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Reviving pottery enterprise: An impetus to poverty alleviation and self-reliance among women folks in Ilorin, Kwara State, Nigeria

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Abstract

The study was conducted in peri-urban area of Ilorin Township to describe the socio-economic characteristics of pottery households, determine its profitability as a means of generating income, and reduce poverty in the study area. Primary data were generated through field surveys from a total of randomly selected 80 pottery household heads from 3 selected settlements. The main tools of analysis include descriptive statistics, gross margin and ordinary least square regression models. Majority of the pooled potters (82.5%) had subsidiary occupations with average yearly off-farm income of ₦15, 000 ($93.8) ranging from ₦8,500.00 ($53.1) to ₦38,000.80 ($237.5) per year. The average gross margin per pottery household per month ₦11,000 ($68.8) showed that the enterprise is profitable. The coefficients of potter's experience and cost of family labour carried *a priori* signs and the postulated explanatory variables explained about 56.8% in the variations of net income of pottery households. It is suggested that the pottery households should be given adequate training using community based informal education, to enable them imbibe mechanized pottery techniques and acquired materials inputs that will increase not only the profitability of the enterprise but also make efficient use of resources.

Keywords: Four to eight keywords come here. Divide the keywords by semicolon.

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1. Introduction

Several studies (Olaoye, 1989; Oladimeji, 1999; Aremu and Adeyemi, 2011; Oladimeji, 2013a) have rather persistently called for modernization of traditional crafts, small and medium scale enterprise as a means of developing indigenous technology in Nigeria. Their relative importance in advanced and developing countries has led and would continue to lead to a reconsideration of their role in the economy of the nations. The development of developed and developing countries are measured by such indices as the level of industrialization, urbanization, provision of employment for active labour force, per capital income, reduction of gap between rich and the poor and citizens' welfares (Aremu and Adeyemi, 2011).

Pottery, an ancient indigenous technology can be found virtually in all major cultures of the Northern part of Nigeria, but the processes still remain local and archaic, and that cannot serve as a useful means of commercial production of households' utensils. For long, particularly during the pre-colonial era and even now, Nigeria local pottery households are traditional and major producer of utensils such as variety of cooking pots, water container and local ceramics to rural and peri-urban households.

It suffices to note that clay earth is the major raw material needed in pottery production. Clay is essentially fine-grained, earthy materials that become plastic and tenacious when moist, and they become permanently hard when baked or fired (Velde, 1995). It may be composed of mixtures of clay minerals and clay-sized crystals of other minerals such as quartz, carbonate, and metal oxides. They are commonly formed either as products of the chemical weathering of pre-existing crystalline rocks and feldspar minerals, particularly in warm tropical and subtropical regions of the world or as a result of the hydrothermal alteration (Ojo et al., 2014).

Clay soil supply essential mineral elements to both arable and permanent crops for their growth and have been found valuable for their mechanical properties (as ceramic constituents), including strength, durability, and hardness. Clay and other earthy materials also have important uses in making of tiles, local household utensils, ceramic, aerospace, biomedical, construction, and nuclear industries.

1.1. Statement of problem

In the early stages of China, Japan and United States of America industrialization, their economy were dominated by indigenous crafts and technology with low capital investment and high labour intensive practices, and low productivity. Nigerian communities are rich in a wide variety of crafts which possess great technological value. Some of these crafts include pottery, weaving, blacksmithing, soap-making, leather-work, canoe-building, caning and sculpturing (Olaoye, 1989).Others include garment making, dyeing and bleaching; carpentry and joinery; painting and decoration; visual arts, building construction and catering craft. In the nineteenth century, most of these crafts developed into extensive industries particularly in most developed countries and a few developing countries such as China, Malaysia and India. Afigbo and Okeke (1985) observed that the manufacture of textile for weaving apparel is long established in Igbo culture, similarly pot making in the Northern region was recorded as an important nineteenth century occupation of the Gwari and

other tribes (Thomas-Emeagwali, 1988) as sculpture and dyeing were common in the South-western region of the Nigeria.

However, with emergence of modern technology and lack of values for our tradition, most of these crafts that would have been developed into crucial technological sectors are still rudimentary and not well explored. Oladimeji, (2013a, p.3809) states that ''local crafts are fading away like all other artisans and crafts as well as small and medium enterprises native to the country''. However, pottery enterprise has multiplier impacts on domestic and technological development if properly harnessed. Therefore, reviving the local crafts, agriculture and indigenous technology including pottery offers an unexploited succor capable of salvaging the people from chronic and transient poverty (Oladimeji, 2013a). According to Aremu (2004) in Aremu and Adeyemi, (2011, p. 200), the small and medium scale industry include pottery enterprise is believed to have contribute to Nigeria's growth and reduction of poverty and unemployment. Hence, utilization of such enterprise in Nigeria has numerous benefits viz. equitable distribution of income, self-reliant and entrepreneurial development among others.

The problem of flow of advance and improved western industrial products at the expense of local technology give pottery little room to improve on their products in accordance with modern appropriate technology innovation. The bulk of women households have neglected the locally made pottery products for foreign products due to poor quality of the products that are produced by the enterprise. The situation has made the pottery to seldom engage in the practice base on the demand of the product from individual customer. It is often stated that development of local technology for developing small scale industry such as pottery would lead to rapid development of complex technology industries (Okopo and Ezeadichie, 2003, in Oladimeji, 2013a).

Therefore, the objective of this paper was to:

1) examine the structure and socio-economic characteristics of pottery households;
2) examine its relevance as a means of generating income and reduce poverty; and
3) describe possible transformation process to enhance its survival and competitiveness

2. Material and methods

2.1. Description of the study area

The study was conducted at Dada, Okelele and Karebu pottery settlements in Ilorin East Local Government Area (LGA) of Kwara State (Figure 1). Clay has been major source of raw materials for local construction and pottery (ceramic) enterprise for decades among the bulk of households in the study area. The clay are sourced from peri-urban settlements at Dada and Akerebiata areas; both are situated in the north-eastern part of Ilorin Township along Shao-Malete road nearthe Sobi Ridge. The study area falls within Ilorin sheet 223NW (1:50,000) (GSN) lying between longitudes 4°30' to 4°37' and latitudes 8°27' to 8°32'.Pottery product is clay that is chemically altered and permanently hardened by firing in a kiln (see Figure 4d).

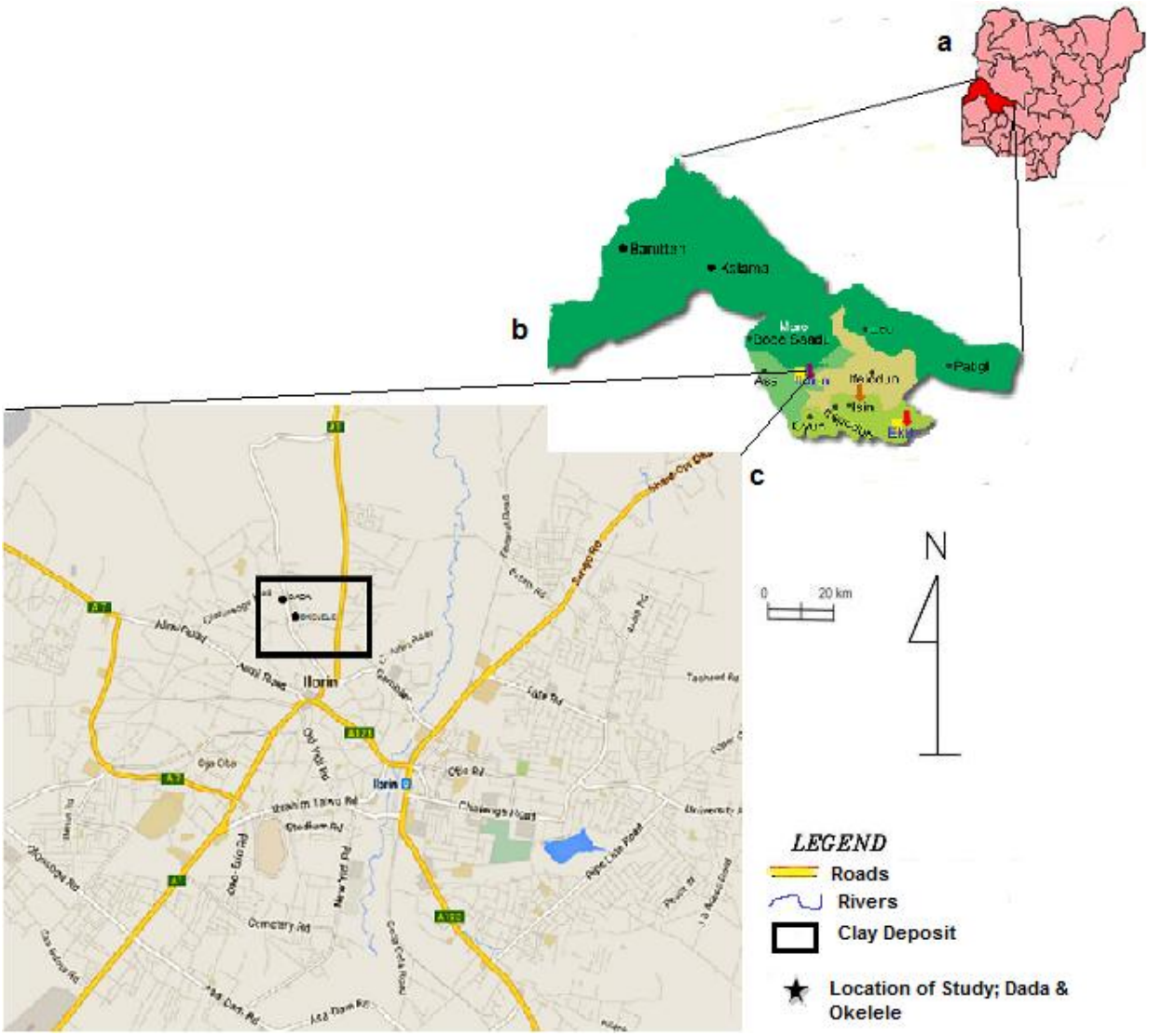

Figure 1. Map showing the location of the study area; (a) Map of Nigeria indicating Kwara State [Source: Wikipedia, 2014 (www.wikipedia.org)], (b) Map of Kwara State indicating local governments and (c) map of parts of Ilorin showing the study area [modified from Google earth map, 2014 (www.google.com)]

2.2. Sampling procedure and data collection

Primary data which was subjected to a pre-survey were used for this study. Pottery workshop survey provided the basic cross-sectional data from randomly selected80 pottery households in Ilorin East LGA, a peri-urban settlement:viz. Dada, Okelele and Karebu communities. Data were collected from the pottery households with the aid of structured questionnaire and interview. A simple random sampling technique was

used to select 80 pottery households used for this study. The questionnaire was administered to the pottery households to generate information on socio-economic and demographic characteristics. Others include information on structure and production pattern, quantities and acquisition of inputs, products produced and their value in Naira.

2.3. Analytical techniques

Descriptive statistics were used to describe structure, socio-economic and demographic characteristics of pottery households. Gross-margin analysis provides the profit index and household income of the potters in the study area. Profit maximization is the most important goal of artisan business. Profit is generally described as the difference between Total Revenue *(TR)* and the Total Variable Costs *(TC)* as seen in equation 1 and 2.The model for estimated Gross Margin (GM) analysis was represented by;

$$GM = \sum P_i Y_i - \sum P_{xj} X_j \qquad (1)$$

where: GM = Gross Margin (₦); $\sum P_i Y_i$ = Gross Income and $\sum P_{xj} X_j$ = Total variable cost.

Pottery labour was standardized with adult female member of household having one labour day for working average of 8 hours while grown up child, about 15 years was also assumed to have contributed 0.5 labour day for all kind of pottery operations. The gross margin analysis was used with assumption that fixed costs in small scale pottery production are negligible. The average monthly gross income per household was expressed in implicit form as equation 2 and explicitly in equation 3.

$$GM = TR_{ij} - TVC_{ij} \qquad (2)$$

$$GM(TN)^{-1} = \sum_{I=1}^{M} \boldsymbol{TR_{IJ}}) \left(\sum_{I=1}^{M} \boldsymbol{TN_{IJ}}\right)^{-1} \left(\boldsymbol{M_J}\right)^{-1} - (\sum_{I=1}^{M} \boldsymbol{TVC_{IJ}})(\sum_{I=1}^{M} \boldsymbol{TN_{IJ}})^{-1} \left(\boldsymbol{M_J}\right)^{-1} \qquad (3)$$

where:

GM $(TN)^{-1}$ = Monthly gross income per pottery household in the jth settlement (₦); TR_{ij}= Total sales revenue accruing to the ith pottery household (₦); TVC_{ij} = Total variable cost incurred by the pottery household (₦);TNij = Products produced by the ith pottery household (tons) and Mj = Total number of households in the jth study area.

Other profitability ratios such as the profit margin (PM), gross ratio (GR) and rate of return on investment (ROI) were also computed as:

$$PM(\%) = \frac{\text{gross margin}}{\text{grossincome}} * 100 \qquad (4)$$

$$GR(\%) = \frac{\text{total variable cost}}{\text{gross return}} * 100 \qquad (5)$$

$$ROI = \frac{\text{gross income}}{\text{total variable cost}} \quad (6)$$

It suffice to note that household size was adjusted to adult equivalent using Organization for Economic Corporation and Development (OECD) Scale adopted by Etim and Ukoha (2010); Oladimeji, (2013b) as follows;

$$AE = 1 + 0.7\,(N_{1adult} - 1) + 0.5N_{2children} \quad (7)$$

where, AE represents adult equivalent, N_1 represents the number of adult aged 15 and above and N_2 is the number of children aged less than 15.

2.4. Model specification and estimation

Estimation of the factors influencing net income of pottery practices involved the use of Ordinary Least Square (OLS) regression techniques and specified by:

$$LogY = \beta_0 + \beta_1 LogX_{1ij} + \beta_2 LogX_{2ij} - \beta_3 LogX_{3ij} - \beta_4 LogX_{4ij} + \mu_i \quad (8)$$

where: Y_{ij} = Net income of the pottery households in the jth settlement (₦); X_{1ij} = Potters experience of the ith pottery households (years); X_{2ij} = Number of standardized clay materials and equipments owned by the ith pottery households; X_{3ij} =Cost of family labour by the ith potters (₦); X_{4ij} = Level of education/training by the ith pottery households in the jth settlements; μ_i =error term associated with data collection from the ith pottery households which was assumed to be normally distributed with zero mean and constant variance. β_0 is a constant and β_1- β_4 are regression parameters that were estimated.

3. Results and discussion

3.1. Socio-economic characteristics

The results in Table 1 revealed that pottery household heads in the study area are all females (100%); average age of 55 years and married (97.8%) with mean household size of 9 and adjusted size of 7. If old potters are defined as those who are above 60 years of age, 68% of them can be said to be above productive age which was a clear indication that the enterprise is tilted to old people, and they may not be able to imbibe new ideas and innovations to enhance increased productivity in the pottery enterprise. The estimated mean years of schooling of pottery heads were 0.7 years, largely skewed towards the informal education and fell below 2011 UNDP mean education index of 5 years for Nigeria (Table 1). This reflects a low level of education by pottery headed households, although an important component of household feature to improve the quality of life. The average monthly income from pottery enterprise summed up to ₦12,500 ($78.1) which shows positive contribution to pottery household's welfare.

Table 1. Dominance indicator of some Socio-economic variables of pottery households

Variables	Dominance indicators	Mean	Std dev	CV(%)
Gender (sex)	100% female	-	-	-
Age (yrs)	90% above 50 years	55	6.2	11.3
MMM Marital status	95% were married	-	-	-
Level of Education (years)	88%, no formal schooling	0.7	0.2	28.6
Potters' experience (years)	About 80% had up to 20 years	25	5.5	22.0
Household size (persons)	75% had adjusted size of 6-9	7	2.4	30.0
Average income/month (₦)	52% earned <₦10,000/month	12500	3400	27.2
Off-pottery income/year (₦)	79% had<₦20,000/year	15000	4500	30.0
Subsidiary occupations	54% engage in firewood	-	-	-
Expenditure (₦)	74% below 2/3 monthly			

Source: field survey, 2013; Note: ₦, Nigeria currency Naira and 1US$ = ₦160 during field survey
** CV = Covariance of variation*

Majority of the pooled potters (82.5%) had subsidiary occupations with average yearly off-farm income of ₦15,000 ($93.8) ranging from ₦8,500 ($53.1) to ₦38,000.80 ($237.5) per year. This shows that the rural artisanal potters have developed capacity to cope with increasing vulnerability associated with pottery making such as diversification and migration. Further analysis revealed that the bulk 57(95%) of the pooled pottery households operate on a family unit bases that is, the pottery household prefer sole proprietorship. This perhaps explained why the majority operate on a small scale basis in the study area.

3.2. Structure and process of pottery enterprise

Dada-Okelele pottery is an important and most predominant enterprise among women folks in the study area. The enterprise is a traditional occupation mostly restricted to women folks and spans over the whole year. During the dry season, most pottery households prefer to engage in firewood business which accounted for 54% of their subsidiary occupation (Figure 2). The enterprise relies heavily on the use of impoverished and locally made tools which include clay materials, small pestle, temper, clay bat, old mortar, woven cloth and calabash.

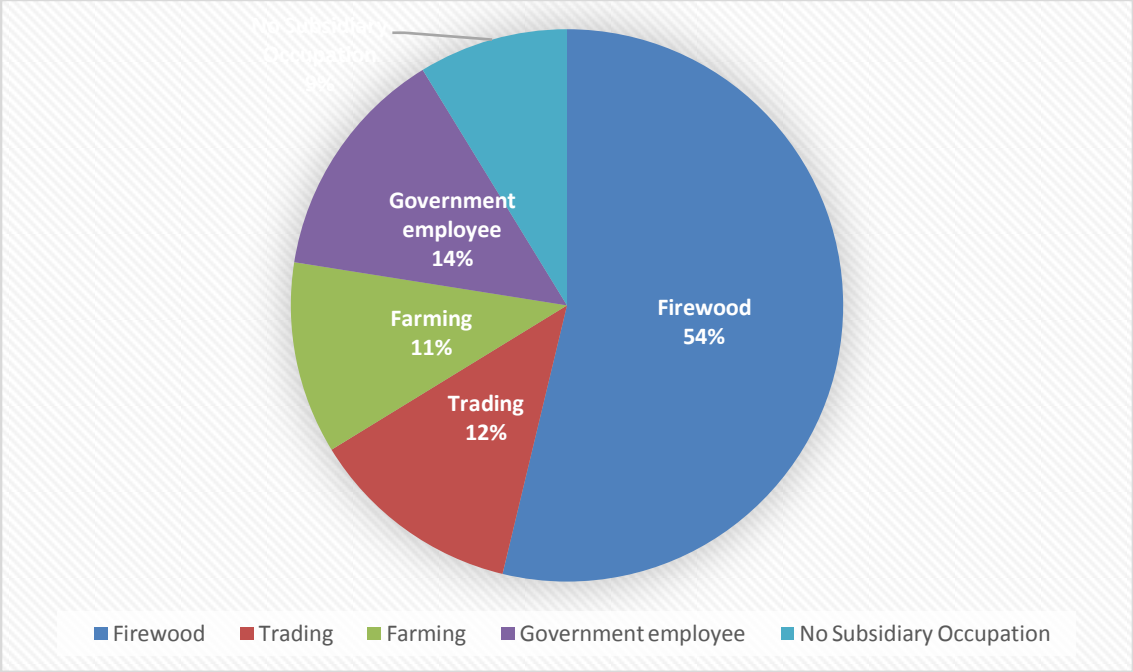

Figure 2. Pie chart showing the subsidiary occupations of pottery households (Source: Field Survey, 2013)

3.3. Processing

The primary raw materials include; black clay, red or grey clay and the temper (usually non-plastic material such as mineral, vegetal and organic material). The earth material is collected from open area usually near the stream or an excavation site as their deposit in Dada and Akerebiata (Figure 4a). The lumps of clay will then be broken into smaller pieces by pounding with a small pestle on the spread sheet at the premise of the workshop.

It is well known that when clay is mixed with sufficient water, a mass is formed which exhibits typical plastic flow, that yield stress and a measureable mobility. The temper is finer-grained and increases the clay fraction and reduces the risk of cracking. It also modifies the chemical and physical properties of clay and improves its workability. Adding temper to clay during paste preparation is a common practice among traditional potters. The clay will be mixed with temper and water usually in the 3:1 ratio and this is done by stamping with the feet to achieve good plasticity while the impurities such as quartz and mica in the clay act as binding agents (see Figure 4b). The clay is made into a paste by kneading with the hands, and any coarse stones are removed which writers refer to the over-all property as plasticity (Edward, n.d.; Hauser and Johnson, 1942; Wilson, 1936; Whitaker, 1939; Norton, 1948; Schwartz, 1952), while others refer to it as workability (Norton 1938; Graham and Sullivan 1938; Henry 1942). The relative ranges of consistencies of body used in various molding operations are indicated in Figure 3. Thereafter, the pot is completed by coiling, a process of building up the vessel wall by hand, with super imposed rolls of clay. The pot is placed inside a broad container which could be an old mud pot having neck broken or shallow metal bowl. The rim is shaped

by a piece of woven cloth. This is soaked, folded in two and placed on the rim of the pot. It is then tighten around the rim with both hands by moving clockwise until the desired shapes were accomplished (Figure 4c).

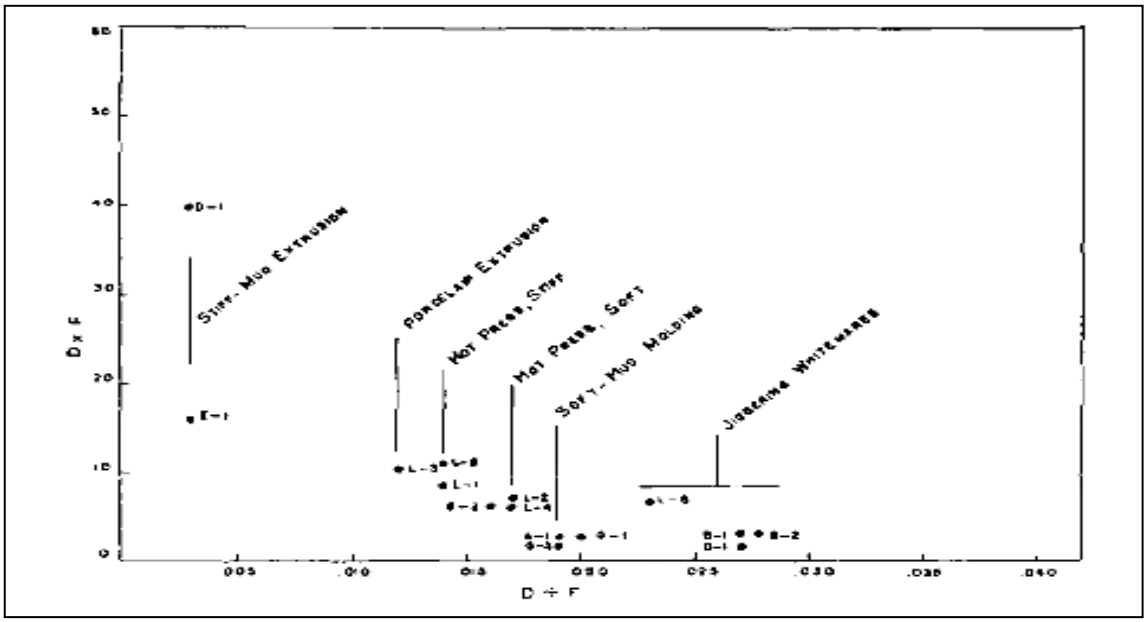

Figure3. Relative softness (deformation in inches per pound of applied force) of bodies used in various molding operations

Figure 4. Stages of pot making: (a) collection of clay, (b) mixing of clay; (c) shaping of the pot and (d) burning of finished product. Source: field survey, 2013

The surface of the pot is then finished to remove irregularities and finger marks, to increase strength. After decoration, the pots are kept inside the hut (for 7-9 days)until dry enough for firing and may be pre-heated to dry the inside of the pots if necessary. Smaller pots usually are filled with grass which is burnt to ashes while fire generated from fire woods will be set on the larger pots and when the fire is reduced to glowing embers, the pot is carefully inverted over the fire followed by grass burning (Figures 4d) as five to eight potters may fire their pots together. These processes will yield different type of clay products by sizes as shown in Figure 5.

Figure 5. Different sizes of the clay products as shown in (a) pot pellet for soup making; (b) small sized bowl of pot; (c) medium sized water pot and (d) large sized bowl of pot (Source: Field survey, 2013)

3.4. Estimate costs, returns and economic benefits from pottery enterprise

The average gross margin per pottery household per month, ₦11,000 ($68.75) in the study area has shown that the enterprise is profitable (Table 2).The result revealed that family labour significantly (about 54%) and clay material (25%) accounted for Total Variable Cost (TVC) for pottery production. This shows that pottery production in the study area is highly labour intensive. The coefficient of variation (CV) of revenue and total variable cost was found to be about 19% and 20% which implies low level of variability in revenue and total variable cost among pottery enterprise in the study area. Further, profitability ratios showed average profit margin, gross ratio and return on investment to be 44%, 56% and 1.8 respectively. The return on investment means that for every one thousand naira ($6.25) invested by a pottery household, a profit of

₦1800 ($11.25) was made. It reflects the true value of profit or gain that can be realized for every ₦1000 ($6.25) investment made to the business. The ratio not only indicates substantial return to the enterprise, but also a high level efficiency in the use of capital. However, the gross ratio is an indicator of the ability of potter to control cost of operation.

The result of the analysis of the estimated average income (returns) per pottery household per month also in Table 2 was ₦11000 ($68.75) with standard deviation of ₦3850.2 ($24.06) and this gives a two third of ₦7333 ($45.83) per pottery household per month which was relative poverty line for peri-urban pottery households in the study area. The relative poverty line which was 2/3 Mean per Adult Equivalent Household Income (MAEHI) for all pottery household translates to ₦87996 ($550) per year and ₦247.2 ($1.54) per day respectively.

Assuming household adjustment using OECD scale as specified in equation 7,about 61%of sampled pottery household heads was living below poverty threshold of₦247.2 ($1.54) per day.However, more than 74% of the respondents achieved the international threshold line of $1.0 per day. It must be emphasized that the household size adjustment and the scale economy were taken into consideration in line with World Bank, (2005) as ignoring household size will overestimate poverty of pottery households with children, and underestimate the households without dependant(s). The result is comparable to NBS (2010) that declared that 74.3% and 25.7% of poor and non-poor households in Kwara State and national average of 69.0% and 31.0% respectively. Therefore, it can be concluded that the pottery households in Kwara State have moderate well-being.

Table 2. Estimated average costs and returns (₦) per pottery household per month

Items	Total (₦)	Total ($)	% TVC	C. V. (%)
A. Gross return	25000	156.25		21
Variable cost				
Clay material	3500	21.9	25.0	
Transportation	1000	6.25	9.1	
Family labour (imputed)	7500	46.9	53.6	
Land rent	500	3.1	3.6	
Miscellaneous	1500	9.4	10.7	
B. Total variable cost	14000	87.5	100	20
C. Gross margin (TR-TVC)	11000	68.75		19
D. Profit margin (C/A* 100)%	44			
E. Gross ratio (B/ A* 100)%	56			
F. Return on investment (A/B)	1.8			

*Source: Field survey/ Data Analysis, 2013 / * indicates multiplication*

3.5. Estimated factors influencing net incomes of potters

Results showed that the postulated explanatory variables in equation 8 explained about 56.8% in the variations of net income of pottery households (Equation 9 below). The F-test with a value of 24.5 revealed that the model was statistically significant at 1% level. The coefficients of potter's experience (X_{1ij}) and cost of family labour (X_{3ij}) included in the factors affecting potters income carried *a priori* signs which support the hypothesized theory that cost of family labour is expected to bear a negative sign while years of experience made positive contributions to the net income of households. Although, materials and equipments variable was in line with postulated economic theory, the variable was not statistically significant.

$$\text{Log } Y_i = 2.605^{*} + 0.415^{*}\text{Log } X_{1ij} + 0.250\text{Log } X_{2ij} - 0.452^{**}\text{Log } X_{3ij} - 0.605\text{Log } X_{4ij}$$
(0.203) (0.151) (0.198) (0.193) (0.918)

$R^{-2} = 0.568$; F=24.50*

*Note: *and** indicates that estimated co-efficient were significant at 1% and 5% level respectively. The standard errors of the co-efficient are in parenthesis.*
(Source: Field survey/data analysis, 2013)

3.6. Estimated resource-use efficiency of pottery enterprise

The results of the estimated resource-use efficiency in Table 3 were derived with respect to coefficients of materials and equipment (X_2), and cost of family labour (X_3) variables included in the regression model. The result revealed that Marginal Value Product (MVP) of each production input was less than its acquisition cost implying that each of the input in pottery production were over utilized. The excessive uses of labour resource in rural areas tend to be a common occurrence among traditional crafts due to rather low opportunity cost for the inputs (Oladimeji, 1999; Oladimeji et al., 2013). For example, family labour cannot sensibly be 'laid off'. For instance, in traditional crafts such as pottery production even when family labour is making a negative contribution, it still has to be catered for whether it is employed or not. Besides, the existence of disguised unemployment and under-employment of labour in rural areas of the country necessarily promote excess labour in traditional crafts, agriculture and fishing enterprises (Oladimeji et al., 2013).

However the MVP of all resources used are positive, hence they all contribute positively to total output. The estimated MVP is greater than 1 in materials and equipment (X_2) and cost of family labour (X_3) variables. This indicates that that the rate of utilization of the resources is too small; increasing the rate of use would increase profit.

Table 3. Estimated resource-use efficiency for pottery enterprise in Ilorin, Nigeria

Resources	**Estimated MVP (₦) (MPP_x* P_x)**	**Unit price of input (₦)**	**Efficiency ratio(MVP/unit cost)**
X_2	1.55 ($0.01)	200 ($1.25)	0.01
X3	67.80 ($0.42)	300 ($1.9)	0.23

*Source: Field survey/data Analysis, 2013 / * indicates multiplication*

3.7. Possible transformation process to enhance its survival and competitiveness

The process and efficiency of pottery production estimated above revealed that the enterprise is largely subsistence and rudimentary, and the resources were not efficiently utilized. Although, the result showed that pottery enterprise is profitable, the product mix, quality and quantity are bulky and do not meet complex technological products manufacture by competing local and foreign allied industries (Figure 6). Further, clay and other earthen materials studied also has competitive advantage because is an important raw material suitable for manufacturing of bricks, red stone walls and roofing tiles, and household utensils such as cutlery, plate, cooking pot, glasses and artistic works could be a good import substitution materials and products if properly harnessed in the study area (Figure 6).

Figure 6. Possible transformation Clay-products by pottery enterprise adapted from https://www.capitalpotterysupplies.com

Table 4 present the standard elemental constituents that can enhance improve performance of pottery products as required for the production mixes. This revealed that potters' could shift ground to produce light and valuable households' utensils such as Ceramics (Singer and Sonja, 1971); Refractory bricks (Parker, 1967); Plastic fire clay, St. Louis (Huber, 1985) and China clay (Huber, 1985) as well as lighter households' utensils. Therefore, there is need for an appropriate policy mix that will promote the increased production of pottery products that could compete favourably with imported products. Furthermore, collaboration among allied crafts and small and medium scale enterprises that uses clay and earth material for production could promote improved performance in pottery enterprise.

Table 4. Standard average elemental compositions of different Claystone deposits withtheir respective industrial specifications

Elements	Ceramics (Singer and Sonja, 1971)	Refractory Bricks (Parker, 1976)	Plastic Fire Clay, St. Louis (Huber, 1985)	China Clay (Huber, 1985)
SiO_2	1.21	46.88	1.21	46.88
Al_2O_3	24.00	37.65	24.00	37.65
Fe_2O_3	3.23	0.88	3.23	0.88
MgO	0.30	0.13	0.30	0.13
CaO	0.70	0.03	0.70	0.03
Na_2O	0.20	0.21	0.20	0.21
P_2O_5	0.02	-	0.02	-
K_2O	0.50	1.60	0.50	1.60

4. Policy considerations

The pottery enterprise must keep pace and interact with the technologically advanced local and multinational allied industries to modernize the techniques of traditional pottery production. These include small scale industries such as wall and floor tiles, iron smelting mixed with earthen material (clay) to produce quality products viz. cutlery, household utensils, and artistic works as well as variety of ceramic products as shown in Figure 6. This could serve as channels for import substitution and export promotion.

Since there is the need to harness the traditional crafts for an indigenous-based technology, the pottery households should be given adequate training using community based informal education, to enable them imbibe mechanized pottery techniques and acquired materials inputs that will translate into reasonable quantity and quality products. This will ensure a complete restructuring of the production process and proper understanding of modern equipment and adopt technology (such as introduction of grinding, drying, spraying and firing machines) capable of increasing not only the profitability of the enterprise but also make efficient use of resources. In this way, small scale pottery production could transform their skill and workshop to modern technology and create new plant and types of products which could meet remarkable commercial success.

Further, establishment of potters' co-operative association for annexing financial aids and inputs such as training, and creating necessary infrastructures, enabling environment and market channel by government and non-government organizations, that will take care of commensurate price for products of pottery enterprise. And these could provide impetus that will ease transition from traditional to modern pottery production, and apparently improve pottery households' welfare and reduce the rural poverty.

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