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# ANALYSIS OF ECONOMIC VIABILITY OF SMALL SCALE FURNITURE ENTERPRISE IN EDO STATE, NIGERIA

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## ABSTRACT

The study examined the economic viability of furniture enterprise and constraints faced by the operators. A multi-stage sampling procedure was employed to selecte135 furniture makers for the study using structured interview schedule. Data collected were analysed with the aid of descriptive statistics, budgetary technique and multiple linear regression model. Analyses revealed that the business operators were in their active ages and are experienced. The mean net income per year for an average operator was ₦132, 670.93. Economic viability indices revealed that the business is viable as BCR, ESR, ROR, GR values were 2.5, 0.10, 1.59 and 0.39, respectively. Net income was positively influenced by year of schooling and negatively influenced by cost of labour and distance from wood source. The major constraints faced by the respondents were lack of fund, market and absence of good quality wood. It therefore becomes imperative to educate the operators as well as make policy in place that would reduce cost of transport in the area.

**KEYWORDS**: Economic viability, small scale, furniture industries, regression model

## INTRODUCTION

Nigeria is richly endowed with abundant natural resources which include forests. This actually led to the establishment of forest products industry in Nigeria like the sawmilling enterprises being the first set of local industrial enterprises in Nigeria. In fact, forest industry used to be one of the most viable and developed industries in the Nigerian economy between 1960's to early '80's. During this period, this subsector of the agricultural sector played pivotal roles in economic development which led to the establishment of large scale wood processing companies such as African Timber and Plywood, Sapele; Epe Plywood, Epe; Nigeria-Romania Wood Industry, Ondo, and a host of others. According to Ogunwusi (2011) and Ogunwusi and Olife (2012), majority of these companies were established on bilateral and multilateral basis for the purposes of job creation and for the supply of raw materials for export and local consumption. Following the reduction in the supply of wood, most of the large industries including the aforementioned ones collapsed (RMRDC 1991, 2003, 2009; Bello and Mijinyawa, 2010; Ogunwusi, 2012).

In recent past there has been the emergence and predominance of other forest based industry like the small scale furniture enterprises in Nigeria. These enterprises are characterized by smallholder investors having low level of productivity, poor quality products and is mostly serving localized markets (Akanni and Odetayo, 2011) with marginal profitability (Ogunsanwo, 2010; Bello and Mijinyawa, 2010; Ogunwusi, 2011; Ogunwusi and Olife, 2012). The enterprises use simple technologies with little technical knowhow and low capital input. They are mostly made up of outfits with crude hand tools and equipment (RMRDC, 1991; 2003 and 2009). Other features of the enterprises are poor quality output which cannot compete with imported ones, low incentives for expansion (NACETEM, 2010; Bello and Mijinyawa, 2010), low level of demand (Arowosoge *et al.* 2010) and high incidence of poverty among others (Bello and Mijinyawa, 2010). The small

scale nature of the enterprise and simple technological operations coupled with low technical knowhow and limited access to low capital input access are major threats to the economic viability of the enterprises (Akanni and Adetayo, 2011). Damavan *et al.* (2006) and Alao and Kuje (2010) posited that, like any other small scale enterprises, the furniture industries lack the necessary skills and resources to operate efficiently and are ill prepared to deal with the problem of production and the severe constraints they face in their management skills. Notwithstanding, these small scale furniture enterprises generate employment and serve as means of livelihood to a good number of the populace.

Some studies have been carried out especially on the efficiency of the furniture industry in Nigeria. For example, Akanni and Adetayo (2011) estimated cost-return structure and technical efficiency in sawmilling industry in Ijebu Division, Ogun State while Alao and Kuje (2010) determined the technical efficiency and production function for small scale furniture industry in Lafia metropolis, Nasarawa State, Nigeria. However, no known studies have investigated the constraints and the economic viability of small scale furniture industries in Edo State, Nigeria using enterprise viability indices. The study was therefore conducted to answer the following questions: What are the socioeconomic characteristics of the respondents? What are the factors impeding returns on furniture business in the area? What are the costs and returns on this business? What are the constraints facing the business in the area?

## RESEARCH METHODOLOGY

### Study Area

The study was conducted in Edo State, Nigeria. The land area of the state is estimated at about 19,035 km2. It bounded on the West by Ondo State, on the North by Kogi State and on the East/South by Delta State (EDADP, 1999). The total population of the State was 3.2 million (National Population Census, 2006). The population figure consisted of 1,640,461 male and 1,577,871 females. However, the current population projection of the State is about 5 million (Edo State, 2015). Natural resources abound in the state which includes: forest resources, limestone, marble, lignite, crude oil, gold, clay, kaolin, granite, agriculture etc. Small scale industries form the hub of the state's economy.

### Sampling procedure and data

A 3-stage sampling procedure was used for the study. In the first stage, the 3 metropolitan Local Government Areas (LGAs) were selected based on the prevalence of the furniture industries in the area. In the second stage, each of the LGAs was stratified into 3 based on their meeting zones. In the third stage, 15 respondents per zone were selected for interview using a simple random sampling technique. A total of 135 respondents were interviewed for the study. Questionnaires were administered to the respondents during their meetings that occur fortnightly. Data for the study were mainly from primary sources. Data were collected on the socioeconomic characteristics of the respondents such as age, household size, work force, distance of workshop from input source, level of education and input-output information.

### Analytical technique

Analytical tools employed in the study were descriptive statistics, budgetary technique and multiple linear regression model. Descriptive statistics was employed to describe the socio-economic characteristics of the respondents. It employs simple percentage, means and standard deviation.

### Budgetary technique

Budgetary analysis was used to determine the profitability or otherwise of the industry in the area. This technique employed gross margin and net margin analysis. Gross margin is the difference between total revenue and total variable cost and profit (total revenue minus total cost) (Alimi and Manyong, 2010). Owombo *et al.* (2012) defined profit as the residue of total revenue over and above the total cost.

G.M = G.I – TVC .....1

Profit = GM -TC .....2

Where

G.M = Gross margin

G.I = Gross sales/income

TVC = Total variable cost

TC = Total cost

The variable cost components comprise value of timber product, wages and salaries of labour and costs of nail, polish, adhesive, transportation and electricity, among others while the fixed cost components comprise of rent and depreciation of fixed items. The depreciation of fixed items was computed using the straight line method because of the ease and simplicity in computation. The formula for the straight line depreciation method is shown below:

$$D = \frac{C - S}{N}$$

Where

D = Annual depreciation

C = Initial cost of fixed asset

A = Salvage value (Estimated costs after useful life)

N = Productive life span

The economic worth or viability of the enterprise was determined by the use of the following profitability ratios:

1. Benefit Cost Ratio (BCR) = TR/TC
2. Expense Structure Ratio (ESR) = FC/VC
3. Rate of Return (ROR) = NR/TC
4. Gross ratio (GR) = TC/TR

**Multiple regression model**

The multiple linear regression using Ordinary Least Square (OLS) was used to determine quantitatively the effects of some socio-economic factors on the income of the operators. This can be specified thus

$$Y = f(x_i)$$

Where Y = Profit of the respondents from the business

$x_i$ = Independent variables

**Model Specification**

The empirical model postulated is implicitly presented by equation (3)

$$Y = \beta_0 + \beta_1 AGERES + \beta_2 LABOUR + \beta_3 DISTANCE + \beta_4 YRSCHL + \beta_5 YRESTAB + \beta_6 CREDITACC + \mu_i$$

Where

*AGERES* = age of respondents in year

*LABOUR* = Mandays of labour used
*DISTANCE* = Distance from wood source in (km)
*YRSCHL* = Year of schooling of the respondents in year
*YRESTB* = Year of establishment
*CREDITACC* = Credit access (dummy: access =1, no access=0)
$\mu_i$= random error

## RESULTS AND DISCUSSION

### Socioeconomic characteristics of the respondents

Table 1 reveals the socioeconomic characteristics of the small scale furniture business operators in the area. The results showed that the mean age of the respondents was 41±9 years. This implies that the small scale furniture business operators in the area were in their active ages. The results also showed that the means of work force, distance from wood source, year of education and years of establishment were 7±3, 3.4±1.8km, 11±4.1 years and 14±6.6 years, respectively. The low mean of the work force shows the small scale nature of the enterprise in the area. The mean distance from the wood source implies that an average furniture business operator travels outside his area of operation either to the market or sawmill to source for wood. The mean number of year of education shows that the operators almost completed their secondary school. The mean year of establishment among the respondents was 14±6.6. This implies that the business operators in the area are experienced in the business. The results of the descriptive statistics also revealed that none of the respondents was a female. It implies that the enterprise in the area is male dominant. This is in agreement with Alao and Kuje (2010) that furniture industry is a male dominant one. Majority of the respondents (74.5%) sourced their wood from timber markets while 24.5 percent of them sourced wood from the saw mill. The high patronage of the timber markets recorded among the respondents may be traceable to the small scale nature of their business. Figures 1a and b reveal the respondents' credit access and the credit sources. Figure 1a shows that 61 percent of the respondents had no access to informal credit while 39 percent of them had access. The low respondents' access to informal credit may be an impediment to the expansion of the business in the area. Figure 1b reveals the informal credit sources of the respondents. The figure shows that 36 percent, 41 percent and 23 percent of the respondents accessed credit from family members, friends and members' cooperatives, respectively. Friends constituted the major lending source to the operators in the study area.

**Table 1: Socioeconomic characteristics of the respondents**

| Variable | Mean ± std. dev. |
|---|---|
| Age (year) | 41±9 |
| Workforce | 7±3 |
| Distance from wood source (km) | 3.4±1.8 |
| Year of education (year) | 11±4.1 |
| Years of establishment (year) | 14±6.6 |

%

| Variable | |
|---|---|
| Sex | |
| Male | 100 |
| Female | 0 |
| Total | 100 |
| Wood source | |
| Timber shed | 74.5 |
| Saw mill | 25.5 |
| Total | |

**Source: Data analysis, 2015**

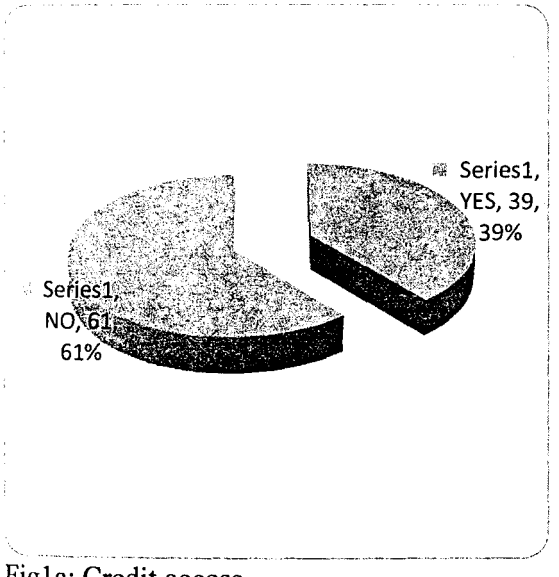


Fig1a: Credit access

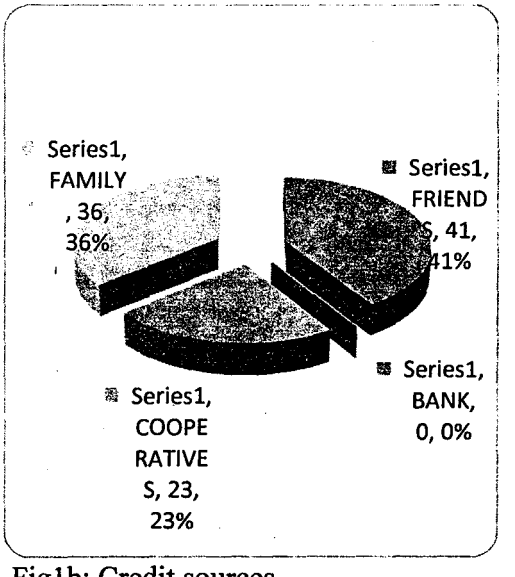


Fig1b: Credit sources

**Results of budgetary analysis of the respondents**

Table 2 reveals the results of the budgetary analysis of the business enterprise. Results of the analysis showed that the mean gross revenue of the business enterprise in the area was ₦216, 000.23. The mean total variable cost was ₦75, 454.3 which accounted for 90.5 percent of the total cost incurred by the firms while the mean total fixed cost incurred was ₦7, 875 which accounted for 9.5 percent of the total cost incurred by the firm. The mean total cost incurred by the respondents was ₦ 83, 329.3. Also, the mean gross margin recorded by the operators was ₦140, 545.93 per year while the mean net profit per year recorded among them was ₦132, 670.93.

**Table 2: Results of budgetary analysis of the respondents**

| Item | Value (₦) | | Percentage |
|---|---|---|---|
| A. Gross Revenue | | 216,000.23 | |
| B. Variable cost | | | |
| Labour | 25,130.2 | | |
| Plank | 39,890 | | |
| Nail | 2,112.9 | | |
| Polish | 1,021.3 | | |
| Adhesive | 813 | | |
| Transportation | 3,455.5 | | |
| Electricity | 790.8 | | |
| Miscellaneous | 2,240.6 | | |
| Total variable cost | | 75,454.3 | 90.5 |
| C. Fixed expenses | | | |
| Rent | 3,180 | | |
| Depreciation of fixed assets | 4,677 | | |
| Total fixed cost | | 7,875 | 9.5 |
| Total cost | | 83,329.3 | 100 |
| Gross margin | | 140,545.93 | |
| Net profit | | 132,670.93 | |

**Source: Data analysis, 2015**

## Economic worth and viability of the business

Table 3 shows the economic worth and viability indices of the enterprise in the area. The results in the table showed that the BCR, ESR, ROR and GR values were 2.5, 0.10, 1.59 and 0.39, respectively. The 2.5 value of the BCR implies that every N1 incurred as total cost will yield a gross revenue of ₦2.50K. It reveals a good return per unit of investment cost incurred. The 0.10 value of ESR reveals that 10K of total fixed cost is incurred for every ₦1 of total cost incurred. It implies that low fixed cost is required for the operation of the business. The ROR value of ₦1.59 reveals that every ₦1 incurred as total cost would generate ₦1.59K net profit. The value implies that the industries yield a high net return per investment. The GR value of 0.39 shows that just 39 percent of the revenue goes on expenses. It implies that for every ₦1 generated as revenue, just 39K of it goes on expenses. The indices imply that furniture business in the area is highly viable.

**Table 3: Economic viability indices**

| Ratios | Indices |
|---|---|
| Benefit cost ratio (BCR) | 2.50 |
| Expense structure ratio (ESR) | 0.10 |
| Rate of return (ROR) | 1.59 |
| Gross ratio (GR) | 0.39 |

**Source:** Data analysis, 2015

## Multiple Regression Analysis

Table 4 reveals the results of the multiple linear regression analysis which estimated the effects of the identified independent variable on the income of the business operators are presented in Table 4. The R-square and the Adjusted R-squared values were 0.7701 and 0.7033, respectively. This implies that 77 percent variations in the operators' income are jointly explained by the independent variables. The results indicate that the year of schooling, year of establishment have positive and significant effect on the profit of furniture enterprise, distance from wood source and labour cost negatively and significantly influence the enterprise net income that while year of schooling and year of establishment were significant and positively influenced respondents' profit, distance from

wood source and cost of labour were negative and significantly influenced their profit in the area. The positive relationship between enterprise net profit and year of schooling and year of establishment implies that the two variables enhance the business' profitability in the study area. However, the negative relationship between respondents' profit and labour cost and distance from wood source implies that cost of labour and distance from wood source reduce respondents' profit. That is, the longer the distance, the more the expenses on transportation and hence, the lower the income. This is in agreement with Owombo *et al.* (2012). Similarly, the higher the unit cost of labour, the lower the potential profitability of the enterprise in the area.

**Table4: Results of multiple linear regression**

| Variable | Coefficient | Standard error | t-value |
|---|---|---|---|
| Constant | 331558.6256 | 258340.64 | 1.283 |
| Age | -3112.414121 | 4887.1929 | -0.637 |
| Labour | -2.060388914 | .99104366 | -2.079** |
| Distance from wood source | -8270.423010 | 3832.9361 | -2.158** |
| Year of schooling | 608.4106392 | 324.65548 | 1.874* |
| Year of establishment | 8521.748156 | 3808.3871 | 2.238** |
| Access to credit | 2.545017936 | 2.4012206 | 1.060 |
| $R^2$ | 0.7701 | | |
| $R^2$-Adjusted | 0.7033 | | |

**Source:** Data analysis, 2015

## Constraints of small scale furniture business

Table 5 reveals the constraints facing the business operators in the area. The results of the multiple responses in Table 5 revealed that fund is The major constraints faced by the business operators in the area as all (100%) the respondents indicated fund as the major constraints. Similarly, the second major constraint in the area is market, as 79 percent of them ranked it as another major constraint in the area. Other constraints indicated by the operators were limited supply of quality wood (77%), transportation (56%) and labour (47%). The results revealed that labour is not a serious problem in the study area.

**Table 5: Constraints of small scale furniture business in the study area**

| Constraints | Percentage |
|---|---|
| Fund | 100 |
| Market | 79 |
| Quality wood | 77 |
| Transportation | 56 |
| Labour | 47 |

**Source:** Data analysis, 2015; Multiple responses

## CONCLUSION

The studies concluded that the business operators were in their active ages and are well experienced. The enterprise is male dominant. Majority of the farmers do not have access to credit of any kind. The major informal credit is friends. Small scale furniture business in the area is viable. Operators' income was positively influenced by the year of schooling and year of establishment, respectively. However, distance from wood source negatively influenced their income. The major constraints facing the business in the area were fund, market and absence of

good wood quality. Hence, it becomes imperative to put in place policy interventions that would educate the operators as well as reduce cost of transport in the area.

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