

# DECLINING STATE OF CERAMICS INDUSTRIES IN NIGERIA: CAUSES, REVAMPING MEASURES AND PROSPECTS

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## **Abstract**

*In the past, the ceramic industry was a strategic enabler for growth, innovation and sustainability. Ceramic industries were among the greatest and earliest achievements of Nigerian businessmen. It was part of our human history since man learned to control fire and manipulate clay. Today, unlimited quantities of ceramics products have been imported into the country. There are no local well equipped laboratories and institutions to offer help in acquiring the necessary skills required in mineral processing and process technologies. Inadequate number of trained personnel, access to capital, lack of appropriate technology and machinery have made ceramics industries unpopular in Nigeria. Many jobs, direct and indirect, that would have been created, have been averted. The premise of this paper is hinged on exploring the past and present state of ceramics industries in Nigeria. This paper discusses the causes of the present decline in Nigerian ceramics industries, proffers the revamping measures, and the prospect of the industries in Nigeria. The methodology of this paper is based on information derived from secondary sources. This paper recommends that Government and multinational/financial organizations should invest in developing skilled and trained employees for the ceramic industry.*

## **Introduction**

The emergence of modern ceramic industries in Nigeria generally can be traced to the colonial era. This was as a result of the colonial government's efforts to develop the traditional pottery industry in order to meet new market demand. The effort eventually led to the establishment of ceramic experimental workshops in major towns with rich pottery tradition across the country. In addition: art schools were established to train art students to acquire professional skills and prepare them to face industrial challenges after their formal training. This has also aroused the interest of many graduates to set up their own studios, galleries and workshops. The latter is as a result of the nature and functionality of ceramics as an industrial/applied art, particularly as an entrepreneurship driven sector in Nigeria's economic sphere to help to alleviate high rate of unemployment.

Ceramics, derived from the Greek expression, *keramos*, which means 'potter's clay', was originally used to refer to the art of making pots. However, its scope has broadened to include the science of manufacturing articles prepared from malleable clays that are made rigid by firing. They are nonmetallic, inorganic materials (mainly compounds of oxygen, and compounds of carbon, nitrogen, boron, and silicon) (Kelvin, 2011). The term ceramics was originally used for pottery and earthenware collectively. It is the art of forming objects of clay in a moist plastic condition and then drying them by either exposure to sun and air, fire, baking in kilns or ovens. They are formed into various types like cooking vessels, food bowls, storage red pots, drinking cups, funerary urns, flower pots, decorative pots and frying or drying pots etc. Olufemi (2014) discloses that, it is Nigeria's most cultural

material that has caught the attention and interest of early British archaeologists. It is one of the crafts of the ancient Nigeria that is still being practiced seldomly in many parts of the country today.

It is difficult to think of an area of modern life that has not been touched by ceramics. Our homes are made from brick walls, held together by cement made from calcium silicates, and glass windows, also made from silica. Inside, the walls are plastered with ceramic gypsum, porcelain bathrooms are decorated with tiles made of clay and talc, and kitchens stacked with pottery and glass have decorative ceramic floor tiles. Clay pipes link our homes to the sewage system and ceramic insulators are essential in connecting them to the electricity grid. Back inside the house, electricity flows through television sets that contain ceramic insulators, components such as capacitors and resistors made from ceramics, computers based on silicon chips, magnetic ceramics used in the electric motors of appliances such as vacuum cleaners and food blenders, and piezoelectric ceramics used in tiny headphones and loudspeakers. Telephone calls and cable television signals may be piped to the home through glass fibers, while other kinds of glass fibers keep heat inside the walls and the roof. The heat may itself be provided by a heated ceramic filament, just as lighting comes from glass bulbs or fluorescent tubes.

The raw materials used in making ceramics are clay and water which are common as well as found throughout the length and breadth of the country. They are not scarce commodity, and machines are not used in its production. However, as new technologies emerge, the raw materials used in making ceramics went beyond clay and water. More advanced raw materials are now adopted in ceramics production in the recent times. Presently, ceramics comprises a much wider range of materials, including metallic oxides, nitrides and carbides. According to Brussel (2012), these materials are used in application areas ranging from household items (porcelain, sanitary wares, art wares) to high-performance tools for industrial use (ball bearings, cutting tools, isolators, catalysts). In addition to their great hardness, ceramics are also resistant to thermal and chemical influences, making them highly suitable for

applications where the product is subjected to high mechanical or thermal stress. Rothmans (2015) stated that, another important factor is the purity of the material, as even slight impurities can lead to rejects during the manufacturing process. Such impurities may not only influence the physical and chemical properties of the product but can also prove to be harmful to the health of the user. Ceramics, with their unique properties and diverse applications, hold the potential to revolutionize many industries, including automotive and semiconductors.

Nigeria is abundantly blessed with ceramic raw materials including alumina, clay, feldspar, kaolin, quartz, silicon, and zirconium which can be found in most parts of the country. It was therefore not unexpected that several ceramic manufacturing industries sprang up across the country in the 70s and 80s. These ceramics industries were flourishing as of that time. This trend was sustained until late 90s, when things started falling apart in this sector. Consequently, most of these companies shut down due to unfavorable manufacturing climate that existed in Nigeria before now.

### **Problem Statement**

Ceramics industries in Nigeria no longer perform creditably well and hence could not play the expected vital and vibrant role in the economic growth and development of Nigeria. This situation has been of great concern to the government, citizenry, operators, practitioners and the organized private sector. Year in year out, the governments at the federal, state and even local levels through budgetary allocations, policies and pronouncements have signified interest and acknowledgement of the crucial role of the ceramics industries in economic development and hence made policies for energizing the same.

There have also been fiscal incentives, grants, bilateral and multilateral agencies support and aids as well as specialized institutions all geared towards making the ceramics industries vibrant. Just as it has been of great concern to all and sundry to promote the welfare of the industries, it has also been a great cause of concern to all, the fact that the vital industries have fallen short of expectation. The situation is more

disturbing and worrying when compared with what other developing and developed countries have been able to achieve with their ceramics industries.

This paper explores the past and present state of ceramics industries in Nigeria. It discusses the causes of the present decline in Nigerian ceramics industries and the proffers measures to revamp the industry. It also converses the prospect of the industries in Nigeria.

### **Brief History of Ceramics**

Ceramics is one of the most ancient industries on the planet. Once humans discovered that clay could be dug up and formed into objects by first mixing with water and then firing, the industry was born. As early as 24,000 BC, animal and human figurines were made from clay and other materials, then fired in kilns partially dug into the ground. Almost 10,000 years later, as settled communities were established, tiles were manufactured in Mesopotamia and India. The first use of functional pottery vessels for storing water and food is thought to be around 9000 or 10,000 BC. Clay bricks were also made around the same time. A major development occurred in the second half of the 19th century, when ceramic materials for electrical insulation were developed. Another advancement was made in the 21<sup>st</sup> century, ceramics is used for applications such as space shuttle tile, engine components, artificial bones and teeth, computers and other electronic components and cutting tools, gas burner nozzles, ballistic protection, nuclear fuel uranium oxide pellets, bio-medical implants, jet engine turbine blades, and missile nose cones just to name a few (Eileen, 2014).

The industry in Nigeria is not all that old, but predates the colonial era and the products then, were limited largely to unglazed, red, water pots and black, cooking pots. Recognizing the importance of the ceramic industry to general industrial development, the colonial government decided to attempt to develop the native industry (Goje, 2006). As a result pottery training centers were established at the centers of major native ceramic pottery operations, i.e. Abuja in the North, Ado Ekiti, in the West, and Okigwe in the East.

### **The Past State of Ceramics Industries in Nigeria**

The emergence and development of ceramic industries in Nigeria were high in the 1970s and 1980s. This was as a result of the boom in the ceramic market, courtesy of the availability of raw materials which were prospected through appropriate and intermediate technology for ceramic production, coupled with the availability of human resources. The fortunes of operators rose. During the period, several ceramics manufacturing concerns sprang up, riding on the back of the nation's abundant solid mineral resources particularly ceramic raw materials such as alumina, clay, feldspar, kaolin, quartz, silicon, and zirconium to produce ceramics.

Some famous ceramics companies then were Modern Ceramics Industry Umuahia, Nigerian- Italian Ceramic product Industries, Ifo, Ondo State, Ceramic Manufacturers Limited, Kano, Eleganza Ceramics Industries, and Richware Ceramics (both in Lagos). These industries played a great role in the country's export earnings (Adewale, 2008). The activities of these firms once held the collective hope and aspirations of Nigerians that the nation's age-long over-dependence on revenue from the oil and gas industry would soon be a thing of the past. The thinking was that the operations of these once vibrant ceramic companies constituted a strategic effort at diversifying the economy. The industries grew faster with the booming property business in tiles, tableware, sanitary ware and electrical sector. Growing market demand boosted development of new factories producing high quality ceramic products.

### **The Present State of Ceramics Industries in Nigeria**

Most past famous ceramics industries in Nigeria have gone into extinction today. A lot of factors contributed to the demise of these industries. The location of the basic raw materials (clay) of different types which often determines the cost of production is affecting the industry. This is because large quantity of the kaolin used in production of ceramic wares were either bought or collected from another area far away from some of the production site. Abiodun and Akintonde

(2013) disclose that good secondary clays which are located along the streams and rivers banks are also bought in large quantity for production because of the stress involved in getting them and harassment from land owners. However, many of these clay depots are recently fast diminishing as a result of urbanization (government and people) constructing roads, drainages and houses on the existing clay depots.

The ceramics industry is a major employment generation and wealth creation sector. But today, few viable domestic ceramics industries in Nigeria are not able to contribute significantly in this direction. Most of the industries do not have professionals with appropriate skill and expertise in ceramics manufacturing business. There is an absence of avenues for people that are interested in ceramic manufacturing business to pursue their ambitions. There is also an absence of training programmes in ceramic science, ceramic engineering, and ceramic technology in universities or polytechnics in Nigeria. Most of the contemporary ceramists lack the knowledge of the chemical and mineralogical compositions, physical and mechanical properties of available local mineral resources. There is none existence of raw material processing plants to feed the local ceramic industries. Thus, with traditional approach and unskilled and untrained workers, the development of the industry cannot be achieved. There are no trained workers to work and supervise the firing of kilns. In some units, the owner himself supervises and manages technical aspects. Machines, tools, kilns, electric power equipments are not of good quality. The size of kilns in some of the ceramics industries are small, hence, after the completion of one cycle it needs to be rested and in the process kiln becomes cool and loses energy. Some of the ceramists who have joined in this industry have no sound educational background. Therefore, with their traditional knowledge and experience they are managing the units with a little success. They are not aware of the modern machineries, scientific and technological methods of production and management practices. Thus, there is no enhancement in the quantity of production, quality of products, expansion of market and the margin of profit.

Inadequate capital for operation also affects the industry. Most of the industries were established during ceramic wares boom of the 1980s and 1990s without putting into consideration the feasible and futuristic financial implication of what they were into. Those who are businessmen among the operators have stopped to invest additional capital. This further incapacitates the industry. Today, a good number of those operating cottage ceramic industries in the country are civil servants, pensioners and fresh school leavers who could neither afford the money to purchase necessary equipment nor have collateral that would enable them obtain loan from banks or related government agencies. Oladapo (2013) states that, inability to produce glazed wares at minimal cost led to the closure of many of the small scale ceramic industries in Nigeria since compounding glazes locally depends on addition of some imported glaze materials and recipes. Moreover, very few among the entrepreneurs and workers in the industry have a good knowledge of how to formulate their own functional glaze. Thus, most of their potential patrons now settle for imported ceramic products which are quite cheaper, better in quality and abundant in quantity. The ceramic industries that still exist limit themselves to few glazed wares with a lot of embellished terracotta wares.

Poor marketing strategies prevent buyers from locating ceramic market. Many of the industries also lack good feasibility study for good and regular market outlet. As a result of these, large numbers of the industries thus, market their products through trade fairs, exhibitions, galleries, shops and few supermarkets. Sometimes they also receive commissions from ceramic merchants and retailers. Their marketing strategies are so poor to the extent that many people across the nation do not recognize their products beyond painted candle stands and terracotta flower vases which they usually bought along road-side in major cities in the State. According to Oladapo (2013), most of the ceramists opined that poor focus and ineffectiveness of ceramists and potters associations also affected the development of good ceramic industries. In the same vein, members could not agree on particular market prices for their products as well as ways to sustain their industries. Importation of ceramic

wares into the country has affected the market for the local ceramic wares as many patrons prefer to buy foreign ceramic products because of good quality. High taxes/tariffs that government is benefiting from imported ceramic materials, equipment and wares is encouraging the importation of ceramic wares rather than promoting the development of local ceramic industry in the country. Many entrepreneurs now prefer importation of ceramic products to establishing local ceramic industries. Nevertheless, there are some grave factors that have caused the present decline in Nigerian ceramics industries.

### **The Causes of the Present Decline of Nigerian Ceramics Industries**

Ceramics industries in Nigeria have been in a declining state in the recent time and many factors are responsible for that. The absence of skilled manpower and industries to process raw materials needed for production of ceramics in the country has prevented the growth of the sector and forestalled a lot of direct and indirect jobs that could be created from local manufacture. According to Ogbeche (2011), most of the ceramics needs of the country are met through imports from Asia and Europe, as several local companies which delved into the industry in the past were snuffed out by, policy somersaults smuggling, absence of skilled personnel and lack of processing firms.

There is a lack of significant number of professionals with appropriate skills and expertise in the ceramics manufacturing business in Nigeria. There is also an absence of avenues for people interested in ceramics manufacturing business to pursue their ambitions, as it seems not many universities or higher institutions in Nigeria offer training in ceramics science/engineering/technology. Ceramic education in the tertiary institutions has not been anchored properly on the self-reliability and quality of service to humanity specified in the Nigeria Policy on Education to produce the desired goals for the nation's economy. Generally, there is no art school in the country that was given solid foundation to meet the industrial ceramic requirement in human resources. Where it was even partially done, it was not maintained, studio space for the practice of ceramics is either inappropriate in size and quality or overtaken by decay. In many cases materials and equipment were

hardly provided for demonstration and students' use.

One of the major infrastructural problems in ceramic production in Nigeria is electricity. Power supply in Nigeria is greatly irregular; it is affecting all other sectors of industrial manufacturing. Incessant power failure is one of the factors responsible for the high cost of ceramic manufacturing in Nigeria. The current power generation capacity in Nigeria is too small and does not correspond with the total energy required in the country.

Government policies in Nigeria have not been stable over time; many economic policies have been adopted since Nigeria became independent in 1960, the economic reform experiments have continued till today. The policies that have negatively affected the small-scale industries in general are the monetary policies, export and import policies, and incessant upward review of petroleum products prices. The liberalization of the economy led to massive influx of cheaper imported ceramic products in the weak domestic markets for locally produced ceramic wares. The local producers operate far below their capacity utilization.

The financial system has further compounded the problem of Nigerian ceramic industries. The commercial banks in the country are generally reluctant to grant loans to Nigerian ceramic industries; they have neglected this aspect of their functions preferring other areas that yield higher and quicker returns due to the following reasons: Banks prefer to lend on short-term basis rather than on a long-term.

High interest rates have made loan facilities unattractive: In Nigeria presently interest rate on loan is not less than 23%. This is huge compared to 3% in Britain, and zero percent in Japan as noted by Ukoko (2005). With such high rates some ceramics industries that could get the loans facilities find it very hard to break even because of high bank charges, even the cost of their products are high when compared to imported ones, which make buyers to shun these goods in preference for the imported ones, invariably leading to the collapse of the Nigerian ceramics industries.

Apparent hurry in establishing these industries without proper feasibility study could also be a

problem for the industries. It is therefore important that feasibility study is undertaken, as this will ensure the substance of these industries, be it in areas of materials and marketing of products and equipment too.

### **Revamping Measures**

Revamping is an act or instance of restructuring, reordering, or revising something. It means to overhaul, patch up or renovate, repair or restore something. It means to give new and improved form, structure, or appearance to a system or a particular sector of the economy. In a bid to revive the declining state of the nation's ceramics industries, a culture of technological entrepreneurship has to be promoted at tertiary institutions in Nigeria. This would prepare students to move away from academic pen-pushing and file moving-careers (including wage paying jobs) to self-employment and employer of labour. Tertiary and research institutions should interface with industries. This would attract the interest of Nigerian Ceramic industries, funds for Research and Development in Nigerian tertiary/research institutes. Also, government is expected to pay attention to power generation, transmission, and distribution to encourage young graduates to go into ceramics production, as this will help to reduce unemployment and improve economic growth of the nation.

Government can initiate efforts at proper funding, co-ordination and control as well as equipping of relevant Research and Development (R&D) of Ceramic Design and technology in tertiary institutions. Non-governmental organizations and private sector can partner with tertiary institutions in training of professionals in Ceramic Engineering Design and Technology with the objective to motivate these institutions. Also, non-governmental organizations and the private sector as a team can provide adequate facilities for research and development in the area of Ceramics Design and Technology. Stability in government policies and adequate enforcement of intellectual property rights will help protect ceramic design and technology research products of industries and research institutions.

The power sector reform should be pursued vigorously as this will encourage the

reactivation of moribund factories, and the establishment of new industries; improve the exploration and appropriate utilization of our nation's abundant natural solid mineral resources. It would also create industrial activities, employment generation and economic empowerment of the citizenry, while the huge import dependence of ceramic product would be reduced. The development and investment in this non-metallic solid mineral-based sector would go towards the much talk-about diversification of the mono-oil economy. In spite of these revamping measures, ceramics industries in Nigeria has some prospects.

### **The Prospects of Ceramics Industries in Nigeria**

Despite all the aforementioned challenges, there are still great prospects for ceramic industries in Nigeria. This could be perceived from the improvement in ceramic education in the tertiary institutions across the nation. Students of tertiary art schools now acquire entrepreneurship and industrial mass production skills unlike in the past when these vital areas were rarely taught. For instance, the introduction of ceramic students to kiln construction and burners' fabrication, glazes compounding and firing, as well as forms and materials technology and mass production techniques has exposed graduates of art schools in various tertiary institution to the industry prerequisite. Many of these students are hoping to establish their own ceramic industries after graduation. Involvement of tertiary institutions' students in the various mass production techniques in some small and medium scales ceramic industries during their industrial training scheme will also bring positive development to the industries in the future. This industrial exposure has also increased the knowledge of these students especially in the area of mass production, product branding, marketing strategies among others.

The growth in ceramic technology is persistent due to interchange of ideas among people who are knowledgeable: ceramists, technicians and increasing number of well-trained ceramic technicians. Different research activities in the areas of formulation of glazes, kiln construction and accessories as well as the use of locally available materials to produce ceramic wares present a

bright future for ceramic production in the country. These research activities will definitely reduce the cost of production and further increase the quality of made-in-Nigeria ceramic wares. Ceramic exhibitions and Trade fairs, public enlightenments and other related initiatives by various stakeholders in the industry will also go a long way in creating more awareness about indigenous ceramics and ceramic industries in Nigeria.

The ceramic industries in Nigeria could become a basic building block for the country's construction and housing sector in the future. This sector could contribute to the country's economic progress through export earnings, foreign currency savings and generating employment. The nation's ceramic industries can overcome the limitations stated in this paper if the aforesaid revamping measures are adopted religiously. The nation's ceramics industries have the potentials to grow and become big foreign exchange earners for the country with its dazzling products in this era of globalization, if there is a total overhaul of the sector in the country.

### **Conclusion**

The exploitation and utilization of the abundant ceramics resources in Nigeria will pave the way for economic empowerment, job creation and technological advancement. Transforming the challenges of the industry to opportunities will strengthen the nation and bring her close to the economically and technologically developed nations of the world. The industry easily thrives where there is an enterprise culture or a business oriented society, that is, a society where the way of life is focused on the importance of individual creating their own wealth through their business. It is clear that many Nigerians, including graduates, are imbued with entrepreneurial potentials yet to be tapped. This necessitates the need for the Federal

government to create the enabling environment, financial and non-financial resources required to make ceramics industries thrive, so that it can absorb as many entrepreneurs as possible. It is quite unfortunate that, the current state of ceramics industries in Nigeria is nothing to write home about. However, all hope is not lost as some measures can be put in place to revamp the declining state of the industry and provide bright prospects for the industry.

### **Recommendations**

1. Government and multinational/financial organizations should invest in developing skilled and trained employees for the ceramic industries.
2. Government should re-introduce the small business credit scheme so that beneficiaries can use them to run ceramics firms.
3. Government, chambers of commerce and other non-governmental organizations should regularly organize seminars for potential and actual ceramic firm operators where they should be educated on how to plan, organize, direct and control their businesses.
4. Ceramists should device effective marketing strategies. This includes such promotional strategies as advertising, good management customers relations at all times.
5. The quality and quantity of ceramics products should be high at all times. This will attract more customers. Besides, ceramists should exploit ways of producing at low costs and selling at relatively low price. This will make demand to be high always.
6. Taxes collected from ceramics industries should be minimal to encourage more potential investors in the sector.

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