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PROFITABILITY AND CAPACITY UTILIZATION OF RICE MILLING ENTERPRISES IN ONDO STATE, NIGERIA

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ABSTRACT

The study estimated profitability of rice milling enterprises and determined their mills' capacity utilization in Ondo State of Nigeria. Data collected from 85 rice millers in eight Local Government Areas of the State were analysed, using simple proportions, budgetary techniques, financial ratios and ordinary least squares analysis. Average net returns/tonne per season ranged from N205.29 to N514.01 while returns/miller per season ranged from N5,776.02 to N14,165.66. Averages were N351.73 for the former and N10,326.02 for the latter with standard deviations of N93.49 and N2,448.17 respectively. Investment turnover and simple rate of return were 39.4% and 23.5% respectively while the operating ratio was N23.90 of operating expenses to N100.00 of revenue with an income/expenses ratio of N2.76 to N1.00. Mills' capacity utilization ranged from 8.5% to 18.9% with an average of 12.7% and a standard deviation of 3.4% per season. Regression results showed that cost of labour, cost of fuel and lubricants, maintenance expenses, mill's capacity utilization and rice yield having elasticity estimates of -0.109, -0.037, -0.164, 1.043 and -1.584 respectively explained 54.0% of the variability in gross margin earned by rice millers per season. Estimated coefficient of each regressor had a priori sign but only that of mill's capacity utilization was significant at the 1.0% level.

Key words: Rice milling, profitability, capacity utilization.

INTRODUCTION

The acute shortage of traditional foodstuffs such as yam, maize, sorghum and millet after the end of the Civil War in 1970 led to increased consumption of parboiled milled rice in Nigeria during the early 1970s. Rice, which before then was a dish for most Nigerian households only during special celebrations became a daily and regular households menu (Aderinola, 1983). According to Alao *et al*(1979), the "iyan eating" people of Ondo State were eating rice, at least, once in three meals daily. This led to increased importation of milled rice at very high costs which drained the nation's foreign exchange earnings that could be utilized to purchase capital goods needed for economic development. According to West African Rice Development Association WARDA (1993), the annual rates of growth in Nigeria's domestic rice production, total consumption, importation and value of imports during the 1970-90 decades were 8.9%, 11.1%, 28.3% and 34.2% respectively with a total value of rice

imports amounting to US$60.33 millions during the 1988-90 period.

However, the adoption of improved rice production technologies has led to increased domestic output of the commodity which Winslow and John (1989) claimed was assisted by high prices per tonne of rice paddy. Moreover, the low exchange rate of the Naira has pushed the cost of imported rice beyond the reach of most Nigerian households while the quality of locally processed rice has also improved substantially through the adoption of modern rice processing methods. Concomitant on the increase in paddy rice production in the country is the increase in the number of rice milling enterprises, especially in Ondo State where small-scale mechanical mills have taken over completely from the traditional method of hand pounding.

Although, small-scale rice milling enterprises provide gainful employment opportunities in Ondo State, knowledge about their economic performance, especially after the introduction of the structural Adjustment Programme (SAP) has remained a subject of enlightened guesses. Available empirical studies such as Osifo and Templeman (1969) found that the profitability of rice milling at Ilushin (in the defunct Bendel State) was constrained by low level of efficiency while Templeman (1971), working on rice milling enterprises in the former Western and Bendel States also found that although the firms made profits, they underutilized productive resources at their disposal. From their study of rice milling industries in the defunct Kwara and Northwestern States of Nigeria, Olayemi and Oni (1972) found that the seasonality and irregularity in the supply of rice paddy caused disparities in average rate of returns to investment in the areas of study. Judging from the estimated net return per tonne of processed rice in the former Kwara State, Adeniyi (1978/79) asserted that the rice processing units achieved satisfactory level of performance despite the very high processing costs. Further, he claimed that the high processing costs were attributable to underutilization of milling plants among other factors. Similarly, Vaughan, (1980) found that despite their underutilization, rice mills in Ekiti and Ijesha areas of Southwestern Nigeria handled sufficient quantities of rice paddy to capture very well, economics of size. Studies such as the foregoing ones need to be conducted for Ondo State.

Thus, this study was interested in examining the economic performance rice milling enterprises in Ondo State. Specifically, the study estimated costs and returns, computed selected financial ratios and determined the capacity utilization of rice mills in the State. Also, the study identified, quantified and estimated the variables which influenced the gross margin earned by rice millers in the State.

METHODOLOGY

Data Collection

Data were collected from all the eight-five functioning rice mills in the eight rice growing Local Government areas (LGAs) of Ondo State, using well structured and pretested questionnaire schedule in 1992. The LGAs covered were, namely, Ado-Ekiti, Akure, Ekiti-East, Ido/Osi, Ikere, Ikole, Irepodun/Ifelodun and Oye (See Appendix I for the distribution of the rice mills according to LGAs).

Owners of the mills were interviewed to collect information such as when the business was started, levels of investment in mill houses, the mills and engines, quantities and paddy handled per day and

the quantities of milled rice produced, length of milling operation per season, number and categories of labour employed, major and subsidiary occupations, inputs and their costs and receipts from milling operations. Notes were taken on observations made during visits to the rice mills while the weights of the units of measurement for both paddy and milled rice were also determined.

Methods and Techniques of Analysis

Frequency distribution and simple proportions were used to analyse socioeconomic data on ages, levels of formal education and subsidiary occupations of the respondents while the budgetary technique and financial ratios were used to analyse economic performance of the milling enterprises. Analysis of mills' regression analysis was employed to estimate the parameters of the factors influencing millers' gross margin.

Average costs and returns were estimated per tonne of milled rice and per rice miller in each LGA.

Average total cost (ATC) consisted of average fixed cost (AFC) and average variable cost (AVC). The AFC was made up of interest on borrowed capital (at 21.5%) and the depreciation on mill house, milling machine and engine. Depreciation values were estimated using the straightline method under the assumptions that buildings and milling machines had 15 and 20 years of economically useful lives respectively and zero scrap value. The AVC consisted of servicing and maintenance charges, costs of hired labour, imputed costs of family labour and costs of fuel and lubricants. The family consisted of the miller, his wife/wives and children. Costs were imputed for members of the family who worked in the mills because they had alternative jobs. Cost imputed was done by multiplying total mandays of labour contributed by family members in a season by the wage rate per manday of hired labour in the rice processing industry in the area. The average revenue (AR) consisted of cash receipts from milled rice only. The units of measurement at the rice mills was the kerosine tin which, on the average, weighed 0.018 tonne when filled with milled rice. Millers in Ado Ekiti, Ekiti-East, Ido/Osi, Ikole and Irepodun/Ifelodun and Oye LGAs received N10.00 per kerosine tin of milled rice while those in Akure and Ikere LGAs received N6.00 and N15.00 respectively for similar measure of milled rice. The differences in prices charged per measure of milled rice was due to differences in services rendered by millers as well as the competition for milling services during the season.

Equation (1) was used to compute the average annual[1] capacity utilization of rice milling machines per LGA:

$$AU_j = \sum_{i=1}^{n} TA_i \left| \sum_{i=1}^{n} PT_i \right|^{-1} |100| \ldots\ldots$$

Where:

A_{uj} = average capacity utilization (%) for the j^{th} LGA (j= 1,2, ..., 8);

TA_i = tonnes of rice paddy milled by the i^{th} milling enterprise in a season;

PT_i = potential tonnes of rice paddy which the i^{th} milling enterprise can handle in a season;

n = the number of milling enterprises in the j^{th} LGA.

Four types of financial ratios were computed to assess the economic performance of the milling enterprises. They were investment turnover, simple rate of return, operating ratio and income/expenses ratio. Investment turnover is obtained by dividing gross income by total investment outlay while the simple rate of return is net income divided by total investment. The two ratios were used to measure the efficiency with which capital investment was employed in the rice milling enterprises. The simple rate of return is particularly useful in ranking projects because it can be compared with the cost of capital.

Operating ratio is defined as operating expenses divided by total revenue and was used to assess the ability of the millers to control operating expenses. The income/expenses ratio, as the name implies is calculated by dividing income by total cost. It was used to measure the margin by which the value of milled rice output exceeded processing costs.

The model postulated to identify the quantifiable factors influencing the gross margins earned by rice millers in the State is presented by equation (2):

$$GM_i = f(CL_i, FC_i, CM_i, UC_i, YE_i, ER_i) \quad \ldots\ldots 2$$

Where: GM_i= the gross margin earned by the i^{th} miller in the State (N);

CL_i = cost of labour employed by the i^{th} miller (N);

FC_i = cost of fuel and lubricants used by the i^{th} rice miller (N);

CM_i = maintenance cost incurred by the i^{th} miller (N);

UC_i = annual capacity utilization of the i^{th} miller's milling machine (%);

YE_i = rice yield (i.e., the quantity of rice paddy processed to obtain one tonne of milled rice) (kg);

ER_i = error term associated with data collected from the i^{th} rice miller and was assumed to be normally distributed with zero mean and constant variance.

The linear and double logarithmic functional forms of equation (2) were tried, using the ordinary least squares (CLS) technique to estimate the parameters of the postulated regressors. Judging by evaluation criteria such as the adjusted coefficient of multiple determination (R_2), the F-value, magnitude and signs on the estimated coefficients, the linear rised double logarithmic function had a more plausible output than the linear function and was therefore adopted for this report.

RESULTS AND DISCUSSION

Pre-milling Operations

These include harvesting, threshing, drying, storage, parboiling and redrying of paddy- all of which affect the quality and quantity of milled rice (Surajit, 1981). The threshed paddy coming from the field has a moisture content of between 20.0% and 24.0% which should be reduced to at least 14.0% through drying to prevent deterioration in storage (Grist, 1975). Parboiling of rice paddy consists of soaking, steaming and redrying before milling. It is a very important pre-milling operation because it does not only reduce the broken percentage of rice kernels, it also enhances the nutritive value and cooking quality of milled rice (Robert, 1979; Alao, *et al*, 1979). Nevertheless, Grist, (1975) enumerated the disadvantages

of parboiled milled rice as being more proned to becoming rancid in storage; being harder to polish and having higher degree of softness during cooking than raw rice. It was observed that sampled rice millers dried and redried rice paddy in the sun either on concrete floors or no mats and that differences in parboiling and redrying skills greatly affected the quality and the yield of rice paddy, even of the same variety of rice and from the same milling plant.

Socio-economic Characteristics of Rice Millers

The age distribution, levels of education and subsidiary occupations of sampled rice millers are presented in tables 1 through 3. Table 1 shows that the age distribution of rice millers clustered around mid-forties and mid-fifties with the modal class being 46-50 years and constituting approximately 30.0 percent of the sample. Forty (40) millers (47.1% of sample) had a minimum of secondary education while only eight (9.4%) had no formal education (Table 2). The bulk (83.5%) of the millers had subsidiary occupations which included farming (42.4%); trading (23.5%); teaching (9.4%) and lumbering (8.2%) while only 16.5 percent of them had no subsidiary jobs as presented in Table 3. Millers who diversified into farming claimed that they grew food crops, especially rice to keep them busy off the rice milling season while those who were trading claimed that they were buying and selling foodstuffs which included rice paddy. These two categories of millers had the advantage of relatively longer period of rice milling than others. They stock-pilled their paddy for milling during the slack period. Millers who had no subsidiary occupations were the relatively elderly ones who were mostly pensioners.

Economic Performance

(i) **Costs and Returns per Tonne**

These are presented in Table 4. The table shows that AFC per tonne (AFC/t) ranged from N44.93 (in Ado-Ekiti LGA) to N123.31 (in Ekiti-East LGA) with a State average of N76.50/t and a standard deviation of N28.50/t. The relatively high AFC/t in Ekiti-East and Ikere LGAs was due to the fact that most millers in the LGAs were new entrants who had to acquire their fixed assets at relatively high prices because of the high rate of inflation in the economy. On the other hand, AVC/t had a range of N87.99 (in Akure LGA) to N216.01 (in Ikere LGA). The State's AVC/t was N134.27 with a standard deviation of N433.23/t. Table 4 also shows that on State-wide basis, AFC/t and AVC/t accounted for approximately 36.0% and ATC/t respectively.

The AR per tonne (AR/t) from milled rice varied from N333.33 to N833.33 and had a State average of N562.50 with a standard deviation of N134.25/t. Average net return per tonne (ANR/t) of milled rice was lowest (N128.29) in Akure LGA despite the fact that it had the least ATC/t of N128.04 because its milling charges per tonne (N333.33) was also the lowest. Similarly, Ikere LGA recorded the highest ANR/t of N514.01 because it charged the highest milling cost of N833.33 per tonne. An ANR/t of N351.73 was obtained for the State with a standard deviation of N93.19/t.

(ii) **Costs and Returns per Rice Miller**

The AFC per miller ranged between N1,217.37 (in Ado-Ekiti LGA) and N2,933.00 (in Irepodun/Ifelodun LGA) - giving an average of N2,199.50 per miller for the State as presented in Table 5. The table also shows that AVC per miller had a range of N3,070.23 (Ado-Ekiti LGA) to

N4,341.95 (in Ikere LGA) with a value of N3,825.17 per miller for the State. The standard deviation for APC and AVC per miller were N623.80 and N411.89 respectively. The standard deviation for the AVC per miller was smaller than that of the AFC because the former depended on the quantity of paddy handled within the same season while the latter was invariant to the quantity of paddy milled. Table 5 also show that the ANR per miller was highest N14,165.66) in Irepodun/Ifelodun LGA and lowest (N5,776.02) in Ekiti-East LGA. The ANR per miller for the State was N10,326.03 with a standard deviation of N2,448.17.

The remuneration accruing to a rice miller was not only dependent on the tonnes of rice milled and the milling charges per tonne, but was also dependent on the yield of the paddy. The yield of a variety of rice affects both the milling costs and the net revenue. Where the yield of paddy rice is low, milling costs per tonne is relatively high, thereby depressing the net revenue per tonne. The reverse is the case when the rice paddy has high yield - milling costs will be relatively low while the net revenue will be relatively high, all other factors remaining unchanged.

(iii) **Financial Ratios**

These are presented in Table 6. The table shows that the overall financial performance of rice milling enterprises in the State was fairly good: investment turnover and simple rate or return were 39.4% and 25.3 respectively while operating ratio indicates that for every N100.00 of revenue earned, approximately N24.00 of operating expenses were incurred. On the other hand, the income/expenses ratio shows that for every Naira of total milling cost, N2.76 of revenue was made. Judging by the fact that the prime lending rate for agriculture was 21.5% at the time of study, it could be said that millers in Ekiti-East and Ido/Osi LGAs who had simple rates of return of 10.1% and 20.8% respectively did not make profitable use of productive resources at their disposal (see table 6). The financial performances of rice milling enterprises in Ekiti-East appeared to have been the worst: it had the least investment turnover, simple rate of return and income per Naira of total cost. This was probably due to the fact that millers in the LGA had the highest operating expenses per Naira of revenue earned (Table 6) and because most of the millers were new entrants who had to acquire their assets at relatively high prices because of the high rate of inflation in the economy. This contrasts with the financial performance of millers in Ado-Ekiti LGA who had the best investment turnover, the simple rate of return and income/expenses ratio of 61.9%, 44.2% and N3.51 respectively. Their performance was not unconnected with the facts that they had the least average total investment outlay, average fixed cost and average variable cost inspite of a relatively high average revenue per season.

Mills' Capacity Utilization

The capacity utilization of the small-scale rice mills in the State was very low - ranging from 8.5% to 18.9% with an average of 12.7% and a standard deviation of 3.4% as presented in Table 7. These values show that the rice milling plants in the State were grossly underutilized during the period of study. Table 7 shows that the total tonnage of milled rice produced by the 85 rice millers was 243.8 which was just 0.2 tonne higher than the installed capacity of rice mills in Akure LGA alone that year.

This implies that the total quantity of paddy rice produced in the State in 1992 was barely sufficient to keep the millers in Akure LGA busy for about seven months that year. However, it is recognized that the cost of transportation of paddy and milled rice and the need to create employment opportunities in each LGA would not make the this practicable or advisable.

The factors responsible for the rather low capacity utilization of the rice mills were inadequate supply of paddy rice and the proliferation of rice mills with the attendant keen competition for the limited supply of paddy. The rather low capacity utilization of the rice mills explained why majority of the millers had subsidiary occupations.

Factors influencing gross margin earned by millers

Estimates of the factors affecting the gross margin earned by rice millers as hypothesized by equation (2) are presented by equation (3). The standard errors of estimated coefficients are in parenthesis.

$$LogGM_i = 9.645 - 0.109\ LogCl_i - 0.037 LogFC_i - 0.164\ LogCM_i \quad (3)$$
(0.180) (0.143) (0.169)

$$1.043^{*}\ LogkUc_i - 1.584\ LogYE_i \quad (3)$$

$R = 0.568$; $R = 0.540$; $F = 20.26^{*}$

* indicates that the estimated coefficient/value was significant at the 1.0% level.

Equation (3) shows that the 1.0%. Although only the estimated coefficient of $LogUC_i$ was significant at the chosen 1.0% level, the correlation matrix of the model showed the absence of multi-collinearity among the explanatory variables. Menta (1971) offers explanations for a condition like this by stating that it is possible that effects of individual regressors in an econometric model may not be significant on the regress and while their (regressors') "joint effect" as indicated by the F-value might be significant. The estimated coefficients of all independent variables had the *a priori* signs. For instance, the positive sign on the coefficient of $LogUC_i$ indicates that an increase in the annual capacity utilization of the rice mills would result in higher gross margin for rice millers, all other factors remaining unchanged. On the other hand, the negative sign on the coefficient of $LogYE_i$ shows that an increase in the quantity of paddy milled to obtain one tonne of milled rice would cause a reduction in the gross margin earned by millers because of the attendant increase in TVC, *ceteris paribus*. The GM was elastic with respect to mill's capacity utilization ($LogUC_i$) and inelasticity with respect to all other variables.

CONCLUSION

The findings of this study show that although the costs of rice milling were very high in Ondo State, the enterprise was still profitable. The net return of approximately N10,326.00 for the State represents the annual basic salary of a Civil Servant on salary grade level (GL) 06 step 12, that is, GL 06(12) in the country. The high costs of rice milling were caused by the rather low capacity utilization of the mills which

milling enterprise could be increased in the State include: (1) integrating milling or processing of other foodstuffs with rice milling; (2) backward integration of rice milling into paddy rice production and, (4) increasing paddy rice production (output) through greater use of swamp lands (for swamp rice production) and the use of irrigation water to have double rice growing seasons in the State. However, feasibility studies should be conducted into these areas to ensure their viability.

REFERENCES

Adeniyi, J.P (1978/79): "Modernizing Rice Processing Industry in Kwara State of Nigeria, *Journal of Rural Economics and Development*, Dept of Agric Econ & Dept of Agric Extension Services, University of Ibadan, Ibadan, Nigeria, 12(2): 65-77.

Aderinola, E.A. (1983). Food Import Demand Model for the Nigerian Economy, 1951-1979, Unpub. M.Sc. Thesis, Dept. of Agric. Econ., Obafemi Awolowo University, Ilé-Ife, Nigeria, 133pp.

Alao, J.A.; Odetola, T.O. & Ige, M.T. (1979). *Rice-milling in Ondo State (A Feasibility Study of Rice Milling in Ondo State)* Obafemi Awolowo University, Ile-Ife, Nigeria, 88pp.

Grist, D.H. (1975). *Rice*, Longman Group Ltd, London, 5-th ed., pp 441-445.

Kmenta, J. (1971). *Elements of Econometrics*, MacMillan Publishing Co., Inc, New York, p. 369.

Olayemi, J.K. & Oni, S.A. (1972). "A Comparative Economic study of Small-scale Rice Milling Industries in Kwara and Northwestern States of Nigeria", *Agric. Econ. Bull for Africa*, 15: 55-71.

Osifo, D.E. & Templeman, A (1969). *The Costs and Returns of Processing Rough Rice at Ilushin, Mid-Western Nigeria*, NISER, Ibadan, pp 20-25.

Robert, F.C. (1979). *Rice in the Tropics*, Westriew Press/Boulder, Colorado, 1-st ed., pp 68-80.

Surajit, K. (1981). *Principles and Practice of Rice Production*, John Kopkins Press: 528-530.

Templeman, A. (1971). *The Economics of Rice Milling in the Western State of Nigeria*, NISER/Afrika Studiencentrum, Ibadan/Leiden.

Vaughan, O. (1980). Economics of Rice Milling: A Case Study of the Ekiti and Ijesha Rice Milling Enterprises, Unpub M.Phil Thesis,
Dept of Agric Econ. Obafemi Awolowo University, Ile-Ife, Nigeria, 148 pp.

WARDA (1993). *Rice Trends in Sub-Saharan Africa (A Synthesis of Statistics on Rice Production, Trade and Consumption.*

Winslow, M.D and John, T.V. (1989). "IITA Varieties Play A Role - Rice Production Gains in Nigeria", IITA Research Briefs, Sept. p. 487.

Table 1: Age Distribution of Rice Millers in Ondo State, Nigeria.

Class interval (years)	Frequency (f)	Cummulative Frequency	(f) as % of total
30-35	3	-	3.5
36-40	9	12	10.6
41-45	15	27	17.7
46-50	25	52	29.5
51-55	11	63	12.9
56-60	10	73	11.7
Above 60	12	85	14.1
Total	85	-	100.0

Source: Field Survey, 1992.

Table 2: Educational Levels of Rice Millers in Ondo State, Nigeria.

Occupational level	Frequency (f)	Cummulative Frequency	(f) as % of total
No formal education	8	-	9.4
Primary education	37	45	43.5
Secondary education	23	68	27.1
Polytechnic education	6	74	7.1
University education	11	85	12.9
Total	85	-	100.0

Source: Field Survey, 1992

Table 3: Subsidiary Occupations of Rice Millers in Ondo State, Nigeria.

Occupation	Frequency (f)	Cummulative Frequency	(f) as % of total
Farming	36	-	42.4
Trading	20	56	23.5
Teaching	8	64	9.4
Lumbering	7	71	8.2
None	14	85	16.5
Total	85	-	100.0

Source: Field Survey, 1992.

Table 4: Estimated Average Costs and Returns per Tonne of Milled Rice in Ondo State, Nigeria (₦)

Local Govt. Areas (LGA)	Average Fixed Costs (AFC)	Average Variable Costs (AVC)	Average Total Cost (ATC)	Average Revenue (AR)	Average Net Returns (ANR)
Ado-Ekiti	44.93 (28.4)	113.30 (71.6)	58.23	555.56	397.33
Akure	40.05 (31.3)	87.99 (68.7)	128.04	333.33	205.29
Ekiti-East	123.31 (40.4)	182.21 (59.6)	305.52	555.56	250.04
Ido/Osi	82.47 (38.7)	130.37 (61.3)	212.84	555.56	342.71
Ikere	103.31 (32.4)	216.01 (67.6)	319.32	833.33	514.01
Ikole	83.12 (42.7)	111.62 (57.3)	194.74	555.56	360.82
Irepodun/ Ifelodun	77.67 (43.0)	103.12 (57.0)	180.79	555.56	374.77
Oye	57.14 (30.6)	129.55 (69.4)	186.69	555.56	368.87
State	76.50 (36.3)	134.27 (63.7)	210.77 (100.0)	562.50	351.73
SD*	28.51	43.23	67.72	134.25	93.49

Notes: *SD = Standard deviation
Source: Data Analysis Figures in parenthesis are as percentages of ATC

Table 5: Estimated Average Costs and Returns per Rice Miller in Ondo State, Nigeria.

Local Govt. Areas (LGA)	Average Fixed Costs (AFC)	Average Variable Costs (AVC)	Average Total Cost (ATC)	Average Revenue (AR)	Average Net Returns (ANR)
Ado-Ekiti	1,217.37 (28.4)	3,070.23 (71.6)	4,287.60	15,055.56	10,767,96
Akure	2,842.40 (31.3)	4,047.37 (68.7)	5,889.77	13,333.33	9,443.56
Ekiti-East	2,848.48 (40.4)	4,208.83 (59.6)	7,057.31	12,833.33	5,776.02
Ido/Osi	2,177.41 (38.7)	3,442.17 (61.3)	5,619.58	14,666.67	9,047.09
Ikere	2,076.45 (32.4)	4,341.95 (67.6)	6,418.40	16,750.00	10,331.60
Ikole	2,818.00 (42.7)	3,783.95 (57.3)	6,601.95	18,833.33	12,231.38
Irepodun/ Ifelodun	2,936.00 (43.0)	3,898.34 (57.0)	6,934.34	21,000.00	14,165.66
Oye	1,679.88 (30.6)	3,808.51 (69.4)	5,488.39	16,333.33	10,844.94
State	2,199.50 (36.5)	3,825.17 (63.5)	6,024.67 (100.0)	16,350.69 -	10,326.03 -
SD*	623.80	411.89	902.18	2,559.56	2,448.17

Notes: *SD = Standard deviation
Figures in parenthesis are as percentages of ATC
Source: Data Analysis

Table 6: Financial Ratios for Rice Milling Enterprises in Ondo State, Nigeria.

Local Govt. Areas (LGA)	Investment Turnout (%)	Simple Rate of Return (%)	Operating Ratio (%)	Income/ Expenses Ratio (₦)
Ado-Ekiti	61.9	61.9	20.2	3.51
Akure	41.7	25.7	26.5	2.60
Ekiti-East	22.5	10.1	32.8	1.82
Ido/Osi	33.7	20.8	23.5	2.61
Ikere	40.3	24.9	25.9	2.61
Ikole	33.4	21.7	20.1	2.85
Irepodun/Ifelodun	35.8	24.1	18.6	3.07
Oyc	45.9	30.5	23.3	2.98
State	39.4	25.3	23.9	2.76
SD*	11.5	9.6	4.6	0.49

Note: *SD = Standard deviation
Source: Data Analysis

Table 7: Capacity Utilization of Small-scale Rice Mills in Ondo State, Nigeria.

Local Govt. Areas (LGA)	Average Working Days in a Season	Average Actual Tonnage Milled	Average Installed Capacity (Tonnes)	Capacity Utilization (%)
Ado-Ekiti	204	27.1	244.8	11.1
Akure	203	46.0	243.6	18.9
Ekiti-East	190	23.1	228.0	10.1
Ido/Osi	205	26.4	246.0	10.7
Ikere	198	20.1	237.4	8.5
Ikole	197	33.9	236.4	14.3
Irepodun/Ifelodun	200	37.8	240.0	15.8
Oyc	199	29.4	238.8	12.3
State	199.5	30.5	239.4	12.7
SD*	4.5	8.4	5.8	3.4

Note: *SD = Standard deviation
Source: Data Analysis

Appendix 1: The Distribution of Sampled Rice Mills in Ondo State, Nigeria.

Local Government Area (LGA)	Number of Mills (N)	N as % of Total
Ado-Ekiti	5	5.9
Akure	9	10.6
Ekiti-East	11	12.9
Ido/Osi	7	8.2
Ikere	5	5.9
Ikole	21	24.7
Irepodun/Ifelodun	16	18.8
Oye	11	12.9
Total	85	99.9*

Notes: *indicates that addition is less than 100.0% due to rounding-up errors.

Source: Field Survey, 1992.