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# Impact and Socio Economic Contribution of Wood Carving in Abeokuta Metropolis, Ogun State, Nigeria

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**Abstract**
An investigation of the various wood species used in carving wood work was carried out. Questionnaire was administered to 50 respondents. Data collected were analyzed using descriptive statistical tools, Cost and return analysis was used to determine the economic contribution of wood carving while Rate of Returns on Investment (ROI) was used to determine the rate of profitability of the business. The study revealed that 86% of the respondents were male, 88% and 98% of the respondents who were married practiced the occupation full-time. The result also revealed that the average net income of respondents per seller/month was ₦3,675.33 and the rate of return on investment, ROI was 48.80% which showed that carving business is profitable and economically viable. Based on the findings that there exist significant relationship between cost and returns of woodcarving in the study area, as well as the fact that most of the carvers claimed not to have access to formal loans, this study recommends that carvers should strengthens themselves financially by forming cooperative groups whereby members could have access to loans at a very low rate and carving inputs could be purchased in bulk to be shared among members at a reduced cost.
**Keywords**: Wood carving, Socio economic contribution, Rate of return

## INTRODUCTION

Wood is one of the most abundant renewable raw materials in the forest. It is in the fore-front of the world's industrial raw materials and it is the real wealth of nations (Ogunsanwo *et al.*, 2007). Its ability to have different physical, chemical, mechanical properties as well as diverse colors have made wood the most versatile raw materials for various uses (Ifebueme, 1993). In West Africa, wood carving is prominent in Sierra Leone and Nigeria. In Nigeria, wood carving zone extend from the Yoruba land through Benin to Akwa Ibom. Wood carver uses log tree from farm land, forested area and the surrounding village to produce mortars, wooden cooking utensils, drum, award, mask, sculpture and other traditional product like stool, traditional game (Ayo olopon). Some wood species used for carving is Ebony (*Diosprous spp*), Teak (*Tectona grandis*), Gmelina (*Gmelina aborea*), Iroko (*Millicia excelsa*), Obeche (*Triplochiton sceleroxylon*), and Mahogany (*Khaya ivorensis*) e.t.c. Woodcarving has been used in Nigeria in the production of the traditional items such as tool, bowl or cups, spoons, knife sheath, wooden pestle, beaters, dishes, vases, wooden pots, masks and sculptures (Mbagwie, 1978). There are other carved wooden forms that serve useful purposes all over the world. Woodcarving, like the trade in many non-timber products, is largely hidden from the attention of policy makers in the development, forestry and tourism sector (Centre for International Forestry Research, 2002). The price of carved product varies due to their value and there are always new design of different product coming into the market as a result of improving of the product and competition among carvers, also, new tools and equipment are evolving though wood carvers still continue to make judicious use of simple tools such as the adze, axe, knives, gouges, spokeshares and so on (Amoh, 2012). For instance, product like status decorated carving as wooden physical instrument are more expensive than domestic wooden product such as stool, chair, panel and portal which are only use domestically in Nigeria. Woodcarving has significantly influenced the economy of most countries, for example, in Bali, Indonesia, exports US$ 100 million of carvings per year. India has a US$ 65 million industry with 50,000 people involved in a single centre alone (Saharanpur). In Kenya, woodcarving involves over 60,000 woodcarvers producing commercial/export carvings, and provides significant household income for about 300,000 dependants. In South Africa, woodcarving provides household income of around US$ 500-2000 per year, or around 80% of the household cash. In densely populated areas like the Central Valley area of Oaxaca, Mexico, woodcarving contributes round US$ 2500 per year to the incomes of carver households (CIFOR, 2002). Although some of these crafts are carried out in almost every Nigerian community, others are restricted to locations where raw materials are easily available. The loss of the raw material has direct consequences for the livelihood security of local producers. The replacement of alternative woods sometimes increases pressure on species with multiple uses and which are important for survival (e.g. fruit trees normally reserved for subsistence and food security in drought years). Indigenous knowledge and traditional beliefs associated with particular species are lost when the species declines. This study is significant as it would provide information on the socioeconomic contribution of woodcarving to people, various wood species used in carving work. The viability and profitability of the carving business were also determined. The study then suggests means of making the woodcarving industry a pulsating and sustainable sector.

## Methodology

### Study Area

The study was carried out in Abeokuta, Ogun state, Nigeria and focused on some wood carving industries in the metropolis. Abeokuta is the capital of Ogun state. Abeokuta is the largest city and state capital of Ogun State in the Southwest Nigeria ("Abeokuta", 2017). Ogun State had a total population of 3,728,098 according to the census figure of 2006 (NPC, 2006). As at 2005, Abeokuta and the surrounding area had a population of 593,140.

### METHOD OF DATA COLLECTION

Data were collected using a questionnaire with open and close ended questions administered interpersonally to 50 respondents in the study area (i.e. the carvers and the sellers).

### DATA ANALYSIS

Descriptive statistical tools were used to summarize the variables of interest. Cost and return analysis was used to determine the economic contribution of wood carving in Abeokuta metropolis while Rate of Returns on Investment (RORI) was used to determine the rate of profitability of the business.

$$NI = TR - TC$$

$$AFC = \frac{TFC}{Q}$$

$$AVC = \frac{TVC}{Q}$$

$$RORI = \frac{TR-TC}{TC} \times \frac{100}{1}$$

Where;

RORI = Measure of profitability
NI = Net income
TR= Total Revenue
TC = Total cost
TFC = Total fixed cost
TVC = Total variable cost

## RESULTS

**TABLE 1: Socio Demographic Characteristics of the Respondents**

| | Frequency | Percentage | Mode |
|---|---|---|---|
| **Gender** | | | |
| Male | 43 | 86 | Male |
| Female | 7 | 14 | |
| Total | 50 | 100 | |
| **Age** | | | |
| Below 25 | 7 | 14 | |
| 25-40 | 29 | 58 | 25-40 |
| Above 40 | 14 | 28 | |
| Total | 50 | 100 | |
| **Marital status** | | | |
| Single | 6 | 12 | |
| Married | 44 | 88 | Married |
| Divorced | - | - | |
| Total | 50 | 100 | |
| **Educational level** | | | |
| No formal education | 2 | 4 | |
| Secondary education | 7 | 14 | |
| Primary education | 36 | 72 | Secondary education |
| Tertiary education | 5 | 10 | |
| Total | 50 | 100 | |
| **Religion** | | | |
| Muslim | 32 | 64 | |
| Christian | 16 | 32 | Muslim |
| Others (traditional) | 2 | 4 | |
| Total | 50 | 100 | |
| **Number of children** | | | |

| | | | |
|---|---|---|---|
| 2-4 | 22 | 44 | |
| 5-6 | 18 | 36 | 2-4 |
| Above 6 | 4 | 8 | |
| None | 6 | 12 | |
| Total | 50 | 100 | |

Source: Field Survey (2016)

**Table 2: Mode of Business Operations of the Respondents**

| | Frequency | Percentage | Mode |
|---|---|---|---|
| Status of business | | | |
| Part time | 1 | 2 | |
| Full time | 49 | 98 | Full time |
| Total | 50 | 100 | |
| Mode of entry | | | |
| Apprenticeship | 32 | 64 | Apprenticeship |
| Inheritance | 18 | 36 | |
| Total | 50 | 100 | |
| Years of experience | | | |
| 1-20 | 41 | 82 | 1-20 |
| 21-40 | 8 | 16 | |
| Above 40 | 1 | 2 | |
| Total | 50 | 100 | |
| **Numbers of apprenticeship** | | | |
| None | 9 | 18 | |
| 1-5 | 20 | 40 | 1-5 |
| 6-10 | 15 | 30 | |
| 11-15 | 6 | 12 | |
| 15 above | - | - | |
| Total | 50 | 100 | |
| **Tree Species used for carving** | | | |
| *Gmelina* | 14 | 28 | |
| *Teak* | 28 | 56 | |
| *Iroko* | 3 | 6 | |
| *Ebony* | 5 | 10 | |
| Total | 50 | 100 | |
| **Period of apprenticeship** | | | |
| 3years | 11 | 22 | |
| 4years | 19 | 38 | 4years |
| 5years | 18 | 36 | |
| 6years | 2 | 4 | |
| Total | 50 | 100 | |
| **Source of capital for business** | | | |
| Savings | 25 | 50 | Saving |
| Banking | 3 | 6 | |
| Relation | 7 | 14 | |
| Cooperative | 15 | 30 | |
| Total | 50 | 100 | |
| **Initial capital Invested into the business** | | | |
| ₦ 10000-₦50000 | 35 | 70 | |
| ₦ 51,000-₦100000 | 15 | 30 | ₦10000- ₦50000 |
| Total | 50 | 100 | |
| **Source of wood species for carving** | | | |
| Farmland | 4 | 8 | |
| Sawmill | 39 | 78 | Sawmill |
| Forest reserve | 7 | 14 | |
| Total | 50 | 100 | |

Source: Field Survey (2016)

**Table 3: Cost and return Analysis of wood carving business per month in Abeokuta**

| Item | Amount (₦) | % of TC | %of TR |
|---|---|---|---|
| Amount paid before cutting | 37,500.00 | 9.96 | 6.69 |
| Cost of rent | 59,100.00 | 15.70 | 10.55 |
| Cost of transport | 38,600.00 | 10.25 | 6.89 |
| Taxation | 6,300.00 | 1.67 | 1.12 |
| Association due | 19,200.00 | 5.10 | 3.43 |
| Total variable cost | 160,700.00 | 42.69 | 28.52 |
| Fixed cost initial capital | 215,833.33 | | |
| Total fixed cost (TFC) | 215,833.33 | 57.32 | 38.52 |
| Total cost (TFC +TVC) | 376,533.33 | | 67.20 |
| Total revenue (TR) | 560,300.00 | | 100 |
| Net income (TR –TC) | 183,766.67 | | |
| total variable cost/seller | 3,214.00 | | |
| Total fixed cost/seller | 4,316.67 | | |
| Total cost/seller | 7,530.67 | | |
| Total revenue/seller | 11,206 | | |
| Net income/seller | 3,675.33 | | |

Source: Field Survey (2016)

$$\text{RORI} = \frac{\text{TR-TC}}{\text{TC}} \times \frac{100}{1}$$

= 48.80%

**Table 4: Summary of Wood Carving Species and some art work produced from them and their uses**

| Wood species | Local name | Art obtained | Uses of artwork |
|---|---|---|---|
| Teak (*Tectona grandis)* | Teak | Mask, animal statue, festac, award, panel, drum, Ayo olopo (traditional game), walking stick, stool, table, bid moremi dressing narrow | Decoration, gift, souvenir , export aesthetic, National monument, traditional worshipping |
| Gmelina (*Gmelina aborea)* | Gmelina | Mask, animal statue, festac, award, panel, drum, Ayo olopo (traditional game), walking stick, stool, table, bid moremi dressing narrow | Decoration, gift, souvenir, export aesthetic, National monument, traditional worshipping |
| Iroko (*Meliacia execelsa)* | Iroko | Mask mortal drum, moremi Festac, panel staff, human status, animal statures, figure | Decoration, gift, souvenir, export aesthetic, National monument, traditional worshipping |
| Ebony (*Diosprous spp*) | Osun | Mask mortal drum, moremi Festac, panel staff, human status, animal statures, figure | Decoration, gift, souvenir, export aesthetic, National monument, traditional worshipping |
| Obeche (*Triplochiton scleroxyliceae*) | Arere | Mask mortal drum, moremi Festac, panel staff, human status, animal statures, figure and portraits | Decoration, gift, souvenir, export aesthetic, National monument, traditional worshipping |
| Mahogany (*Khaya ivorensis*) | Gedu | Mask mortal drum, moremi Festac, panel staff, human status, animal statures, figure and portraits | Decoration, gift, souvenir, export aesthetic, National monument, traditional worshipping |

Source: Field Survey (2016)

## DISCUSSION

The demographic characteristics of the respondents revealed that there were involvement of more male with 86% than their female counterpart in wood carving business in Abeokuta (Table 1), this was because wood carving require much energy and it is associated with physical stress which most women cannot cope with, It was only in the sales of the carved wood products that the female folks (14%) were involved (Table 1). The study also revealed that the age of the respondents were dominant at age class 25- 40 with 58% and 88% of the respondents were married (Table 1) which showed mature and active age involvement in the business. It was also deduced that 98% of the respondents practiced the occupation full-time (Table 2). In addition 30% and 40% of the

respondents had 1-5 and 6-10 apprentices respectively (Table 2) and this finding agrees with Adu-Agyem *et al.* (2013) that apprentice paid to be trained for a period of not less than three years and graduated at the end of their apprenticeship and this showed the prospect in wood carving in the study area. Also the study revealed that 72% the respondents had secondary school education, which showed the low literacy level of the people that are involved in the business in Abeokuta and this is in line with Adu-Agyem *et al.* (2013) findings that with acceleration of education in Ghana, many young persons are now in school, leaving the apprenticeship in wood carving in the hands of a few non-school goers and Junior High School graduates.

Furthermore the study also showed that 64% of the respondents were Muslim, 32% were Christian and 4% were traditional worshipper (Table 1), through oral interview it was revealed that respondents that were traditional worshipers carved products mainly for traditional purpose, this type of carver are called "Agbegilere" and can be found in Itoku area of Abeokuta. It was also revealed that 78% of the respondents sourced for wood specie to be used for carving from sawmill (Table 2) which were in line with Aruofor (1986) finding that wood carving help to utilize timber resources such as off cuts, which would have been regarded as wastes in the sawmill. The choice of colors depends on the natural colors and the grain patterns of the trees used. The product made by the carvers varies in prices. The cost and return analysis showed that the carvers in the study area made a sum of ₦183,766.67 profit/month (Table 3). The study also revealed that 70% of the respondents invested ₦10000- ₦50000 in the business which showed that the capital needed to start the business is affordable for a common man and the respondents makes an average net income(profit) of ₦3,675.33 monthly (Table 3). The rate of return on investment was 48.80% which shows that the business is economically viable. The summary of Wood Carving Species and some art work produced from them and their uses are documented in Table 4. The choice of species is very germane when it comes to artwork and this helps the carvers to ascertain the best wood to be used for a particular artwork.

**Conclusion**

Wood carving is an important and long established traditional artifact industry. It has the potential to improve livelihoods for millions of households. Woodcarving requires a great deal of skill, creativity and artistry. Quality pieces can fetch considerable sums of money. Governments and donors needs to facilitate the establishment of market information systems (on prices, markets, quality, etc.) to improve the efficiency and transparency of marketing systems. Based on the findings that there exist significant relationship between cost and returns of woodcarving in the study area, as well as the fact that most of the carvers claimed not to have access to formal loans, this study recommends that carvers should strengthens themselves financially by forming cooperative groups whereby members could have access to loans at a very low rate and carving inputs could be purchased in bulk to be shared among members at a reduced cost. The produce could also be sold in bulk, thereby lowering the average transaction costs. There is also the need for the Government at Federal, State, and Local levels to improve credit scheme, pricing and distribution of inputs.

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