



ECONOMICS OF RATTAN-BASED COTTAGE ENTERPRISES IN SELECTED STATES OF SOUTH WESTERN NIGERIA

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ABSTRACT

Rattan based cottage enterprises have great potential to address socio-economic problems such as poverty and poor level of living. It plays a pivotal role in achieving livelihood diversity to increase and stabilize income. This study was conducted to evaluate the economic potentials of rattan-based cottage enterprises in South western Nigeria. Primary data were collected through administration of questionnaire using multi-stage sampling technique to purposively selected three states in Southwestern Nigeria where rattan species are processed into some by-products. The questionnaire was administered to 121 rattan-based cottage entrepreneurs in Lagos (59), Ogun (30) and Oyo states (32). Data were analysed using descriptive statistics to determine the socioeconomic variables while budgetary analysis was used to analyse the economic variables. Z-statistic was used to determine whether rattan-based enterprises are profitable. The results revealed that majority (91.7%) of the rattan-based entrepreneurs are married with one form of education or the other. The average gross profit (₦1,635,030:95), net profit (₦1,593,690:00), Rate of Return (658.9%) and Rate of Return on Investment (586.4%) obtained indicated that the enterprise was highly profitable. There is therefore the need for government to develop appropriate policies that will promote rattan business in Nigeria.

Keywords: Rattan, Rattan-Based Enterprise, Profitability Indices, National Economic Growth

Introduction

Rattans are spiny and climbing palms belonging to the family palmae (Aracaceae) and a large sub-family calamoideae. The rattan plant derives its name from the Malaysia word "raut" which means "pare". It has therefore been suggested that the name is a reflection of its preparation method, which includes surface peeling, to clean and splitting before being converted to numerous end-products (Dahunsi, 2000). Rattan (canes) belong to the group of non-timber forest products. The species have enormous potentials to rural and urban economies in developed and developing nations. It plays a pivotal role in small scale industries contributing to the growth of national economies the world over (Ogechukwu,

2006). Rattan enterprises have a great value in terms of employment generation and foreign exchange earnings.

NTFPs constitute an important source of livelihood for millions of people from forest fringe communities across the world (Asfaw *et al.*, 2013). As one of the important non-timber forest products (NTFPs), after timber, rattan form an integral part of rural and tribal populace of many tropical countries (Renuka, 2000). They are not only the chief raw material for industries in various part of the world, but they hold great social significance as a source of livelihood for the people residing near the forest area (Renuka, 2000). Rattan is widely recognized as an important domestic and internationally-trade commodity. According to an estimate by the



International Network for Bamboo and Rattan (INBAR), the global and local usage of rattan is worth US \$2.5 billion and external trade of rattan is estimated to generate US \$4 billion annually Wulf and Ian (2000). Also, seven hundred million people worldwide use rattan (Wulf and Ian (2000).

The largest demand for rattan canes is for making furniture, for which they provide both frames and decorative trimmings and facings. Uses of cane include mats, and crafts and souvenirs. It can also be utilized for riot control and judicial flogging Panayotou (1990). Rattan is indisputably one of the most important non-timber forest products in the world (Panayotou, 1990).

Despite the socio-economic importance of rattan, it remains a neglected natural resource in Africa particularly Nigeria. Presently, the data on profitability of processed rattan cane products trade is generally inadequate to guide the prospective investors in rattan business in South western Nigeria. This study is therefore designed to determine the profitability of the rattan-based enterprises in South western Nigeria.

Methodology

Study Area

The study was conducted in selected State of South Western Nigeria which consists of Lagos, Ogun, Oyo, Osun, Ondo and Ekiti States. South western Nigeria occupies a

major position in the Agricultural and Forestry sub-sector economy of the country. The area lies between longitude $2^{\circ}31^1$ and $6^{\circ}00^1$ East and Latitude $6^{\circ}21^1$ and $8^{\circ}37^1$ North (Agboola, 1979). The Southwestern Nigeria is bounded in the East by Edo and Delta states, in the North by Kwara and Kogi states, in the West by Republic of Benin and in the South by the Gulf of Guinea. The total land area of south western Nigeria is about 77,818 km² with the population of 27,581,992 in 2006 (NPC, 2006). The climate of the study area is tropical in nature and it is characterized by wet and dry seasons. The temperature ranges between 21°C and 34°C while the annual rainfall ranges from 150 mm to 3000mm. The ecology of South Western Nigeria is made up of fresh water swamp and mangrove forest at the belt. The low land forest stretches inland to Ogun and part of Ondo state while secondary forest tends towards the Northern boundary where derived and Sudan Savannah exists (Agboola, 1979). South Western Nigeria consists mainly of the Yoruba ethnic group. There are other ethnic groups and nationals from within and outside Africa living in various parts of South Western Nigeria. People in this part of the country are predominantly small-scale farmers. Other major occupations include trading, teaching, catering, tailoring, bricklaying, establishment and operation of agro-allied and forest-based small scale industries (Agboola, 1979).

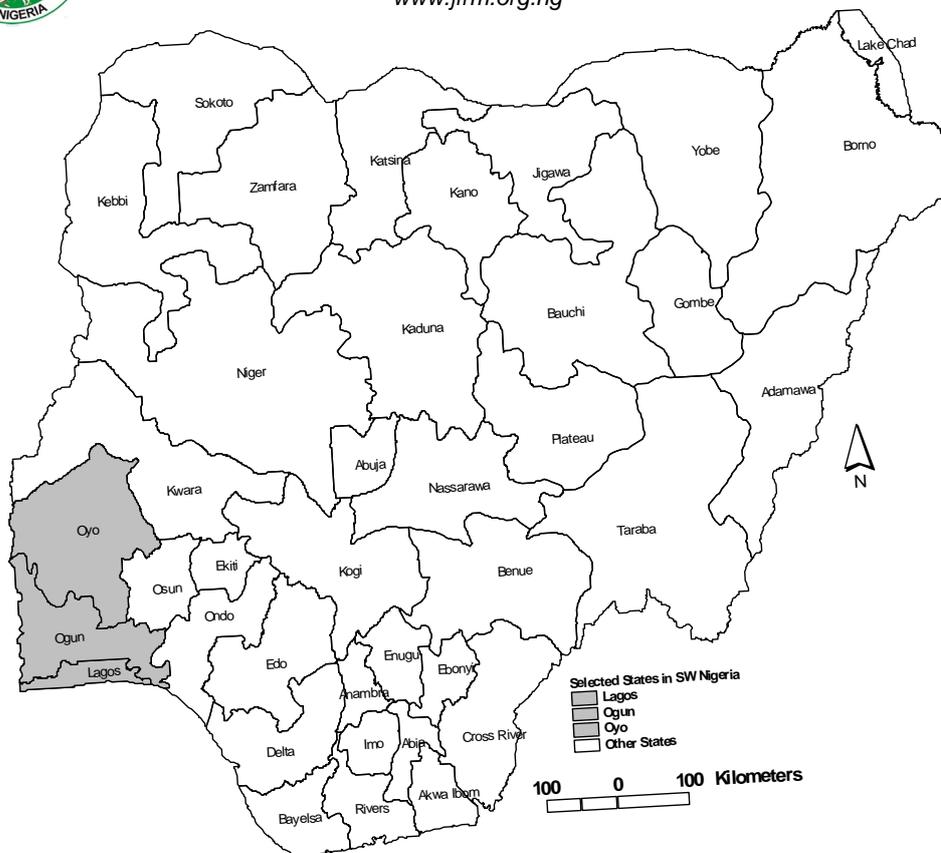


Figure 1: Map Showing the States in Southwestern Nigeria

Sampling and Data Collection Procedure

Data used for this study were mainly primary and were obtained from the rattan-based cottage entrepreneurs using structured questionnaire. Multi-stage sampling was used for the study. Three states were purposively sampled out of the six states that formed South western Nigeria because of the prevalence of the target group, that is, rattan-based cottage entrepreneurs, in such states. These states were Lagos, Ogun and Oyo. Purposive sampling technique was adopted to select the towns where at least five rattan-based enterprises are available. The sampled locations were Lagos comprising Maryland Cane Village, Ikeja, Ojota, Ketu, Agboju, Festac town; Abeokuta, Ilaro and Sango in Ogun and Ibadan in Oyo states. Random Sampling Technique was used to select

rattan-based cottage entrepreneurs as indicated thus: Lagos (59), Abeokuta (6), Ilaro (10), Sango (14), and Ibadan (32). The number of respondents (sample size) was determined on the basis of the number of rattan-based cottage entrepreneurs available in each purposively sampled town. A total of one hundred and twenty one (121) respondents were selected. Relevant information on socio-economic characteristics of the rattan-based cottage entrepreneurs as well as cost and returns of rattan-based enterprises were collected and analyzed.

Data Analysis

Analytical Techniques

The following analytical methods were used

- a. Descriptive statistics
- b. Budgetary analysis



c. Z-test

a. Budgetary analysis: Budgetary analysis involved the calculation of costs and returns to rattan-based enterprises.

b. Variable costs: Labour wages and salaries, value of raw canes, varnish planks, nails, electricity, transportation cost, etc.

c. Fixed Costs: Housing and equipment such as: Sheds, Knives, Hammer, rents, depreciation of structures etc. The straight line method of depreciation was adopted and is given by:

$$\frac{C - S}{Y} \text{----- (1)}$$

Where C = Cost of fixed assets in Naira

S = Salvage value

Y = economically productive years of fixed input

d. Gross Revenue (GR) =

Total output x price per unit of product ---- (2)

e. Gross profit (GP) = GR - VC ---- (3)

f. Net profit (NP) = GP - FC ---- (4)

g. Rate of return (ROR) $\frac{TR}{TC} \times 100$ ---- (5)

h. Rate of return on investment (RORI)

$$\frac{TR}{TC} \times (100) \text{----- (6)}$$

Testing of hypothesis

A null hypothesis (H₀) stating that rattan-based cottage enterprises are not profitable in south-western Nigeria was tested using the Z-test statistics.

The model for Z- test statistics was expressed as

$$= \frac{\bar{R} - \bar{C}}{\sqrt{\frac{R^2}{n_1} + \frac{C^2}{n_2}}} \text{----- (7)}$$

Where

Z = the Z value calculated

R = mean of return (₦)

C = mean of production (₦)

R₂ = Variance of return (₦)

C₂ = Variance of the cost (₦)

nR and nC = are sample size associated with returns and costs (nR and nC are same population size).

Results and Discussion

Socioeconomic Characteristics of the respondents

Table 1 shows the socioeconomic characteristics of rattan-based entrepreneurs in South western Nigeria. Rattan-based enterprises in the study area are male dominated; majority of the entrepreneurs are married (91.7%), acquired secondary education (83.5%) and had working experience of 11-20 years (54.5%). Majority of the rattan-based entrepreneurs are from Delta state most especially Urhobo and Kwale ethnic groups (50.4%). Foreign rattan-based entrepreneurs (Ghanaians) were also encountered during the study (11.6%). The implication of larger percentage of married people is that this will informed large household size that would make family labour to be available for business activities. Breman and Kessler (1995) noted that cottage industries can be carried on with the help of the members of the family. They do not require large premises, huge machines and great investment. Mhinte (2000) observed that increased members of household imply more availability of labour force in business. Educational level is very important as literates will be willing to try new innovations and embrace income diversity.



Table 1: Socio-Economic Characteristics of Rattan-Based Entrepreneurs In South Western Nigeria.

| Variable | Category | Frequency | Percentage |
|----------------------------|-----------------------|-----------|------------|
| Age (Years) | Less than 20 | 01 | 0.8 |
| | 21-30 | 09 | 7.5 |
| | 31-40 | 43 | 35.5 |
| | 41-50 | 49 | 40.5 |
| | Above 50 | 19 | 15.7 |
| Marital status | Married | 111 | 91.7 |
| | Single | 04 | 3.3 |
| | Widow | 04 | 3.3 |
| | Divorce | 02 | 1.7 |
| Educational level | No formal education | 01 | 0.8 |
| | Primary six | 11 | 9.1 |
| | Secondary | 101 | 83.5 |
| | Tertiary Institution | 08 | 6.6 |
| Ethnic composition | Yoruba | 18 | 14.9 |
| | Urhobo | 48 | 39.7 |
| | Kwale | 13 | 10.7 |
| | Edo/Ishan | 14 | 11.6 |
| | Ibo | 5 | 4.1 |
| | Ibibio | 5 | 4.1 |
| | Ikwere | 4 | 3.3 |
| | Ghanaian | 14 | 11.6 |
| Working experience (years) | Less than or equal 10 | 35 | 28.9 |
| | 11-20 | 66 | 54.5 |
| | 21-30 | 18 | 14.9 |
| | 31-40 | 02 | 1.7 |

Source: Field Survey, 2017.

The Profitability of the Rattan-Based Enterprises in South –Western Nigeria

The annual average cost and returns to rattan-based cottage entrepreneur in south-western Nigeria is presented in Table 2. Four profitability indices were employed to determine the profitability or otherwise of the enterprise. They include gross profit, net profit, rate of return (ROR) and rate of return on investment (RORI). In addition, Z-test analysis was used to test the null hypothesis

that rattan-based cottage enterprises are not profitable in south western Nigeria.

The average gross profit of ₦1,635,030,95 was obtained per annum by deducting total variable cost (TVC) from the total revenue (TR). The average net profit for rattan-based cottage entrepreneurs was ₦ 1,605,094,40. The rate of return was 686.43% while the rate of return on investment was 586.4%. This is in conformity with the report of economic analysis of trade in rattan (*Eremospatha macrcarpa*) and rattan products in Lagos state



(Momoh *et al.*, 1999). The result of the Z-test analysis used to test the null hypothesis that rattan-based cottage enterprise is not profitable shows that the Z-score was determined to be 1.96 at 1% probability level (Table 3). The implication of this result is that the null hypothesis is rejected while the

alternative hypothesis that rattan based cottage enterprise is profitable is accepted since it is significant at the tested level (1%). From all the profitability indices applied, it is evident that rattan-based enterprises in the study area were highly profitable.

Table 2: Annual Average Costs and Returns to Rattan Entrepreneur in South Western Nigeria

| Item | Value | Cost compound as %TC |
|--------------------------------------|--------------|----------------------|
| Gross revenue (GR) | 1,878,000 | |
| Variable cost (VC) | | |
| Raw canes | 66,381.30 | 24.25 |
| Labor | 123,169.05 | 45.00 |
| Planks, Varnish, Nails | 48,468.70 | 17.70 |
| Others | 5,750.00 | 2.10 |
| Total Variable Cost (TVC) | 243,769.05 | |
| Fixed Costs (FC) | | |
| Rent | 19,957.70 | 7.29 |
| Depreciation (straight line method) | 9,978.85 | 3.6 |
| Total Fixed Costs (TFC) | 29,936.55 | |
| Total Costs = TVC + TFC | 273,705.60 | |
| Profits/Returns | | |
| Gross Profit (GP) = GR-TFC | 1,635,030.95 | |
| Net Profit (NP) = GP-TFC | 1,605,094.40 | |
| Rate of return (ROR)% | 686.43% | |
| Rate of return on Investment (RORI)% | 586.4% | |

Source: Field Survey, 2017.

Table 3: Estimate of Z- value for testing the Null Hypothesis that Rattan Based Enterprise is not Profitable

| Item | Mean Value | Variance | Sample Size | Z- score | Cal. Z- value | Decision |
|---------|------------|----------------------|-------------|----------|---------------|----------------|
| Returns | 1878800 | 82553×10^8 | 121 | 1.96 | 6.10* | Reject |
| Cost | 285110 | 616683×10^6 | 121 | | | H ₀ |

Source: Field Survey, 2017.

P= 0.01

*Significant



Conclusion and Recommendations

The study examined the profitability of rattan-based enterprises in South western Nigeria using gross profit, net profit, rate of return (ROR) and rate of return on investment (RORI) profitability indices. In addition, z-test analysis was adopted to test the null hypothesis that rattan-based cottage enterprises are not profitable in the study area. Based on the findings rattan business is a veritable business enterprise with higher return on investment.

The study therefore recommends a policy interventions that aimed at encouraging the cultivation, development, sustainable management, processing and maximum utilization of rattan resource should be formulated and the enabling environment for implementation of such policy be provided in Nigeria. This will lead to entrance of new investors, reduce unemployment, contribute to poverty reduction, increase family income and enhance the contribution of forestry sub-sector to the National economic growth and overall development of the country. A multidisciplinary and well coordinated research programmes directed at rattan production, management, utilization and economic potentials be carried out with a view to establishing a comprehensive data base for the country

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