

Factors Determining Sources of Cooking Energy among Rural Women in Ondo State, Nigeria.

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Abstract

This study focuses on factors determining sources of cooking energy, among the rural women in Ondo State, Nigeria. Rational Choice Theory was employed to explain the choice of cooking energy among the rural women. Ten (10) focus group discussions consisting of 8–10 participants was conducted. Data collected were analyzed using content analysis. Participants reported high cost and non-availability of kerosene and gas and epileptic power supply as reasons for firewood cooking. The challenges associated with the means of cooking range from gas and kerosene explosion as a result of adulteration. They suggested that alternative sources of cooking should be made available at affordable prices. The paper concludes that, the Federal Government of Nigeria (FGN) should make kerosene and gas available and affordable in the rural areas; sensitize rural women on the effects of firewood cooking on their health and the danger of deforestation.

Keywords: climate change, firewood cooking, kerosene, livelihood

Introduction

The global population of those who currently depend on solid fuels such as woody biomass, charcoal, coal, agricultural residues and animal waste to meet their cooking and heating requirements is over 3 billion (International Energy Agency (IEA). 2017; Zongxi, Zhenfeng, Yinghua, Hongyan, Yuguang et. al., 2017) In developing countries the rate at which both rural and urban women depend on solid biomass for cooking is high (International Energy Agency report, 2006). Firewood cooking has been attributed to health challenges such as ... in women and their children. Despite the health implication, firewood cooking remains unabated as over 52% of people in developing countries rely on solid biomass for cooking and heating while in sub-Saharan Africa over 90% of the population in rural communities relied on firewood as a primary energy source for cooking [IEA. 2006; Panwar, 2010; Shackleton, Gambiza, Jones, 2007; Bensch & Peters, 2011; Jung & Huxham, 2018]. Factors such as erratic nature of electricity, high cost of alternative energy carriers such as kerosene and liquefied gas have been attributed to what necessitate the increase in the use of firewood for cooking in developing countries [Kimemia & Annegarn, 2016].

It is important to note that rural households all over the world depend on fossil fuel and firewood for cooking (Tabuti, Dhillion, and Lye, 2003; The Organisation for Economic Co-operation and Development (OECD), 2006). Also in Nigeria, fuel-/firewood is the most prevalent source of cooking among the women in the rural communities; but, global warming and government's policy of afforestation are crucial factors in considering the alternative source of cooking.

Ondo State is a patriarchy society where cooking has been culturally ascribed to women. Gender bias in cooking remains in Nigeria generally and southwest in particular despite globalisation and westernisation. The dependence on fossil fuel and firewood has untold consequences on human being's health and environment (Langbein, 2017). There are cases of desert encroachment, inundated rainfalls, high fever, diseases and flooding in the southwest Nigeria. In Nigeria, climate change has affected people's ways of life. The inhabitants of the rural communities mostly depend on environment. Environment determines how they live, think, plan and act. The destruction of environment by those who depend on firewood and fossil fuel for cooking has resulted into climate change. The change in climate has affected farming, fishing and it has created wide spread of diseases (Sylla,

Elguindi, Giorgi & Wisser, 2016; Mwandosya, 2007; Fayankinnu & Owagbemi, 2018).

Dependence on fossil fuel and firewood for cooking has been discovered as the source of greenhouse effects in the region (Mon, Mizoue, Htun, Kajisa & Yoshida, 2012).. The cooking energy used by women is largely determined by the unavailability of alternatives source of energy (Win, Mizoue, Ota, Kajisa, & Yoshida, 2018). While the provision of alternative sources of cooking energy appears limited to urban women, rural women depend solely on firewood for cooking. The paper therefore seeks to examine the determinants of source of cooking energy for rural women in Ondo state, Nigeria.

Rational Choice Theory and Cooking Energy among Women

The paper fraternises with Rational Choice theory which supports the availability of choices as prediction of human action. Women in this study are expected to make choice of alternative method of cooking available to them in order to protect the environment. The researcher employs Rational Choice Theory to explain how individual woman in rural area interact to generate often surprising aggregate outcome in the choice of cooking energy. Rational Choice Theory is a criminology theory which has been used extensively to explain the choice available to criminals before committing crimes. The activities of women are not criminalised in this study because criminalisation of anthropogenic that contributed to climate changes is not the objective of the study. Though, United Nations has demonised anthropogenic phenomena that are associated with climate change such as carbon dioxide emission, gas flaring and others. Rational Choice is used to explain the general statement which state that women in the Southwest will adopt the least climate change trigger in selecting the choice of cooking energy.

Description of Study Location

This study will be carried out in Ondo state, Nigeria. Ondo State was created in 1976 out of the former Western State. The state lies between latitudes 5 45' and 7 52'N and longitudes 4 20' and 6 03'E. It is bounded on the east by Edo and Delta states, on the west by Ogun and Osun states, on the north by Ekiti and Kogi states, and to the south by the Bight of Benin of the Atlantic Ocean. The state occupies a land area of about 15,000 Square kilometers with a population of 3,441,924 people according to 2006 census. The state has eighteen (18) Local Government Areas, with Akure as the capital city as well as the largest settlement. Some of the other

prominent towns in the State are Ondo, Owo, Ore, Okitipupa, Ikare, Idanre, and Ile-Oluji. The people of the state are mostly Yoruba, although other Nigerians and foreign nationals equally live in the State. Agriculture is the mainstay of the people of Ondo State. This study has rural women as targets: Shimerin, Bolorunduro and Asewele were selected from Ondo North, Ondo Central and Ondo South senatorial districts respectively as the study areas.

Method and Materials

The data utilized for this study were gathered from a recent exploratory study conducted in three rural areas each from the three senatorial districts in Ondo State, Nigeria. The study adopted a qualitative research design. The method used for the collection of data was Focus Group Discussions (FGDs). The FGDs specifically sought to know the determinants of source of cooking energy for rural women and perceived effects of firewood cooking on their health. Ten FGDs, consisting of 8 and 10 participants per session, were held with purposively selected women who have resided in the selected rural communities in the three Senatorial Districts of Ondo State for at least three years and expressed interest to participate in the study. The FGDs were held in the participants' local language – Yoruba. Altogether, 105 participants participated. During the discussions, efforts were made to ensure that participants in each session were homogeneous in terms of their age and length of experience in firewood cooking. This encouraged them to express themselves freely. Also, participants' consent to have their voices recorded was requested and granted, which gave the participants confidence that the discussions were strictly for academic purposes. Apart from convincing them, through verbal discussions, that the facilitators were learning from them and not testing their knowledge, the participants were also encouraged to choose the setting for their discussions and to ask the facilitators questions. The FGDs were conducted in locations and spaces free of the watchful eyes of residents, the threat of sanctions, and the influence of non-participating on-lookers and gate-keepers. The FGDs lasted between 60 and 68 minutes each. The data collected were audio-taped, sorted, transcribed and later translated with the help of field assistants. Data were analyzed using manual content analysis, and reporting responses of participants where necessary. Notwithstanding that the study design was qualitative, effort was made to quantify some variables such as age, educational qualification, religion, and marital status.

Bio-socio Characteristics of Participants

The participants are made up of 87 females whose ages range between 18 and 62 years. Specifically, 21 of the participants were aged younger than 25 years, while 58 were aged between 25 and 50 years and 8 were aged 51 years and above. The age distribution indicates that a high proportion of the participants are in their most productive years and therefore still participate actively in food preparation at home. Seventy-six (76) of the participants were married, eight (8) reported that they were single, while three (3) were widowed. Their religious affiliation was such that sixty-four (64) were Christians, eighteen (18) Muslims and five (5) practiced traditional religion. Majority of the participants (74) had spent between 04 to 10 years in firewood cooking while 13 had less than 4 years' experience in firewood cooking.

Factors Determining Source of Cooking Energy among Rural Women

A sizeable proportion of the participants attributed the use of firewood which is the most prominent method of cooking among them to factors such as unavailability of gas and kerosene, high cost of kerosene even when its available and epileptic power supply, They further stated that kerosene filling stations are not enough and the few ones around are not functional. Some of them reported to be trekking some kilometers away from home before they could get some liters of kerosene. They also see lack of gas filling station within their locality as an hindrance to gas as alternative method of cooking among them.

A summary of participants' submission is shown below:

The only filling station that we have in this village is not always functional. Most times, when we went there to buy some kerosene, they complained about so many things. Their complains range from non-availability of electricity to power the engine. Because of this they impose extra charges on their customers, they call it money for generator. Not only this, for about two to three months kerosene may not be available in this station. So for how long will one continue to wait for something that is not available[female participant, aged 47].

An excerpt from one of the FGDs gives an insight into what determines the cooking method they use:

Firewood is always available. It is either you buy some quantity from those who sell in the village or you give some little amount to the children for them to fetch you some from the nearby bush. It is very affordable and available too. Kerosene is sold for #278.00 per liter at

the filling station while 5 liters is #1390.00. This can only serve me for about six days. But a #600.00 worth of firewood would serve me for about two to three weeks. Not only this, firewood cooking is faster than kerosene stove cooking [female participant, aged 61].

Another participant was of the opinion that:

In urban centers there are lots of cooking options available to women. These range from electric stove, gas stove, kerosene stove and three stones firewood. They are always available, affordable and relatively cheaper compare to what they give to us in the rural area, except firewood. I am of the opinion that if some of these options can be made available and affordable for those of us in the rural area, a good number of us will prefer to dump firewood cooking for either of the first three [female participant, aged 33].

Knowledge of Alternative Cooking Methods among the Rural Women.

Almost all the participants exhibited knowledge about means of cooking that are available. According to them, the cooking methods include, electric stove, kerosene stove, gas stove and the three-stone firewood cooking. The participants explained that kerosene stoves are affordable but kerosene is scarce and when it is available the price is not always affordable.

An excerpt from one of the FGDs sheds light on the participants' knowledge about means of cooking

While we are growing up as a child, we used to see some of our teachers in the school cooking with kerosene stove. Although, it was strange to us then but we knew the purpose it serves. There has never been a time when people stopped using kerosene stove, the only is that it is not common some years ago. But today, hardly is there any household in this village where there is no kerosene stove. Even in some households you can find two kerosene stove at a time [female participant, aged 60]

Rural women's knowledge of other alternative means of cooking most especially kerosene stove is closely associated with secondary socialization in schools. All the participants agreed that the first means of cooking they were taught was firewood cooking and that this was received from their parents. According to most participants, as female kids growing up, their parents usually invite them to the kitchen where they used three-stone cooking method with firewood. The

participants all agreed that the use of gas for cooking is a recent development. Some of them assert that usage of gas was common with those in urban centers. Accordingly, they stated that few of them now have cylinders; these cylinders were bought by their children who are in the cities. The cost, unavailability and the associated danger attached to cooking with gas has made it not to be prominent in the rural communities.

In the last nine years or more, my second daughter who was married to a Pastor who worked in Ibadan bought me a 12.5kg cylinder filled with gas when coming home for Christmas anniversary. Since then, the cylinder has only been re-filled from Ibadan two times by her husband. The unavailability of gas filling station in our village and the high cost of gas are the factors hindering the usage of gas for cooking [female participant, aged 53].

Challenges Associated with Cooking Methods

The majority of the participants associated some challenges to each of the cooking methods. Despite the fact that some of these methods are not common within their locality, yet, they said they gathered some of the information from radio and this they use to make their assessment of the methods. Furthermore, they were asked to talk about the dangers. An overwhelming number of them perceived cooking with gas as most dangerous. While few among them said they were only told by medical doctors of the danger in cooking with firewood when they were ill, the sickness was associated with smoke inhaled from firewood during cooking. While few of them talked about the adulteration of kerosene, the incident which the said had claimed lives in some years back.

The following excerpts from the FGDs shows how the participants perceive cooking with gas.

Cooking with gas is so dangerous and it can cause a serious havoc if not properly handled. Personally, I cannot use gas for cooking, this is because I have heard from the news where an act of forgetfulness on the part of the person cooking had led to a complete building being razed down. This is very uncommon with firewood cooking. The worst that can happen if one forgets that he/she is cooking is to have the food burnt [female participant, aged 46].

One of the participants made this submission:

I was sick some years ago and when I got to health centre my husband was told that the sickness was as a result of smoke which I do inhale during cooking. I was later warned to avoid firewood cooking and that I should go for kerosene stove. Before I was discharged from the hospital, my husband had bought a kerosene stove for domestic use. But I want to tell you, I cannot remember the day I used the stove last due to unavailability of kerosene. The only filling station around us here is about nine kilometers away. The stress of getting kerosene is much and when you get to the station the price they sell to us is more than what they sell in the cities [female participant, aged 39].

In another view extracted from the FGDs, a participant in one of the villages said:

I will never forget the havoc caused by kerosene in this village some years ago. The kerosene that was supplied to the filling station was adulterated. About seven persons and their properties were burnt, kerosene exploded when six of the women were trying to lit kerosene stove and they were burnt beyond recognition. The remaining one was consumed by fire through explosion from kerosene stove and she also died after some days at the health centre [female participant, aged 53].

From the foregoing, it clearly shows that women attributed challenges to each of the cooking methods they know. Some they have had a direct encounter with while some through information from medical doctors. On the other hand, some of the participants said that, if gas and kerosene are made available and affordable they would prefer it to firewood cooking.

Rural Women Perception of the effect of Tree Cutting on Climate Change

Majority of the participants did not see any relationship between tree felling and climate change. They were of the opinion that cutting of trees had been an age long thing and that for some group of people to now attribute this to what is happening to weather it is mysterious. Also, they did not also support the idea of tree replacement, to them, it is God that replaces trees in the bush not human being. The following lines from the FGDs illuminates further:

I do not know there is any relationship between firewood cooking and the change in climate. This is because, firewood cooking has been an age long method of cooking. And change in climate is also not new at all. We have been seeing changes in climate right from the time we

were young. How can they now be attributing this to firewood cooking? No, it is not true [female participant, aged 27].

In another view extracted from the FGDs, a participant said:

It is not possible for trees to be totally eliminated in the forest. Firewood cooking has been in existence even before I was born. It featured prominently in the indigenous Yoruba society and it is on in the rural communities. What I believe is that as human being fell trees for different purpose, so God in His wisdom replaces them. For anyone now to say that trees are no more in the bush, it is a lie. There is no time one enters into the bush without coming out with firewood [female participant, aged 51].

Conclusion

This study has identified the factors determining sources of cooking energy among rural women in Ondo State, Nigeria. Some of these are: non-availability of kerosene and gas, high cost of gas and kerosene, the fear of danger attach to the use of gas and kerosene and epileptic power supply. This corroborates findings from previous studies (Das, Jagger and Yeatts, 2017; Jung & Huxham, 2018). The probe into the challenges associated with each of the means of cooking they know show that they see cooking with gas as the most dangerous among other methods. Few of them reported the kerosene explosion which happened in their village some years ago which led to the death of seven persons as one of the factors that do discourage some people from using kerosene stove even when kerosene is available. While some of them opine that it was when they fell sick that doctor told them at the health center that their sickness was linked to firewood cooking.

The findings also show that rural women in Ondo State, possess knowledge of cooking options in addition to firewood cooking. Finally, summary of the rural women perception of the effect of tree cutting on climate change shows that they did not know that tree cutting leads to deforestation which has a negative effect on the climate. On the issue of tree planting, they assert that it is God that replaces trees in the bush and that there will never be a time when trees will not be available in human history. Given the above findings, this study suggests there is a need for alternative sources of cooking among the rural women. this should be made available at affordable prices. The paper therefore concludes that, the Federal Government of Nigeria (FGN) should make kerosene and gas available and affordable; more filling stations should be sited in the rural areas; sensitize rural

women on the effects of firewood cooking on their health; and the rural women should be made to know the danger of deforestation which occur as a result of continuous tree cutting without replacement.

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