

## Assessing the Development of Pottery in South-South Nigeria to the Era of Crude Oil

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### Abstract

Pottery, baked clay has been in practice in the South-south region of Nigeria, long before the discovery of crude oil in about 1956 in the present Bayelsa State. The fact remains that the potters never had it easy hardening their wares through the open fire technique characterized by excessive loss of heat and wares, uncontrollable temperature, weak, porous, dull, low temperature and unglazed wares in addition to the health hazard. This paper aims to assess the development of pottery in the South-south region of Nigeria to the era of crude oil. This will be achieved by taking a critical look at the practice before and after the discovery of crude oil and its attendant products for the lubrication of the pottery process. With available data from both primary and secondary sources, this paper will highlight the role of crude oil in the development of pottery in the South-south region.

### Keywords:

Crude oil,  
Discovery,  
Uncontrollable,  
Hazard, Excessive,  
Hardening

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## **Background to the Study**

Pottery has remained one of the oldest crafts practised by man and has from its accidental discovery, provided man with products that met both the aesthetic and utilitarian functions of art. The material, clay which is the product of igneous rock remains the major raw material for pottery and is found in abundance in the South-south region which is one of the six geopolitical zones of the country with Port Harcourt City as the zonal headquarters. Port Harcourt, founded in 1914, one of the oldest cities in the country has developed into a metropolis where people from all over the world come to live and do business and other activities. The multinational companies and their head offices exploring and exploiting oil in the region are not left out. The city has become so densely populated with estate developers working to provide the citizens with affordable houses. This has given rise to high demand for pottery wares and other products and services which are yet to be met.

The city is also the capital of Rivers State, one of the thirty-six states of the country and as a capital city, it has extended to cover the neighbouring local government areas in what is today known as the Greater Port Harcourt City, with the sole aim of extending development into the rural areas to check the rural-urban drift.

The area referred to as the South-South region which is also part of the Niger Delta Region is made up of six states, namely Akwa Ibom, Bayelsa, Cross River, Delta, Edo and Rivers States, The South-South region is bounded in the north by North- Central, in the west by South- West, in the east by South-East and in the south by the Atlantic Ocean. The people of the area are predominantly, Christians and their major occupations are farming, fishing, trading and pottery, the art and science of fired or baked clay practised, long before the discovery of crude oil.

## **Aim and Objectives**

This paper aims to assess the development of pottery in the South-south region of Nigeria to the crude oil era and the objectives are to find out if and how the people of the zone practised pottery before the crude oil era, to find out how crude oil and its attendant products are involved in pottery production and to establish the remarkable changes or development in the practice to the crude oil era.

## **Literature Review**

### **Theoretical Framework**

This work is anchored on the functionalist theory. Durkheim, M. (1857-1917), is closely associated with functionalism theory since he often employs analogies with biology. The functionalists assert that society exists as a whole made up of different parts or structures that perform or play their parts effectively to contribute to the existence of the whole or united entity. This theory which is also referred to as structural functionalist theory holds that the failure of the whole in society, is the failure of one of the parts or structure. This follows that in an organic matter, society and individuals or structures exist and work to sustain each other. Egonwa, (1991), opined that the artist derives his ideas from society

and is himself, a product of the society. This theory supports this work in the sense that the work of the art historian is to make the work of art as a visual, visible or tangible form, legible. Thus, while the work of art is the testament of the artist, the word invested in the form, medium, style, artist, culture, content, value and time or period becomes the testament from the historian. This paper, therefore, takes a critical view of and documents the existence and practice of pottery before and after the discovery of crude oil in the South-south region of Nigeria.

Firing is simply the process of baking clay, whereby thermal or heat energy is transferred from a hot area to a cold area by radiation. Udoka (2012), opined that “the idea of firing clay vessels must have been discovered by accident during the most primitive state of human existence”. In other words, it came as a result of man's contact with fire when he adopted the settled lifestyle. It is the most fascinating aspect of pottery since it determines the success or failure of the practice. Firing is done in the kiln and according to Bryan (2011), “it is a versatile equipment in the studio”. The kiln is a specially designed and built oven capable of generating, retaining and increasing temperature for thermal efficiency or vitrification which according to Okoli (2021), “is a progressive fusion of ceramic substances as the temperature increases”. Firing which makes clay dense, rock-like, vitreous, permanent, impervious, beautiful and useful can be done under natural, oxidation and reduction atmospheres. Cardew (1977), opined that “a clay ware, however much skill and knowledge have gone into its making, has no commercial value without firing”. Firing, therefore, is the science of applying thermal or heat energy to the kiln to convert clay to ceramic. Anyakoha (2016), asserted that “heat is a form of energy called thermal energy in transit perceived as temperature which is the degree of hotness or coldness of an object”.

The kiln is designed and built with refractories to generate, retain or confine and build up thermal or heat energy at a temperature enough to convert clay to ceramic. There are several types of kilns based on the chambers, materials to be fired, chimney, draft and the different sources of fuel and energy for firing the kiln. The single chamber or static kiln is the one whereby wares are loaded, fired and offloaded before loading another set of wares for firing.

The Tunnel or Continuous kiln is the type that is long with several chambers with burners in the middle chamber where the thermal efficiency takes place. The wares are loaded on a cart or truck and mechanically controlled into the first chamber from a dashboard outside the kiln. Nobody enters the kiln since all the chambers are occupied by loaded trucks which are moved automatically when a completely fired truck goes out from the last chamber. It is a continuous kiln where a truck of wares is mechanically driven in and periodically moved and gradually receiving heat as it approaches the central chamber that carries the burners. As it leaves the central chamber where the firing is completed, cooling begins till it reaches the last chamber where the door opens for it to drive out while a new truck moves in.

A kiln can also be designed and built based on the materials to be fired. The materials can be acidic, alkaline or amphoteric (neutral). A typical example of such kilns is the salt and raku kilns. Chimney and draft can also differentiate kilns. Over the years, there has been a great development in kiln design and construction from the ancient bonfire technique, the firewood and coal, the liquid fuels such as kerosene, diesel and engine oil, the natural gas, to the modern sophisticated kilns that fire by electricity. Rhodes (1981), said that “the earliest kilns were little more than modified bonfire which dates back to 8000 BC and probably beyond”. This made the primitive firing techniques very tedious with so many challenges.

The chimney controls the draft of the kiln. There are the updraft and the downdraft kilns. The updraft kiln has its chimney constructed on the dome or roof of the kiln. This does not allow the kiln to retain, build up and circulate heat energy long enough for thermal efficiency. The heat generated rises and escapes at the top without proper retention, build-up and circulation within the chamber. Greg (2009), observed that “in an updraft kiln, the flame is introduced into the bottom of the kiln and it is exhausted at the top. On the other hand, Elliot (2004), opined that “the downdraft kiln is designed to force heat energy to circulate through the chamber. The chimney is constructed from the bottom of the kiln below the floor which forces the heat energy to rise naturally, retained, built up and properly circulated within the chamber for thermal efficiency. It is important to mention here that the updraft and downdraft kilns consist of the stack area, damper, chimney and bag walls.

Sources of Fuel – From the bonfire technique of firing, the kiln needs fuel for combustion, which generates heat or thermal energy that converts clay to ceramic. There are solid fuels such as dry leaves, cow dung, coal, wood dust and firewood. The liquid fuels include kerosene, diesel and engine oil while we also have natural gas and electricity. The kilns are also designed and built with specifications to use the fuels. While the solid fuels are loaded into the fire port, the liquid and gas kilns use burners and the electric kiln uses elements lined up on the inner walls of the kiln.

### **Firing before the Crude Oil Era**

The people of the South-south region of Nigeria have been in the business of pottery before the discovery of crude oil in about 1956, even though it was not an easy task. It is interesting to mention here that pottery is basically controlled by the natural elements which include the earth, sun, water, air and fire. The earth provides the clay, crude oil, wood, coal and other minerals, the water for processing and malleability or plasticity, air for drying, the sun for preheating and fire for hardening or baking. The indigenous potters got their clay from the river bed, the earth's surface or dug from the ground. The preparation of the clay body began with slaking, followed by kneading and wedging with the addition of ground pot shard as grog, filler or opener which served as a modifier to reduce shrinkage and increase porosity and strength in the newly formulated clay body to withstand thermal shock from uncontrollable fire and heat or temperature. They made use of traditional hand-building techniques such as pinching, coiling and the slab to

achieve their forms. In some cases, pieces of broken fired pot were used as formers and whirlers which aided the carrying of the formed pot without distortion. The wares were highly textured to aid carrying and the motifs for decoration were drawn from their environment. The pots were characterized by conical or round bottom or foot that was perfect enough to sit in a shallow dug ground or a ring pad made from leaves, raffia or ropes. In recent times, such pot is made to sit on a metal tripod stand which adds to its beauty.

The primitive firing began with the bonfire technique which was very tedious and very demanding. Peters (2002), said that “the primitive firing in Nigeria was full of difficulties, experimentations, trials and errors through with some level of success. Since the profession was dominated by women, the men were involved in digging the clay, cutting the firewood, building the sheds and producing special wares such as ritual pots that the women were not allowed to touch. The women worked in groups as cooperative societies and gathered to fetch twigs and firewood in preparation for the bonfire. A particular date was picked, preferably in the dry season or when the firing will not be disturbed by the rain. When they had brought their marked pots and arranged them in a conical assemblage with the biggest pots at the base and the smaller ones on top with their mouths upside down at angles that will allow free air flow during the firing session. The spaces in between the pots were packed with twigs and firewood. When the loading was done, it was secured from falling with some hardwood packed upward from the base following the conical shape. The bonfire was lit early in the morning at about 5.00 am when the breeze was steady to ensure even firing. While the firing went on, the women stood by stoking until the firing was done.

In the closed firing methods which came as a result of the invention and development of the kiln, pots were fired with saggar pots, dug or built up pits and dug tunnels across the region. The potters still made use of the same solid fuels which was still tedious though with a better result. The next level of firing before the crude oil era was the use of well-designed and built firewood kilns. Memmotte (1970), opined that “to fire a wood or charcoal or other solid fuel kilns, one must have enough space and accommodating neighbours due to smoke, soot and dirt”. He went further to say that “the potter must be ready for sore eyes, tired muscles, sleepless night, nasal congestion et cetera”. It must be noted that either the bonfire or the solid fuel kiln was not easy for the traditional potters who were faced with many challenges.

**Advantages-** Pottery before the discovery of crude oil in the South-South region recorded some level of success. The cost of production was low because clay, other minerals and solid fuels were available and gotten almost free from the environment.

**Disadvantages-** There were more disadvantages, though the success recorded in the provision of wares to solve domestic problems encouraged the potters to continue in the practice. Below are some notable disadvantages.

**Deforestation-** The continuous use of wood for firing led to the continuous felling of trees without replacement. This exposed the land to wind and gully erosion that affected the environment, especially in the area of agriculture.

**Uncontrollable Flame and Temperature** – Except for the well-designed and built modern firewood kiln, once the bonfire and the early kilns were lit, it was impossible to control either the flame or the temperature which led to low-fired, soft and unglazed wares.

**Stoking-** This is the loading and reloading of the solid fuel throughout the firing session since a single load could not generate the desired heat and temperature to give a satisfactory firing. This resulted in a sleepless night, continuous monitoring and pampering of the kiln with attendant health problems.

**Excessive Loss of Heat-** Since the firing was open and the walls of the early kilns were not well insulated, there was a great loss of heat energy. The temperature could not rise as expected because the kilns could not retain the heat effectively and this resulted in poor thermal efficiency.

**Dirty Environment-** The continuous firing with solid fuels made the environment very dirty from ash, charcoal, carbon, soot and smoke.

**Air Pollution-** Each time firing was done the environment was polluted with smoke and soot.

**Excessive Loss of Wares-** The indigenous potters experienced an excessive loss of wares as a result of thermal shock from uncontrollable flame and heat with perhaps, a poorly formulated clay body and inadequate preheating.

**Health Hazard-** The traditional potters were faced with a lot of health challenges such as death from collapsed clay pits, physical injury such as cuts and fire burns, pneumonia, sore eyes, tired muscles, sleepless night, nasal congestion, cough, dehydration, bronchitis, anaemia and skin infection.

### **Firing in the Crude Oil Era**

Pottery practice before the discovery of crude oil in 1956 in the present Bayelsa State experienced severe friction that needed a lubricant. The arrival of crude oil, therefore, marked the introduction of lubricant into pottery practice in the region in particular and the country in general. The discovery of crude oil brought about the building of two refineries in Port Harcourt in Rivers State and Warri in Delta State, both in the South-South region and the third one in Kaduna, the northern part of the country. The refineries and the petrochemical company in the area gave rise to the production of engine oil, kerosene, diesel and town gas which are sources of energy for specially designed modern kilns with burners. Oil and gas played key roles in the generation of electricity which made firing easier and better than the solid and liquid fuel kilns.

The discovery of crude oil also gave rise to the establishment of many pottery centres in the area. It was easy to marry tradition with modernity due to the availability of petroleum products, modern kilns, equipment, tools, materials, techniques and functions which made pottery practice more convenient, interesting and rewarding. This was due to the fact that modern kilns were designed and built to generate, retain and raise the temperature higher and faster to attain thermal efficiency which produced more beautiful, functional, glazed, hygienic, vitreous and durable wares. It is worth mentioning here that the product of pottery in the crude oil era produced "The Brick House" which is the Rivers State Government House in Port Harcourt.

The technological advancement which brought about the discovery of crude oil and its attendant products, the modern kilns, materials, techniques, and functions also led to the introduction of pottery (ceramics) in particular and art in general into the formal education curriculum. Today, Pottery (ceramics) is studied in almost all the tertiary institutions in the region. The availability of oil, gas and electricity to fire furnace which melts silica for glass blowing, an area of pottery, brought about the establishment of the West African Glass Industry in Port Harcourt which produces bottles and other glass wares for breweries, drug and distilling companies and homes. It also brought about the building of a furnace for the Ajekuta iron and steel company, also in the region.

The exploration and exploitation activities by the multinational oil companies in the region have brought to the fore, life in the creeks and the riverine areas, environmental degradation, poverty, deprivation, restiveness, agitation, drug abuse, gas flaring, illegal oil refining and oil bunkering, to mention but few. Egonwa (1991), opined that "the artist derives his idea from his society and is himself a product of the society". The development in the region has given indigenous artists more than enough inspiration to create beautiful works of art with wonderful themes and content to communicate with society.

Due to the position of Port Harcourt City as the South-South zonal headquarter and the zonal business hub due to the activities of the multinational oil companies and the problems associated with oil exploration and exploitation in the zone and how to resolve them, an institute for Niger Delta Studies has been established in the University of Port Harcourt. The institute among other things has organized seminars, workshops, plays, musical concerts, poetry, art exhibitions, fashion shows and conferences to take a common position to stick, shout, work, cry and win together as a region. An example of such a programme was an international conference on Life, Literature and Environment in honour of a Poet and an indigene of the South-South region, Professor Tanure Ojaide in May 2018, organized by the University of Port Harcourt and the University of Alberta, Canada. Together with the conference were art exhibitions, poetry, plays and musical concert to create, speak, write, sing, act, play and dance words as divine tools to change the Niger Delta region. Another conference organized by the Institute for Niger Delta Studies on "The Oil in Art in Port Harcourt City" took place in June 2016. The conference brought together scholars in visual art, architecture, theatre art, film studies, music and literary studies to assess the role of crude oil in the development of art in Port Harcourt City in particular and the Niger Delta region in general.

Pottery practice in the crude oil era, despite all the advantages mentioned above, has not been without some disadvantages. Some of them are the unavailability and high cost of liquid fuels, epileptic electric power supply, high electricity tariff, poor electricity voltage, high cost of gas and modern ceramic equipment and materials, especially the imported ones. These have caused the potters to resort to improvising to remain in practice. However, it has helped the potters to study and fabricate their tools and equipment and formulate their ceramic bodies by reasoning for themselves rather than wait for imported ones which are either unavailable or too expensive to acquire by the local potters.

### **Conclusion**

The place of crude oil in the development of pottery in the South-South region of Nigeria cannot be over-emphasized. The people of the area had been in the business of pottery ever before the discovery of crude oil in the present Bayelsa State in 1956. Though the practice provided the people with vessels to solve their domestic problems, the traditional and crude methods of production, especially in the firing of wares were full of challenges. The bonfire technique, the early closed kilns and the modern designed and built firewood kilns made the practice very tedious and risky. There were problems of stoking, deforestation, pampering and monitoring of kiln, pollution, dirty environment, uncontrollable flame and temperature, and excessive loss of heat and wares. There were also health challenges such as sore eyes, nasal congestion, pneumonia, physical injury, anaemia, dehydration, and even death. The discovery of crude oil in the region, therefore, marked the introduction of a lubricant into the practice to ease the friction. Crude oil and its attendant products such as diesel, kerosene, engine oil, gas and electricity have brought about the development of modern kilns, equipment, techniques, tools, materials and new functions. Though more expensive to practice due to the high cost of modern equipment, fuels and materials, marrying tradition with modernity, in this era of technological advancement has made pottery easier, more interesting and more rewarding in the South-South region in particular and the nation in general.

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