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Exploring Islamic Drawings in Contemporary Ceramic Production Technology in Nigeria for Sustainable Development

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Abstract

In contemporary time, a growing number of studies on ceramics production and technology are advocating the need to adopt a holistic approach where ceramic production is considered along with its artistic concerns. The uniqueness and surroundings of their creators serve as inspiration for ceramics, which are essential elements of daily life. Traditional Islamic architecture is characterized by ceramic ornamentation, but there is rising worry that modern aesthetic trends are destroying this legacy. This research examined the value of Islamic drawings on ceramics and discussed the viability of current ceramic technology that can promote sustainable development among underdeveloped nations using Nigeria as a reference point. To achieve the above aim, the article employed the descriptive and phenomenological approaches with the aid of a critical review of relevant literature and personal interviews. In terms of its importance and consequences for socio-economic development, the research showed the feasibility of present Islamic ceramic production and posited that well-decorated or designed ceramics have the potential to support socio-economic development in Nigeria in line with the United Nations' sustainable development goals (SDGs).

Keywords: Islamic drawings, Religion, Artistry, Ceramic, Technology, SDGs, Nigeria

1. Introduction

Ceramics is a vital component of everyday life and an embodiment of science, art, and technology. It draws inspiration from the creators' distinctiveness and the environment in which they reside. By using certain materials and effective techniques, ceramic designers and artists always attempt to develop fresh ways to display their creations. Modern ceramics is heavily influenced by form, and the ceramist likes to write and draw, employing black and blue ink. Despite the absence of appropriate eco-design rules, potters may learn from the sustainable development footprint of the electronics sector. Sketching and drawing are used to give ceramic work a dynamic appearance. New body forms were made possible by technological advancements, many of which were based on a composite substance known as "frit." Over-glaze painting, like that seen on Minai items, was developed in the quest for ever-more vibrant goods (Lu, Huang, & Fang-Lin, 2019). Ceramic decoration or enrichment is one of the distinctive features of traditional Islamic architecture, which is considered one of the best examples of Islamic visual culture. However, there is rising worry that the present artistic changes taking place in the Arab nations and other nations with a heavy presence of Islam are eroding this heritage. Reviving Islamic artery is another form of religious revivalism in a world concentrated with religion (Ottuh, 2023). Among the most vibrant aesthetic achievements of the Islamic world are ceramics, which

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Drawing is a skill that uses knowledge, experience, resources, the past, a peek into the future, and the impact of others. Through drawing, the connection between the body and the hand is shown. Drawing can be seen as an exchange, conversation, or preliminary idea (Robles, 2016). Sometimes keeping secrets becomes the artist's method for creating a more finished and coherent art work. More specifically, drawing is the process of outlining a form using lines, colours, or shading on a surface, typically on a plane. The underlying principles of art remain the same, regardless of the medium used. The first stage in trying to draw from any model or item is to analyze and sketch the main structural lines, curves, and masses. Dots, densely packed lines and cross-hatching are required to convey tints. This article therefore explored the value of Islamic drawings on ceramic production technology and the implication for sustainable development in Nigeria. In analyzing the deterioration of Islamic artistry in the context of modern Islamic ceramic drawings and the subsequent diminution of the utilization of ceramics as a distinctive ornamentation medium, this study examined these concerns. Combining research in the areas of ceramic technology, artistic design, and the advancement of the Sustainable Development Goals, also known as the SDGs, of the United Nations (UN), allowed the study to examine the waning distinctiveness of Islamic visual culture. The adopted research approaches are descriptive and phenomenological. Interviews and the review of relevant literature are the main tools used to achieve this goal. The study demonstrated the viability of current Islamic ceramic production technology in terms of its significance and implications for socio-economic development, among other indicators.

2. Ceramic Production and Technology

Ceramics are non-metallic, inorganic materials that are rendered permanent via burning and include some biological content. They are solid objects constructed of glass, cement, clay, or mud that may be porous, glazed, or unglazed. The foundation of kitchens, baths, and other domestic appliances is ceramic. They are easier to clean, less susceptible to vibrations and scratches, and unaffected by typical home cleaners. Ceramic artwork may even be passed down to future generations since it is long-lasting. Identifying the raw materials used and their preparation is the first step towards rebuilding the ceramics manufacturing process. Fig. 1 depicts the orderly procedure for a completed ceramic product.

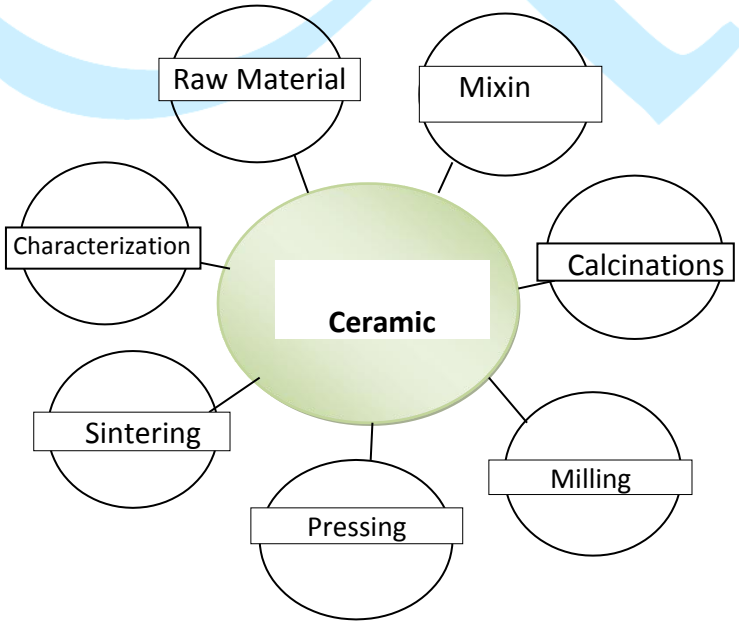

Fig. 1 Ceramic production process (***Source***: Researchers' impression, 2023)

The analysis of both the ceramics life cycle and the craft life cycle takes into account production methods and craft specialization. According to Tite (2008), three reconstructions of early mediaeval pottery from the French Auvergne region have been made, with the most complex being "painted" pottery, which was adorned with slips or pigments in shades of red, cream, white, grey, and black.

Fig. 2 Ceramic cups adorned with slips (***Source***: Adopted from Islamic tiles vectors)

Due to the use of a wheel, ancient pottery production took place in a single workshop as opposed to a household setting. The local environment influences the accessibility of raw resources, as well as the potter's opinion of the clay and the politics surrounding who owns the resource. Cultural impacts should also be considered in addition to material ones. To produce pottery that meets the demands for toughness, toughness, thermal shock resistance, and permeability, a variety of alternate clays, tempers, and firing temperatures can be used. According to Barsoum (2002), ceramics studies need to take a holistic stance where production is taken into account along with origin and use, from the acquisition and treatment of the building ingredients to the firing of the pottery.

Around 10,000 years ago in Japan and 6,000 years ago in the Near East, the first clay containers were produced. By the fourth millennium B.C., wheel throwing was invented in the Eastern Mediterranean (Black & Kohser, 2012). Later technological advances included coated porcelain, glazed stoneware, and stone-paste forms. The earliest known example of pottery created by humans dates to 24,000 years ago, when the Venus of Dolna Vstonice statue was discovered in Brno, Czech Republic. Fragments of pottery vessels from 17,000–16,000 BCE have been uncovered in the Chinese Xianrendong cave. The use of pottery is thought to have spread slowly from China to Japan, where archaeologists have found pieces that date back to 14,000 BCE (Carter & Norton, 2007). Ceramics have a long history in Japan, dating back to 10,000 B.C., but until the invention of the potter's wheel and slant kiln, they were not widely used. In Western culture, pottery is linked to the making and ornamentation of vases, a form of Neolithic art that was common in Ancient Greece (Paynter & Tite, 2001). The development of the wheel, which occurred in 3,500 B.C., made it possible to create ceramic containers with radial symmetry using the propeller technique. Ceramic pottery developed over time, using intricate paintings to become works of art (Carter & Norton, 2007). Europe produced its first blast furnaces in the 14th century, and synthetic materials with improved heat resistance were created in the 16th century (Bayartan, 2008). The ceramics sector has seen a significant transition since the start of the industrial revolution, and by 2030, the market for ceramics is predicted to be close to a trillion dollars.

3. Islamic Drawings and Ceramics

Islam is a monotheistic belief system based on the revelation to Muhammad in the seventh century. Ottuh and & Idjakpo (2022) argue that most African Muslim communities still uphold the essential principles and beliefs of Islam in addition to African traditional practises that do not conflict with or contradict Islamic practises. This is because the emigration of the Islamic religion to African nations did not carry with it the cultural weight of the Arab world (Bernsted, 2003). This eliminates the effect of Arab mentalities. Islamic pottery from the Middle Ages was situated geographically between Chinese ceramics, pottery from the Byzantine Empire, and pottery from Europe. According to Alkandari (2011), the Hadiths forbade the utilization

of food and beverage containers made of gold and silver; thus, glass and earthenware were used instead. At the same time, Islamic regulations banned representational wall painting and promoted the use of ornamental, frequently geometrically patterned title systems in architecture. Muslim troops advanced quickly into the Persian Empire, Byzantium, Mesopotamia, Anatolia, Egypt, and subsequently Andalusia when the Islamic ceramic age began about 622 (Alkandari, 2011; Rogers, 2007). However, the Muslim world inherited substantial pottery industries from Mesopotamia, Egypt, Persia, and the North African continent, and subsequently from other places. The earliest period of Islamic pottery is still opaque and speculative.

Although Islam significantly restricted the use of figurative ornamentation, the majority of these traditions did. Islamic pottery used tile-based design schemes more than any other prior civilization and advanced geometric and plant-based ornamentation to a very high degree (Hattstein & Delius, 2000). From the Umayyad period through the Colonial and Postcolonial periods, the Islamic architectural and pottery traditions and styles had their roots. Glazed ceramics were not considered excellent products before the emergence of Islam; rather, they were useful pots as well as pitchers for storage and transportation. These were allegedly produced in Iraq and then sold worldwide. Islamic ceramic art originated from the same regions that had practised ceramics and other art forms, reflecting the locals' social mores and way of life (Carvajal, 2019). Islamic porcelain from Andalusia was greatly influenced by the designs seen in other Islamic regions of the globe, including white backgrounds, ornamentation, and shine with copper oxide additions. Spain also received ceramic tiles from Iran and Iraq, including from Kashan (Busto, 2020). The most well-known Islamic Fatimid ceramic factory was in Egypt's Fustate, where plates with figurative drawings, planets, and outline colours were produced. Prior to the establishment of the Fatimid dynasty and throughout the Islamic era, the lusterware method was used.

Three different ceramic kinds were produced during the Fatimid period: luster painted goods, North African multi-coloured painted glaze wares, and monochrome glaze wares (Rom, Akintonde &Ayodele, 2006). Islamic art is influenced by geometric patterns and arabesque patterns, which often have a continuous stem with split palmette leaves. The prohibitions on figural portrayal were the cause of this. The constraints set forth by the Islamic interpretation of perspectives on art, design, and architecture are consistent with Islamic culture and philosophy, which are practised in practically all Islamic governments. However, Islamic law forbids the representation of any living thing, whether animal or human, in statues, drawings, concepts, or architectural creations (Department of Islamic Art, 2000). The historical view of Islam serves as the foundation for this notion. The Islamic tradition prohibits the usage of idols and encourages artists to portray and express the real works of God, such as the mountains, valleys, oceans, moon, plants, stars, sun, fruits, and other flora, in all their grandeur (Alkandari, 2011). This illustrates the moral ramifications of idolatry. To gain insight from the past, present, and customs of Islamic art as well as satisfy the demands of the Islamic world of the twenty-first century for which today's artists must be nurtured and inspired.

Muslim artists create Islamic artwork to convey their ideologies. They were originally based on the Quran's textual form, but they have subsequently been assimilated into Islamic culture. The idea was used by Western art historians in the latter part of the nineteenth century (Bloom & Blair, 1995). The employment of plant shapes in a number of spiralling arabesques, like the pomegranate tree, is a distinctive feature of Islamic painting. Because of its distinct appearance and matte texture, canvas paintings are popular; they may be framed and shown on a wall or left unframed and set on a table, and they are strong and long-lasting. Islamic paintings and drawings are employed to create multipurpose eastern rugs and carpets that may be used as prayer rugs, wall hangings, floor coverings, and to decorate buildings. They have a long history and are utilized to create portraits, miniature Islamic artefacts, ornamental tile patterns, and lyrical narratives including moral reflections (Ottuh, Omosor, & Abamwa, 2023). They are also used to create Islamic glass and pottery, among other artefacts. Islamic art refers to the paintings, sculptures, and buildings made in Muslim-majority

countries for Muslim clients or by Muslim artists. According to Ottuh, Omosor and Abamwa (2023), the art and architecture seen across the Muslim world and human societies are a reflection of this particular civilization, which has its own aesthetic and moral languages.

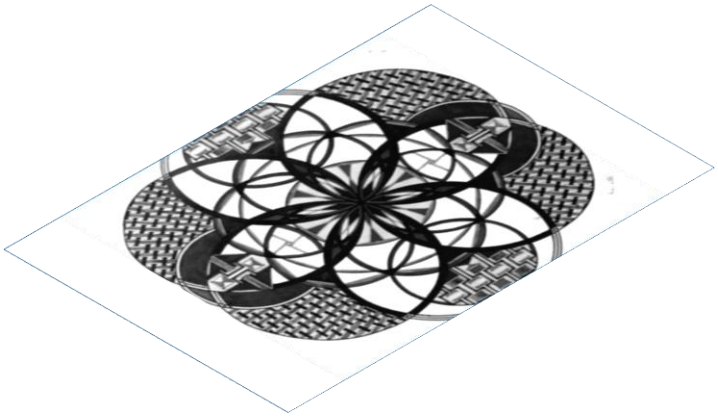

Fig. 3 Islamic ornamental tile patterns (***Source***: Adopted from Islamic tiles vectors)

4. Ceramic Production Technology in Nigeria

According to Ottuh (2023), with 53.5% of the population being Muslim, Islam is one of the most popular faiths in Nigeria. With a sizable Muslim minority in the south, it is mostly centred in the northern part of the nation (Faseke, 2019). Although the rest of Nigeria is ruled by secular law, the majority of Nigeria's northern region is governed by Sharia law. Before the entrance of the Europeans, women in Nigeria learned how to make clay cooking and drinking pots, a craft that has been practised since the country's earliest recorded history. However, because of the Europeans' focus on languages, humanities, law, and public administration, not much progress was accomplished, which delayed the advancement of ceramic and technological education in Nigeria. It is divided into two groups: traditional ceramics, which include porcelain, minerals, stones, clay, concrete, and refractories, and contemporary ceramics. According to statistics, there are over 7,000 ceramic goods sold worldwide (Ojie, 2000; Rom, Akintonde, & Ayodele, 2006). Nigeria is endowed with an abundance of raw resources, including Kaolin, one of the main clay raw materials utilised in the manufacture of the majority of ceramic items.

The majority of the nation has clay minerals, which are the most prevalent and plentiful minerals on the planet. Omojola (cited in Isaac, 2021) listed the basic clay minerals found in Nigeria and claimed that they are abundantly present in most states of the federation. According to him, they include kaolin, feldspar, quatz, limestone, talc, silica sand, cylindrical clay, and bentonite. He further claimed that the states of Abia, Akwa Ibom, Anambra, Bauchi, Benue, Borno, Ogun, Ondo, Kebbi, Kogi, Osun, Imo, Nasarawa, Niger, and Oyo have kaolin reserves. For instance, Nigeria has roughly 800 million metric tonnes of confirmed kaolin resources. Similarly, Nigeria has talc resources totaling over forty million metric tonnes, which are spread over the states of Niger, Osun, Kogi, Ogun, and Kaduna. Talc is also present in almost all of the federation's states. Also, feldspar is abundant in granite and pegmatite rocks in the states of Borno, Taraba, Ekiti, Katsina, Kogi, Ondo, Taraba, Adamawa, Plateau, Nasarawa, Niger, Ogun, and Osun.

As shown by the rising worldwide market for ceramic goods in Nigeria, experts have claimed that the mining, processing, and use of ceramic materials have had a favourable impact on technical advancement and economic progress in the Nigerian nation and many other nations of the world (Isaac, 2021). In the 1960s and 1980s, a number of Nigerian state governments, private investors, and foreign technical partners established various ceramic manufacturing businesses across the country based on the availability of ceramic minerals. During that time, more than 500 ceramic industries were founded, ranging in size from tiny to huge businesses. Earthenware and stoneware items were produced by the industries for both domestic usage and building construction. The industries' high installed capacity utilization at the time made substantial

contributions to satisfying local demands. For instance, the Structural Adjustment Programme (SAP) of 1986, which resulted in the slow closure of several enterprises, had a negative impact on the ceramics sub-sector in Nigeria. Following this, several ceramic goods were imported in large quantities into the nation (Isaac, 2021). As a consequence, the nation, which had a prestigious position in the manufacture of ceramics in the 1960s and 1980s, is currently ranked eighth among the eighteen growing countries engaged in the production of ceramics internationally.

Nigeria is now the only one of the 18 nations that does not export ceramic goods. According to Omojola, there are now just nine ceramic manufacturing enterprises in Nigeria, eight of which produce ceramic tiles, and one of which produces ceramic sanitary equipment. Because many consumers choose to purchase items created elsewhere, the importation of ceramic products into the nation has had an impact on the growth and market for locally produced ceramic products in Nigeria (Egonwa, 2007). Dealers in ceramic goods currently favour importation over the development of local ceramic enterprises. As a result, the nation imported ceramics valued at over $800 million in 2018 and over $900 million in 2019 (Omojola cited in Isaac, 2021). By 2025, it is anticipated that Nigeria will import $2.1 billion worth of goods. The ceramics sector in Nigeria has tremendous development potential with a vast projected market.

5. Significance of Islamic Decorated Ceramic

All forms of art or drawings are found in Islamic ceramics or pottery. In this sense, they have the potential to improve human moods, bringing up feelings of joy, serenity, or even inspiration. Sculptures are frequently used in parks to enlighten visitors and create interest. Wall posters, for instance, provide inspiration and information. Through Islamic art, one gets meaning and a better understanding of the Islamic world. Research has shown that enjoying Islamic art enhances one's level of happiness and helps one feel good at all times (Nigosian, 2004). When Muslims do art, they feel better and are better at solving problems, including being more receptive to new ideas. A crucial component of every civilization is Islamic art. Muslims are shaped by art in a variety of ways, and figurines (or ceramics) are a prime example of this. Because they may be utilized in a number of contexts to highlight beauty and ingenuity, ceramic sculptures are immensely popular. These statues exhibit more than simply the subject matter they show; they demonstrate the craftsmanship used in their creation. The significance of well-decorated ceramics has contributed to cultures all around the world, as well as shaped their development over time.

One of the most ancient and popular Islamic ornamental arts is pottery, which consists of items made of clay that have been heated to a solidified state and then well decorated with multiple drawings. Commonly, helpful items like bowls or plates with meaningful drawings or decorations from which meals can be offered or receptacles for holding liquids are manufactured. The study of pottery is crucial to understanding society and re-creating the past, with the drawings on it adding meaning. With the development of diverse cultures, ceramic styles and design patterns changed. This represents the social, economic, and environmental circumstances in which a civilization flourished, aiding researchers and historians in comprehending the past. Islamic pottery or ceramics with their multiple drawings or designs often reveal details of daily life, such as clothing, religious rituals, eating habits, and now-lost versions of myths that were once well-known (Burckhardt, 2009). Such designs or drawings have the potential to date archaeological sites, reveal long-forgotten trade links, show the evolution of art within Islamic cultures, and reveal details of clothing and religious rituals. During the pre-Islamic era, the majority of luxury vessels with their traditional designs were made of precious metals like gold and silver, while pottery wares were mostly utilized for functional purposes like storing food and water, which the scheme also provides, and cooking (Kuiper, 2010). On the other hand, expensive ceramics were popular throughout the Islamic world because people prized them for their aesthetic value and accessibility. Muslim prohibitions against men carrying gold containers may help to explain this incidence. It is also conceivable that the need for luxurious goods at affordable prices led to the development

of increasingly intricate ceramics. Well-adorned ceramics produce things that are both inexpensive and opulent, among them are pots adorned with drawings.

Fig. 4 Drawings on pots (***Source***: Adopted from Islamic calligraphy on clay pots, 2023)

Beautiful and useful Islamic works of art that provided value for money in eye-catching appeal and dependability were available for regular use. A trend that endured in Iran in the thirteenth and twelfth centuries and peaked during the Achaemenid Empire period (1501–1722), when ceramic materials were generally recognized as desirable luxury goods to give as gifts, left an enduring impression on Islamic pottery. For instance, in 1609, the Safavid king Shah Abbas sent 835 pieces of Chinese porcelain to the shrine of Shaikh Safi, the dynasty's spiritual founder, in Ardabil, Iran (Haertling, 1999). This action highlights the Safavid court's prominence of Chinese porcelain as a prized luxury good and the material's use in ceremonial gift-giving. The design and craftsmanship of the ceramic pots made by ancient civilizations are commonly used by archaeologists to identify and date them. Ceramic patterns and drawings can reveal details about the environment in which they were produced. For instance, Minoan ceramics from Crete are typically divided into four separate periods, each with a number of sub-groups in the late period. The frequent use of dolphin and sea creature drawings or patterns on Minoan marine-style ceramics suggests that the people of that time had a strong nautical culture (Haertling, 1999). They combine beauty and functionality to great effect. In addition to being well-designed and produced, artwork that is socially conscious and environmentally sustainable is gaining popularity among artists. Many Islamic artists have developed methods to increase the longevity of their work. Thus, ceramics are significant because they offer a means of artistic expression and aesthetic enhancement. They are excellent gifts when one wants to give his or her family or friends something special without going over budget.

6. Improving Islamic Drawings on Ceramics

Some ceramicists view a drawing or a design as the blueprint on paper that guides the creation of a physical thing. Others experiment with a line using recycled or discovered objects, which will then show up in space. Others replace pencils and ink with basic drawing materials like clay, glaze, and oxide. Drawing and crafting cannot be viewed as incidental or relegated to the margins of modern practise (Robles, 2016). Looking, seeing, thinking, and creating are all essential and fundamental components of conceptual communication. These objects aim to inspire and enlighten humans by considering clay sculptures as artworks of drawing and process. Sometimes, one may have the privilege of witnessing the sketching process of makers in its broadest sense when it is possible. A large portion of these emerging makers use technology in the drawing or building of their pieces. There is a feeling of the machine—a skillful and appropriate use of technology that does not seem to overwhelm the hand. Is it not essential that there appear to be a spirit of inquiry, searching, experimentation, and respect for both the setting and the subject matter. In the same way that humans accepted technologies such as an electrical spindle or industrial slip-casting techniques, they should not be afraid of drawing things with a 3D printer. Understanding the process is crucial in order to comprehend and take advantage of the opportunities. Instead of what the artists have tried and tested, the materials and works created aim to demonstrate what can be pulled out of this process. In contemporary time, there are several drawing techniques ceramic artists employ to decorate various types of ceramic. These drawing

techniques on ceramics, which are discussed below, include combing, impressing, paddling, fluting, faceting, hakeme, and sgraffito, among others. Here, we argue that these popular methods of ornamentation or decoration used on ceramics today can improve Islamic drawings on ceramic.

One of the oldest and most popular arts is ceramics. Both design and function vary greatly across time and civilizations, with possible uses ranging from domestic to decorative to ritualistic to pure creative. The majority of this ornamentation is applied prior to firing and will typically last longer and withstand heavy use. To decorate the pots, knobs or coverings can be formed and affixed, or textural designs can be imprinted using roulette. The survival of regional pottery in Africa is important due to first-world nations engaging in self-sustaining projects. Workshops are set up to help potters reach a tourist market or manufacture a high-quality item with unique attributes and the potential for a high return on investment. Individual artists create highly collectible studio wares, such as Ladi Kwali, who was one of the first sculptors to receive acclaim on a global scale. Paintbrushes and combs are used to adorn pots, and finger swipe marks are particularly beautiful to own. The damp slurry that might accumulate on the outside of a tossed pot is removed by cutting off the outer layers.

Fig. 5 Decorated pot showing combing technique (***Source*:** Coastal Decoupage Terra Cotta Pot, 2022)

When clay has dried to a leather-hard state or is still moist on the wheel, faceting is the act of removing strips of the pot's exterior with knives, razors, or coiled wire tools. Fluting is a different type of faceting that uses long, typically thinner, significant cuts with a bevelled edge or wire. Fluted cuts typically use glaze pooling and natural shadows to create differences on a pot's surface. Fluted cuts are concave and recessed into the pot. Although Japanese ceramics have used the hakeme technique for centuries, Korean potters originally invented it. A dried straw brush is used to delicately apply white slip to a pot's surface. On rounded forms, such as the inside of a dish or the exterior of a yunomi, the effect is very attractive, like the one shown below.

Fig. 6 Decorated pot showing hakeme technique (***Source*:** Coastal Decoupage Terra Cotta Pot, 2022)

Using an instrument or tool to press into a pot's surface and create a relief pattern in the clay is known as impressing. One of the most popular methods of ornamentation or decoration used in studio ceramics today is impressing, which is often done when the ceramic has dried to a leather-hard consistency. To form the surfaces of their pots, potters can either mould and fire their own clay stamps or utilize common items like string, rope, leaves, feathers, and shells. Another drawing technique on ceramics is paddling. Paddling pottery drawing includes adorning raw clay surfaces with wood panels or paddles that have patterns carved onto them (Dickson, 2014). One hand maintains control of the pots while the other vigorously slaps the ground

with the paddle to create a geometric pattern. Paddling also does a great job of collecting glaze in the raised parts of the design, which gives the whole pot a beautiful contrast.

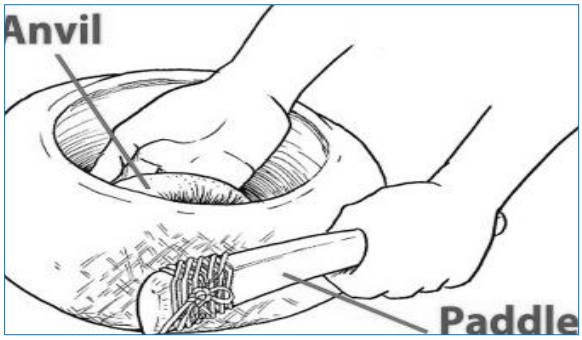

Fig. 7 Ceramic decoration showing paddling method (***Source***: Adopted from GoldmMark Arts, 2022)

Fig. 8 Ceramic decoration showing impressing patterns (***Source***: Adopted from GoldmMark Arts, 2022)

Sgraffito is the technique of slicing and carving an image or design into a pot's surface, frequently through several layers of slip (Fjeldsted, 2019). With sgraffito, the decoration frequently happens after the slip has started to stiffen or has even hardened fully, in contrast to slip combing, when the slope is typically removed while still relatively wet. Slip-trailing is the process of putting slip on the surface of a pot to make a design or picture.

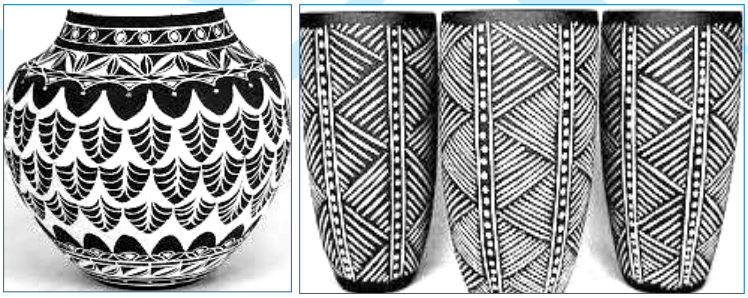

Fig. 9 Ceramics showing sgraffito decoration techniques (***Source***: Adopted from GoldmMark Arts, 2022)

Today, the slide can be squeezed out using commonplace items like rinsing solution bottles or trailing bulbs. The technique's adaptability also gives modern creators a lot of leeway to create a range of spattering, spraying, and dribbling effects. The insoluble nature of wax and its ability to fend off water-based glazes and slips are the foundations of wax-resist decoration. Even before pots are wiped with or covered in their slip or glaze, wax is used to create a motif on the surface of the pot. Latex layers that are peelable have been used as wax substitutes more recently.

7. Implications of Islamic Drawings on Ceramic for Sustainable Development

According to Ottuh, Omosor and Ihwighwu (2022), by 2030, the seventeen sustainable development goals (SDGs) of the United Nations hope to ensure that everyone may live decent lives in a healthy environment. The SDGs, which are comprised of 169 related targets, have been ratified by 193 of the UN's member states

and are intended to solve a number of the most important concerns of our time, like poverty, environmental degradation, and a lack of access to clean water (Ottuh, Omosor & Ihwighwu, 2022). The SDGs have been promoted by corporate networks and individual firms in a number of nations, proving to consumers their adherence in an integrative manner to the various facets of sustainable development as a factor underlying ethical commercial practises and competitiveness. The 2030 Agenda is a global framework and standard for assessing commitments to many areas and topics of economic, social, and environmental sustainability. It applies to all tiers of government, businesses of all sizes in all industries, as well as civil society. The 169 objectives and the 17 SDGs share a number of traits, including being adaptable to businesses of various sizes and industries, having a global and local scope, and being measurable using the right metrics and indicators. They incorporate fresh ideas and address contemporary issues like the circular economy, resilience, smart cities, new architectural styles, environmentally friendly production and consumption, research and education, inclusion and social innovation, high-quality training, worker wellbeing, and climate change initiatives (Ottuh & Ugbah, 2021). The SDGs offer many opportunities, such as better management, better relationships, a better reputation for a brand, new services, less risk, employee or supplier/customer engagement, new partnerships, commercial differentiation, and alignment with financial ratings about the effects of economic, social, and environmental sustainability.

Sustainable production chains aim to enhance business models by giving the products that are produced more economic and social value. According to Ottuh and Ugbah (2021), businesses and governments from all over the world are working to develop laws and regulations that make it clear that they will use biological and material resources in a manner that supports a more sustainable approach to business. Sustainable production chains take into account adjustments and/or reorientations of productive systems that are necessary or have the potential for entrepreneurship, resulting in a reduction in the negative effects on social sustainability, the creation of jobs and revenues, or economic sustainability, and the preservation of urban and rural character traits, or spatial sustainability (Ekong, 2007). In order to manufacture, market, and distribute a product that is competitive and sustainable, a series of steps that include scientific understanding, inventiveness, and a conceptual framework for understanding or tacit knowledge are required. Due to the globalization of markets, an increasing number of businesses are working to develop technology tools that can track products in order to meet the demands of a consumer base that is becoming more and more concerned with the sustainability of production methods. It is extremely difficult to develop tracking mechanisms that show the paths and organizational structures of the production or assembly cycle, starting from the extraction of raw materials and ending with the ultimate customer. However, these activities include behaviours and outlooks that signify a sustainable technological improvement for the sectors of the global ceramic production hubs. Accordingly, sustainability can become a motivating factor for strategic advantage in resource-based businesses like the production of well-designed ceramic tiles (Fajuyigbe, 2011). These industries can be thought of as fully grown industrial sectors because they are made up of complex materials from a wide range of economic actors and because most progress is made at network integration points rather than within individual companies.

Sustainable production is essential for the environment, society, and the ceramic industries specifically. Sustainability may help nations make significant financial savings in terms of power, energy, water, and raw materials. It can also serve as an incentive to recruit the most qualified employees who are more interested in working for a purpose than merely making money. Doing more with less is only one aspect of sustainable consumption and production; other aspects include supporting sustainable lifestyles, separating economic development from deterioration, and improving resource efficiency. It can make a significant contribution to reducing poverty and facilitating the shift to low-carbon and environmentally friendly economies. According to UNESCO, protecting cultural heritage and ensuring future generations may use it is a

goal in and of itself (cited in Ettinghausen et al., 2001). Crafts like ceramics, which are currently seeing a surge in popularity, can also significantly aid in reaching development objectives (Gudowska, 2020; Hosagrahar, 2017). Recent studies compare a sustainable economy to a real-world economy, which is associated with improving products and honing personal abilities (Florentino et al., 2020). Value-based economics contends that understanding the cultural significance of transactions is just as important as understanding their financial implications. This concept is equally compatible with a modern perspective on craftsmanship or ceramic production. Especially in underdeveloped nations, well-designed or well-decorated crafts or ceramics have a lot of potential to help sustainably develop those nations. In order to obtain access to new, profitable, and sustainable markets, it may collaborate with information and the information revolution. The work of art is information and therefore promotes information dissemination in human society.

The Goals for Sustainable Development can be implemented with the help of sustainable and inclusive economic growth. Ceramic labour is more expensive in poorer nations than it is in prosperous ones. When compared to producers based in France, Denmark, or Great Britain, handmade goods produced in Pakistan or India can be purchased for a significantly lower price, even when long-distance shipping, customs, and commissions are taken into account (Settembre-Blund et al., 2019). Industry, innovation, and infrastructure, which are sustainable development goals 9, have not advanced quickly in underdeveloped nations. It will be extremely difficult for behind-the-curve nations to double the GDP contribution of the manufacturing sector by 2030. Islamic drawings, designs, and styles are undoubtedly influenced by craftsmanship, but they are also straightforward fixes that can be automated for industrial production. One of those industries that strongly support sustainable consumption and production is arts and crafts. The activities of Islamic pottery or ceramic artists are becoming more evident, and craft workshops typically operate on a small scale. The conscientious customer wants products to be manufactured by hand or with basic tools from materials that are safe for and beautify the environment and people. The 2030 Agenda for sustainable development (SDGs) of the UN, with a concentration on arts and crafts, is to be achieved by 2030 (Sancassiani & Lab, 2022). Crafts such as ceramics that are well decorated are becoming increasingly popular among some of the middle class as a leisure activity and are exerting a significant influence on consumer choice. If the economy is in a slump, if there are problems in the tourism industry, if companies go bankrupt, or if the economy stops working, the position of creative craftsmanship may seem very different.

The ceramics market in Nigeria has tremendous development potential, particularly outside the tile industry. Nigeria is the most alluring location in West Africa for new investment from abroad; however, there are a number of obstacles preventing the growth of a modern ceramic industry, including the high entry barriers of a highly capital-intensive sector, the infrastructural deficit, and the requirement to train skilled labour. In Nigeria, the ceramics industry plays a significant role in job creation, economic growth, and foreign exchange production. The federal government can put plans in place to improve collaboration with stakeholders in the ceramics industry in the areas of capacity development and public-private partnerships for the establishment of a catalytic plant for ceramic goods in Nigeria. In order to introduce policies that would accelerate the growth of the ceramic industry, the council is collaborating with the tariff boards and other pertinent organisations (Ekong, 2007). Through increased financing, transparent rules, and appropriate connections between the institutions involved and industry, the government and business sector should enhance the standard of ceramic products. As part of the plan to attain the sustainable development (SDGs) of the UN, a culture of technological entrepreneurship should be encouraged to help in transiting from just academic pen-pushing and file-moving occupations to independent practical businesses and employers of labour. Apart from the traditional Islamic techniques, there could be more novel ways to improve Islamic drawings on ceramics to make them more attractive. Discussed below are a few suggestions.

8. Conclusion

The study investigated the importance of drawing skills in ceramics and showed the sustainability of present production techniques and technologies. It demonstrated that potters can make and burn their own ceramic stamps or perform their drawings or patterns using everyday objects. It also concluded that underdeveloped countries, with the production of well-adorned ceramics as a craft, have a lot to support sustainable development. Ceramics with elaborate decorations create items that are both affordable and sumptuous. Painting that seems to be socially responsible and environmentally sustainable is becoming more and more popular among artists, in addition to being well-designed and created. Because they provide a means of artistic expression and aesthetic improvement, ceramics are important. Art or ceramics has a lot of potential to support sustainable development, particularly in developing countries. Craft shops normally function on a modest scale, and the activities of potters and ceramic artists are becoming more and more promising. With a focus on arts and crafts or ceramic production practises and technology, the UN's 2030 Agenda for Sustainable Development (SDGs) can be met by 2023. Significantly, ceramics as a craft has a great deal of potential to contribute to sustainable development, particularly in developing nations. Furthermore, researchers can envision how traditional ceramic designers create their pieces, from conception through manufacture and presentation—this is a motivation and gap that needs further research. Thus, future research can focus on the study of Islamic ceramic decoration employing assemblages and analyzing its implications for technological progress.

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