement efforts, grassroots activities, and other media messages” (p. 593).

There is a vast literature relating to environmental campaigns. Much theoretical literature is devoted to the topic of effectiveness of communication strategies (Halpern & Bates, 2004). Mass media campaigns, Halpern & Bates (2004) argue, have usually been one element of broader environmental protection programmes with mutually reinforcing components:

- Mobilising and supporting local agencies and professionals who have direct access to individuals within the target population.
- Bringing together partnerships of public, voluntary and private sector bodies and professional organisations.
- Informing and educating the public, but also setting the agenda for public debate about the environmental topics, thereby modifying the climate of opinion surrounding it.

Encouraging local and national policy changes so as to create a supportive environment within which people are more able to change their behavior.

Theoretical Framework

To place this study in an apt theoretical framework, the knowledge attitude and practices model was chosen. Otherwise referred to by its acronym KAP, this model can serve as an educational diagnosis of a set of people. The main purpose of this model is to explore changes in knowledge attitude and practices of a community or group of people. The import of this model is that when a particular set of people who have become so used to a particular behaviour receives an increased knowledge as regards issues such as safe practices towards the environment in the face of the climate change reality.

KAP study tells us what people know about certain things, how they feel and also how they behave towards such things (Felix & Guntt, 2000). KAP measures the knowledge, attitude and practices. The knowledge possessed by the community or people here refers to their understanding of a given topic, like global warming. Attitude refers to their feeling towards the subject as well as preconceived ideas that they may have towards it, and

practice refers to the ways in which they demonstrate their knowledge and attitude through their actions. Here, understanding the levels of knowledge. Attitude and practices will enable more efficient process of awareness creations as it will allow programs to be tailored more appropriately to the needs of the people (Felix & Guntt, 2000).

Applied to this study, the KAP model will help us to understand the people's response to the climate change campaign in terms of their knowledge, attitude and practices in relation to the phenomenon. "Knowledge" this time will mean how much the audience knows of global warming, its causes and mitigating measures. "Attitude" will mean their disposition towards the mitigating measures; while "practices" refers to their actual behaviour (positive or negative) towards these mitigating measures. More precisely, the knowledge of issues surrounding global warming among local eatery operators in Awka, Anambra State, particularly as related to their activity of open air cooking, could predispose them to some form of positive attitude which could ultimately translate to practices that would mitigate global warming.

Research Methodology

Research Design

Research design is a plan for a research project. According to Asika (1991) research design means:

The structuring of investigation aimed at identifying variables and their relationship to one another. It is an outline or scheme that serves as a useful guide to the researcher in effort to generate data for his study (p.27). This study was designed as survey. Survey is descriptive study and an investigation in which only part or sample of the population is studied and selection is made in a true representation of the whole population (Asika, 1991). Information generated from the true representation of the sample is usually generalized to the whole population. The nature of the variables being investigated in the study made survey the ideal design for the study. Secondly, given the size of the population that is involved, sample survey would help the researcher to study only a given portion (sample) of the population as studying the entire population may be impractical within the available resources and time frame.

Area of Study

The area of study was Awka town in Awka South Local Government Area of Anambra State. It is the state capital and comprises both urban and rural areas. Its population is mixed – comprising indigenes and non-indigenes of varying demographics.

Population of Study

A population is made up of all conceivable elements, units or subjects relating to a particular phenomenon of interest to the researcher. Subjects or elements are individual items that make up the population, which may be observed or physically counted (Asika, 1991, p.111).

A study population involves all members of a group (human or non-human group) which is the target of a study. The population of this study was all local eatery operators in Awka. The exact number of the operators could not be ascertained given that they are not located at any particular point(s) in the town and that they are not organised in a union and neither is there a registering or licensing body that could have record of operators.

Sample Size and Sampling Procedure

Given that the exact or estimated number of members of the population could not be obtained, the researcher opted for census approach in selecting her sample. The census approach was preceded by a multi-staged procedure to get to the level of the individual operators.

At the first stage, the researcher wrote down the names of the 33 villages in Awka town. Then, employing a table of random numbers, she selected 10 of them as follows: Agbana, Agbana-Ifite, Amudo, Isiagu, Obunagu, Onuko, Umudioka, Umuogbu, Umuokpu and Umuzocha.

At the second stage, the researcher, still following the same procedure, picked 10 streets from each of the 10 villages. This amounted to 100 streets.

At the third stage, the researcher selected as many local eateries as available in each of the 100 streets. At the end of the day, a total of 387 eateries were selected. Questionnaire was issued to the operator of each of the eateries.

Method of Data Analysis

The researcher’s method of data analysis was quantitative. Answers extracted via the questionnaire were recorded as numeral data. The frequency of each answer was found and the percentage computed accordingly. Statistical tables were used to present these data before the researcher proceeded to interpret them towards answering the research questions. However, Pearson’s Product Moment Correlation Coefficient was employed for testing the hypotheses. The analysis was computer-assisted via the Statistical Package for the Social Sciences (SPSS).

Analysis, Interpretation of Data and Discussion of Findings

This section presented the data collected from the field using the questionnaire. The presentation was done with the aid of statistical tables and charts. These tables were analysed and interpreted towards answering the research questions and testing the hypotheses.

Exposure to Issues of Global Warming

Table 1

Respondents’ Exposure to Communication on Global Warming

	Frequency	Percent
Yes	159	44.4
No	199	55.6
Total	358	100.0

Table 1 shows that 25.1% of the respondents had heard or read about global warming as against 74.9% that had not. The implication of the foregoing is that more than half of the respondents said they have not read or heard about global warming.

Table 2

4.1 Respondents’ Media of Exposure to Communication on Global Warming

	Mass media	Conference/Seminar/ workshop etc	Relatives/friends/ colleagues etc	Others
Yes	44.4% N = 159	32.4% N = 116	17.6% N = 63	18.7% N = 67

No	55.6% N = 199	67.6% N = 242	82.4% N = 295	82.3% N = 291
TOTAL	100% N = 358	100% N = 358	100% N = 358	100% N = 358

Table 2 shows that 44.4% of the respondents have received information about global warming through the mass, while 55.6% have not. Also, 32.4% have received this through conferences/seminars/workshops, while 67.6% have not. However, 17.6% have received this information via relatives/friends/colleagues etc as against 82.4% that have not. Lastly, while 18.7% have received this information through other (unspecified) sources, 82.3% have not. Hence, the mass media and conferences/seminars/workshops featured mostly among the respondents' sources of exposure to global warming communication.

Table 3

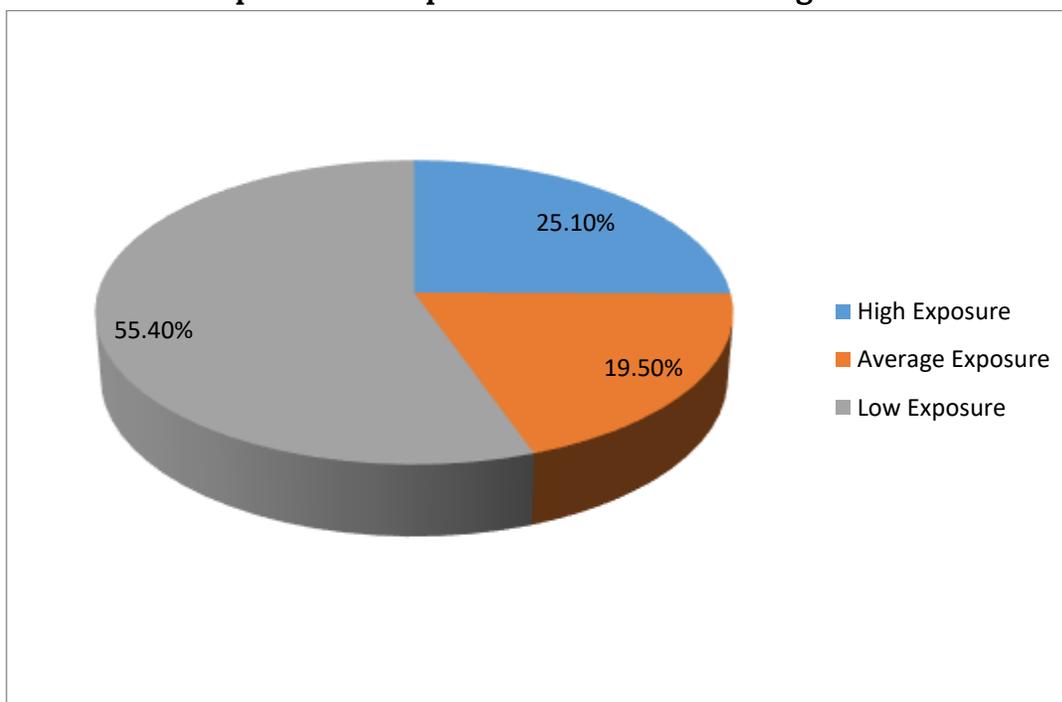
4.2 Respondents' Media of Exposure to Global Warming Issues

	Global warming means that the earth's atmosphere is getting hotter?	Global warming causes sea levels to rise leading to flooding?	Global warming is caused mainly by human activities?	Global warming can be checked through certain deliberate actions?	Global warming if not checked will eventually make the earth uninhabitable?
True	40.2% N = 144	25.1% N = 90	27.4% N = 98	24.7% N = 89	3.6% N = 13
False	59.8% N = 214	74.9% N = 268	72.6% N = 260	75.1% N = 269	96.4% N = 345
TOTAL	100% N = 358	100% N = 358	100% N = 358	100% N = 358	100% N = 358

Table 3 shows that 40.2% of the respondents knew that global warming means that the earth's atmosphere is getting hotter while 59.8% did not know this. Also, while 25.1% knew that global warming causes sea levels to rise leading to flooding, 74.9% did not. However, 27.4% were aware that

global warming is caused mainly by human activities as against 72.6% that were not. Then while 27.4% knew that global warming can be checked through certain deliberate actions, 75.1% did not know this. Lastly, 3.6% of the respondents knew that global warming if not checked will eventually make the earth uninhabitable, while 96.4% did not. The foregoing indicates that only minority of the respondents had the right knowledge regarding the various issues around global warming.

Figure 1
Cumulative Respondents' Exposure to Global Warming Issues



However, to more precisely measure the respondents' exposure to issues of global warming, each person was categorized as having "high exposure", "average exposure" or "low exposure" based on the number of correct answers he/she has given to questionnaire items presented in Table 4 above as follows: 4 to 5 answers – "high exposure"; 3 answers – "average exposure"; and 0 to 2 answers – "low exposure". Hence Figure 5 shows that cumulatively, 25.1% of the respondents had high exposure to global warming issues, 19.5% had average exposure whereas 55.4% had low exposure. The implication of this is that majority had low exposure to these issues.

Knowledge of Causes of Global Warming

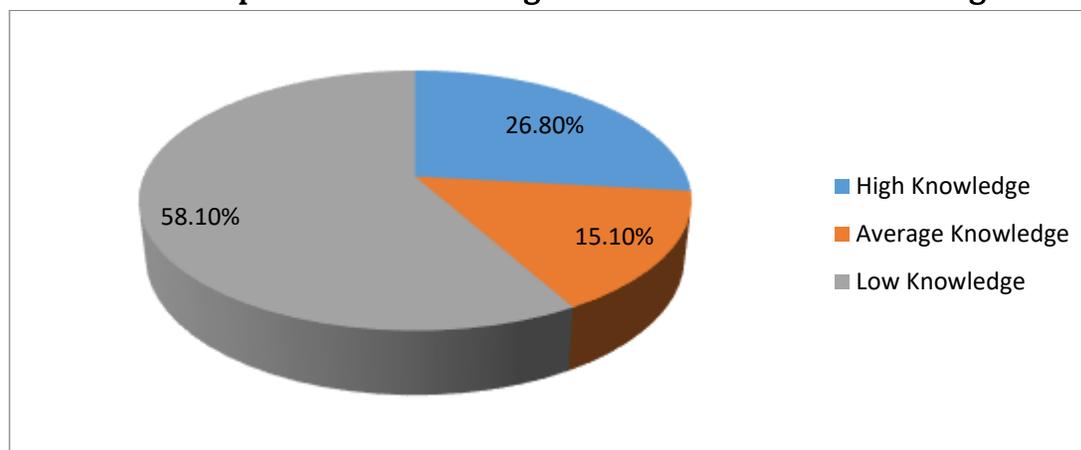
Table 4 Respondents' Knowledge of Causes of Global Warming

	Burning of fossil fuels such as firewood, charcoal, coal, etc contributes to global warming?	Emissions from combustion engines such as vehicles, generators etc contribute to global warming?	Felling of trees contributes to global warming?	Use of certain pesticides and insecticides contributes to global warming?	Use of air conditioners and refrigerators may contribute to global warming?
Yes	40.2% N = 144	42.7% N = 153	25.1% N = 90	59.8% N = 214	74.9% N = 268
No	59.8% N = 214	57.3% N = 205	74.9% N = 268	40.2% N = 144	25.1% N = 90
TOTAL	100% N = 358	100% N = 358	100% N = 358	100% N = 358	100% N = 358

Table 4 shows that 40.2% of the respondents believed that burning of fossil fuels such as firewood, charcoal, coal, etc contributes to global warming while 59.8% did not. Also, while 42.7% thought that emissions from combustion engines such as vehicles, generators etc contribute to global warming, 57.3% did not think so. Similarly, 25.1% believed that felling of trees contributes to global warming as against 74.9% that did not. In the same vein, while 59.8% believed that use of certain pesticides and insecticides contributes to global warming, 40.2% did not. Lastly, 74.9% of the respondents thought that use of air conditioners and refrigerators may contribute to global warming while 25.1% did not.

Figure 2

Cumulative Respondents' Knowledge of Causes of Global Warming



However, to more precisely measure the respondents' knowledge of causes of global warming, each person was categorized as having "high knowledge", "average knowledge" or "low knowledge" based on the number of correct answers he/she has given to questionnaire items presented in Table 4 above as follows: 4 to 5 answers – "high knowledge"; 3 answers – "average knowledge"; and 0 to 2 answers – "low knowledge". Therefore, Figure 6 shows that 26.8% had high knowledge of causes of global warming, 15.1% had average knowledge whereas 58.1% had low knowledge. Hence, majority of the respondents possessed low knowledge of causes of global warming.

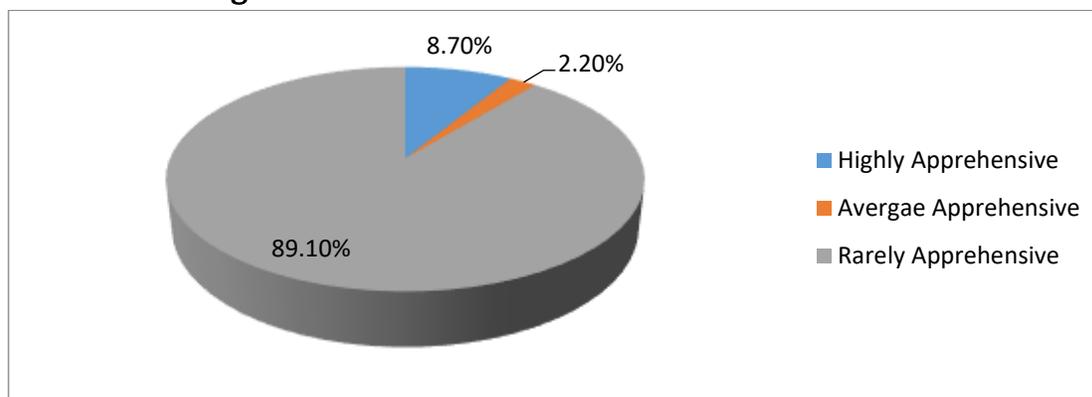
**Apprehensiveness in Line with Evidential Implication of Global Warming
Table 5**

**Respondents' Apprehensiveness in Line With
Evidential Implication of Global Warming**

	Have you been apprehensive of the discomfort which the increasing hotness entailed by global warming will bring to humans?	Have you been apprehensive of overflowing of the sea and the consequent flooding which global warming will bring about?	Have you been apprehensive of overall implication of global warming to human survival?
Yes	10.9% N = 39	8.7% N = 31	10.9% N = 39
No	89.1% N = 319	91.3% N = 327	89.1% N = 319
TOTAL	100% N = 358	100% N = 358	100% N = 358

Table 5 shows that 10.9% of the respondents had been apprehensive of the discomfort which the increasing hotness entailed by global warming will bring to humans while 89.1% had not. Similarly, while 8.7% had been apprehensive of overflowing of the sea and the consequent flooding which global warming will bring about 91.3% had not felt so. This is even as 10.9% had felt apprehensive of overall implication of global warming to human survival as against 89.1% that had not.

Figure 3
Cumulative Apprehensiveness in Line With Evidential Implication of Global Warming



However, to more precisely measure the respondents' apprehensiveness in line with evidential implication of global warming, each person was categorized as having "high apprehensiveness", "apprehensiveness" or "low apprehensiveness" based on the number of "Yes: answers he/she has given to questionnaire items presented in Table 5 above as follows: 3 "Yes" answers - "high apprehensiveness"; 2 "Yes" answers - "average apprehensiveness"; and 0 to 1 "Yes" answers - "rare apprehensiveness". Therefore, Figure 7 shows that 8.8% of the respondents 8% were highly apprehensive in line with evidential implication of global warming, 2.2% were averagely apprehensive as against 89.1% that were rarely apprehensive. Hence, majority of the respondents were showed rare apprehensive towards global warming.

Mitigating Behaviour Against Global Warming

Table 6

Respondents' Mitigating Behaviour Against Global Warming

	Do you cook the food you sell using firewood, charcoal or sawdust?	If no, did you do it in the past?	Was your decision not to cook using firewood, charcoal or sawdust informed by your concern for global warming?
Yes	75.1% N = 269	23.7% N = 85	3.9% N = 14
No	24.9% N = 89	3.6% N = 13	41.1% N = 147

No	-	72.6%	55%
Answer		N = 260	N = 197
TOTAL	100%	100%	100%
	N = 358	N = 358	N = 358

Table 6 shows that 75.1% of the respondents cook the food using firewood, charcoal or sawdust as against 24.9% that do not. However, while 23.7% said they did this only in the past 3.6% never did it all. Then 3.9% said their decision not to cook using firewood, charcoal or sawdust informed by concern for global warming while 41.1% said it was not the case with them. From the foregoing, it was observable that only minority of the respondents did not practice open air cooking.

Summary / Discussion of Findings

This study explored the perception of local eatery operators in Awka Anambra State on the global warming implication of open air cooking. Situated within the Knowledge, Attitude and Practices (KA) model, the study formulated three objectives: to ascertain whether local eateries in Awka are exposed to the issues of global warming; to determine whether the eateries operators are knowledgeable about factors that contribute to global warming; to find out whether they are apprehensive about the evidential implication of global warming; and to determine whether they have taken steps towards behaviour that mitigates global warming in line with suggestion made by global and local agencies. The study was designed as a sample survey. The area of study was Awka town in Awka South Local Government Area of Anambra State and the study population was all local eatery operators in Awka. The census approach was employed in selecting 387 eateries and questionnaire was issued to the operator of each of the eateries. Data analysis was quantitative in nature using simple percentages and Pearson's Product Moment Correlation Coefficient. The study came out with following findings:

- that local eatery operators in Awka have low exposure to the issues of global warming;
- that the eatery operators have low knowledge of factors that contribute to global warming;

- that they are largely not apprehensive about the evidential implication of global warming;
- that they have failed to take steps towards behaviour that mitigates global warming in line with suggestion made by global and local agencies;
- that if local eatery operators are knowledgeable about factors that contribute to global warming they will engage in mitigating behaviours; and
- that if they are apprehensive about the evidential implication of global warming they will engage in mitigating behaviours.

Recommendations

Based on the findings made herein, the researcher hereby makes the following recommendations:

- i. Global warming campaign should be intensified targeting specifically commercial eatery operators with the view to improving their knowledge and awareness of the implication of their activities to global warming. This way, they could imbibe the required behaviour that would mitigate the impact of global warming.
- ii. There is need to incorporate global warming education into the school system starting from the primary to tertiary level. This way, Nigerians would become exposed to the issues of global warming from their early years which would bring about positive attitude formation in regard to global warming.
- iii. The government should make laws towards regulating open air cooking and other activities contributing to global warming. Importantly, the enforcement of such laws should be taken seriously.

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