AN ANALYSIS OF MICRO, SMALL AND MEDIUM SCALE ENTERPRISES AND INCOME GENERATION IN NASARAWA STATE, NIGERIA: A STUDY OF RICE MILLING ENTERPRISES

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Abstract

The study examined the contribution of rice milling micro, small and medium scale enterprises to income generation in Nasarawa state Nigeria, using descriptive statistics and generalized linear models. The results revealed that four of the variables start-up capital (SuC), Quantity of Rice Produced (QRP), Quantity of Rice Sold (QRS) and Level of Education (LEDU) had positive impacts on income generation (INC) in the study area. It showed that an increase in SuC led to an increase in income generation by 0.397 per cent. An increase in QRP, QRS and LEDU led to an increase in income generation by 0.773, 0.296 and 0.015 per cent respectively. Expenses (EXPn) and Savings (SAV) had negative impacts on income generation. However, only SuC, QRP, QRS and EXPn had statistically significant impact on income generation. The study concluded that rice milling activities have significantly contributed to income generation in Nasarawa state, Nigeria. The study recommended that government should encourage the unemployed to engage in rice milling activities by making policies and introducing programmes to support rice milling activities. Provision of improved technology at affordable rates with extended repayment timelines or moratorium would encourage local rice millers. This would give locally produced rice an edge to compete in the global market thereby generating more income.

Keywords: Enterprises, Income, employment, Rice, milling

JEL Classification: L26, D31, E24, Q12, Q13

INTRODUCTION

Micro, Small and Medium Enterprises (MSMEs) have played a very important role in creating employment opportunities, and thus are major sources of income for many individuals in many economies. This has improved the overall welfare of these individuals and reduced the level of poverty within these economies. The experiences of various countries reflect the contribution

of MSMEs to economic development, and the models they adopted in boosting and revamping the sub-sector for greater impact in the economy. Such impact is seen in developed economies like the United Kingdom, Germany, the United States of America and developing economies like India, Malaysia, South Africa and Kenya. In the United Kingdom for instance, MSMEs constitute the largest proportion of the entire businesses representing over 95% of all businesses, and employ over 65% of the labour force as well as contribute over 30% of the Gross Domestic Product (GDP).

MSMEs make up more than 90% of the industries in Indonesia, Philippines, Thailand, Hong Kong, Japan, Korea, India and Sri Lanka. They account for 98% of the employment in Indonesia, 78% in Thailand, 81% in Japan and 87% in Bangladesh (Beyene, 2002). According to Ukeje (2003), MSMEs in Mauritius with government efforts reduced unemployment from 21% in 1983 to 1.6% in 1996. This demonstrates that the subsector in Nigeria (a country blessed with enormous human and natural resources) has the potential to generate employment and income for the teeming Nigerian population. One of such opportunities for Nigeria lies in the fact that the environment is conducive for the cultivation of many crops amongst which is rice.

Rice (*Oryzasativa*) is a staple found in the homes of all classes of people within the society and is the second largest consumed cereal in Nigeria after wheat. It provides for more than half the world's population about 80% of its food calorie requirements (Inuwa, Kyiogwom, Maikasuwa, & Ibrahim, 2011). Over the years, the country has depended so much on imports to fill the local supply gap which arose due to the inability of local producers to meet demand. Since the early 1980s, the federal government of Nigeria encouraged importation of rice from the United States and Brazil to meet the short fall in supply, making the county the world's second largest importer of rice. There is a national recognition of the value of rice in Nigeria and government is putting everything in place to increase local rice production in order to make the country self-sufficient. One of the strategies employed by government towards achieving self-sufficiency is the inauguration of Agricultural Transformation Agenda (ATA) under which the Rice Transformation Agenda (RTA) is being pursued. According to the ATA (2013) report, the annual rice demand in Nigeria was estimated at 5.2 million metric tons (MT), of which about 3.3 million MT of milled rice was produced locally, leading to a demand-supply deficit of about 2 million MT that was filled by imports. According to that report, Nigeria spends over NGN356 billion importing rice annually; an average of NGN1 billion every day. Rice importation exports jobs from Nigeria, transfers income and wealth, depresses local production, and is unsustainable given the rising demand for rice in Nigeria, currently put at 6% increase per year (Akinwumi, 2013).

Nigeria has vast amounts of land and favourable rice growing ecologies to produce upland, lowland and irrigated rice, and this has fostered the drive of the government under ATA to replace all the 2.1 million metric tons of milled rice imported annually into the country with locally produced rice. In 2013, the federal government commissioned the largest rice mill in West Africa which was set up by Olam Nigeria Limited, a multi-million dollar integrated mechanised rice milling facility located in Rukubi, Nasarawa State, fitted with the capacity to produce 105,000 metric tonnes of milled rice per annum. The attached rice farm cultivates 4,351 hectares of rice and employs up to 956 workers at the mill depending on the season. This has given the residents of Nasarawa state especially those situated around the rice mill a means of earning income.

Rice grows well in the three senatorial zones of Nasarawa state and most of the rice growing communities in and around the state are supported by Olam with group formation and training programmes in order to encourage Micro, Small and Medium (MSM) rice farmers and millers around the state. This is expected to curb the problems of low productivity, poor quality, and other disincentives to domestic rice production from the continued dumping of rice on the local market. Despite the recognition of the potential of the subsector by the government and the opportunities that are available for the MSME subsector to thrive in the economy, there has been little evidence of growth in the subsector. This is seen as the level of income inequality, unemployment and poverty continues to rise in the country. According to the World Bank (2018) report, the poverty situation in Nigeria has been on the increase; with poverty rates rising from up to 70% in 2017. The World Bank (2014) poverty report showed that Nasarawa state ranked 20 out of the 36 states in Nigeria and National Bureau of Statistics(NBS) (2019) revealed that the poverty headcount rate in the state was 57.3% in 2018 further dropping the ranking to 24.

In the third quarter of 2018, unemployment level in Nigeria was at a high of 25.7 %. and that of Nasarawa state rose from less than 10% to a high of over 38% within the period of 1990 to 2011 (Nyong, 2013). These situations continue to worsen as the dearth of means of income generation increases in the state. It is on these premise that this study is undertaken in order to analyse the contribution of rice mills to income generation in Nasarawa state. Therefore, the study seeks to find out if rice mills has contributed to income generation in Nasarawa state. Th*e following hypothesis is formulated for the purpose of testing:

H_0: Rice milling activities have not significantly impacted on income generation in Nasarawa State.

The study is organised into five sections, section one is the introduction and section two reviews literature related to the study. Section three explains the methodology while section

four captures the discussion of analysis and result. The last section of the work concludes the paper and presents policy recommendation as drawn from the study.

LITERATURE REVIEW

The Concept of Entrepreneurship

Entrepreneurship is concerned with wealth creation through the creation of value rather than its manipulation, It involves the destruction of existing market structures by the creation of new markets through the improvement of existing products or the development of entirely new products. Ogundele (2007) viewed entrepreneurship as a process involving recognizing opportunities in life and change simultaneously. He considered entrepreneurship as a process through which individuals identify opportunities, allocate resources and create value. It is more than simply starting a business. The creation of value is often through the identification of opportunities for change. Entrepreneurship as defined by Anga & Abimiku (2021) is a courageous action undertaken by an individual to utilize resources such as land, capital, labour, and his own ability to provide a product or a service. The entrepreneur does this with the sole aim of meeting a particular need of the society and thereby creating jobs. This impacts families of the employees and also generates profit as a reward for the entrepreneur. In order for the process of entrepreneurship to be complete and successful, value has to be created in terms of economic goods for growth and development.

The Concept of Micro, Small and Medium Scale Enterprises

The classification of businesses into large scale, medium scale or small scale is highly subjective. The criteria that have been used in the definitions include capital investments (fixed assets), annual turnover and gross output and the number of employees within the enterprise (Ajose, 2010). According to Ajose, MSMEs are enterprises that have an asset base (excluding land) of between 5 million naira and 500 million naira, and labour force of between 11 and 300 in their employ. This agrees with the definition of Small and Medium Enterprises Development Agency of Nigeria (SMEDAN, 2017). The SMEDAN (2007) policy document stated that, where there is a conflict between employment and assets-based criteria, the employment based classification would take precedence. This indicates the importance of the employment base of an enterprise in Nigeria which shows its capacity as other individual's benefit from the entrepreneurial actions of the entrepreneur. This study will reveal the importance of the employment base of enterprises and it's contribution to income generation in Nasarawa state, Nigeria.

The Concept of Income

According to Hicks (1946), income can be defined as the maximum amount that an individual can consume during a week and still expect that he will be able to consume this same amount in real terms in subsequent weeks. The monetary spending in real terms corresponds to the physical consumption of goods and services by the individual. This buttresses the point that income earned is meant to cover expenses for goods consumed. In economic terms, Smith (1776) defined income to be returns derived from factors of production. This implies that income is considered the fair rate of return which is received to compensate for the factors of production employed, which are land, labour, capital and entrepreneurship. This paper views income as an amount earned as a reward for labour which can be expended on consumptions, savings and investments.

THEORETICAL REVIEW

According to Kirzner (1973), an entrepreneur is someone who is alert to and perceives profitable opportunities for trade and exchange. Recognising the possibilities for market demand enables the entrepreneur to benefit by acting as a middleman who facilitates exchange. The Kiznerian theory emphasizes that opportunities for the entrepreneur exist due to access to additional information that others do not have, hence he takes advantage of the circumstance. Opportunities for entrepreneurs in Nasarawa state arise from the ban imposed by the Nigerian government on rice importation. Government has in the same vein encouraged local rice production in the state and country in order to increase demand for locally produced rice, thereby creating room for output expansion. This will in turn boost production and create new employment opportunities, thus improving the welfare of individuals in the society.

Trans-Theoretical Model of Financial Planning and Change theory propounded by Prochaska and Di Clemente (1982) and cited in Xiao, Newman, Liu, Prochaska, Leon, Bassett & Johnson (2013) explains how practitioners might help individuals change their financial behaviour and that financial planning helps influence financial behaviour. This will enable them save more, pay bills and be debt free. According to Muske and Winter (2004), planned financial behaviour is a good indicator of how an individual will actually behave financially. However, this theory is limited in the sense that most low income earners are already operating at an optimal level considering their financial constraints, therefore it is difficult to save as most of the financial planning programmes indicate. It is however important to note that with improved access to funds it is imperative to adopt financial discipline for growth and sustainability of MSMEs.

EMPIRICAL REVIEW

The studies of Inuwa, Kyiogwom, Ala, Maikasuwa and Ibrahim (2011), Adofu and Ocheja (2013), Adebayo and Nassar (2014), Hassan and Ahmad (2016) and Nursini (2020)

investigated the role of micro enterprises in employment and income generation as well as the profitability of rice milling activities in Kano State, Nigeria, Kogi State, Nigeria, Indonesia, Timergara City, Pakistan, and Ibadan metropolis of Western Nigeria respectively. They employed descriptive for the first two studies and theoretical and multiple regression respectively. These studies established in their findings that micro enterprises play a great role in income generation for the owners and employees and that these enterprises were the sole source of family income for the majority of persons. They found out that increase in the output of MSMEs can generate income for operators, which leads to increased expenditure, thus reducing the poverty gap. Their recommendations include strengthening of youth entrepreneurship, increased publicity of Government Business Development and Support Services, liberalization of access to and usage of business premises, access to credit, price control, reduction in cost of production, improvement of infrastructural facilities and provision of energy for the development of these micro enterprises.

Akingunola (2011), Afolabi, (2013) and Gbandi and Amissah (2014) carried out assessments of the effect of SMEs financing on economic growth in Nigeria between 1980 and 2010, and financing options and small and medium scale enterprises and economic growth in Nigeria. They used the spearman's rank correlation technique of analysis, descriptive statistics and Ordinary Least Square (OLS) in listed order, to estimate the multiple regression models to appraise certain financing indicators. The findings indicated a significant positive relationship between SME financing and economic growth in Nigeria via investment level. They also found lending rate to exert negative effects on economic growth. The studies recommended that accessibility to finances with low interest rates should be provided to small and medium scale enterprises in Nigeria in order to enhance economic growth. They suggested that the central authority should create an enabling environment for SME development and concluded that SMEs in Nigeria are very critical if they are to perform their role of growth and development of the nation's economy.

METHODOLOGY

The study adopted the field survey method and the case research design to study rice milling activities in Nasarawa state. The state is located in North Central Nigeria and is bounded in the North by Kaduna state, in the West by Abuja, Federal Capital Territory, in the south by Kogi and Benue States and in the East by Taraba and Plateau States and has Lafia as its capital. According to National Population and National Bureau of Statistics projection (2016), the population of the state is 2,523,400 people. The state has 13 Local Government Areas within three senatorial zones. Data for the study was collected from primary and secondary sources including SMEDAN reports, Nigerian Bureau of Statistics Publications, Central Bank

Publications, World Bank Publications, textbooks, journals, and other relevant publications. The target population of this study included all owners of Micro, Small and Medium rice mills within Nasarawa state. Multi stage sampling technique was adopted using a combination of single stage sampling procedures. Sampling procedures included expert, stratified and matched pairs probability sampling techniques, which were employed in listed order.

The study employed the use of Generalized Linear Models (GLMs) which offer a common framework for specification of linear regression, logistic, probit and poisson regressions, thereby facilitating the development of broad applicable tools for estimation and inference. The model is a flexible generalization of ordinary linear regression models which allows for the response variables (dependent) to have error distribution other than normal distribution (Muller, 2004).

Model Specification

Generalized Linear Model (GLM)

A non-linear GLM model which accounts for non-negative response variables was adopted and estimated. This was done by estimating a nonlinear specification for the activities of rice mills and income generation. A standard GLM has three components, namely random component, linear predictor and a link function. The random component specifies the conditional distribution of the response variable, given the explanatory variables. The distribution is typically from the exponential family. The linear predictor is a function of the regressors:
$\eta = \beta_0 + \beta_1 X_1 + \cdots + \beta_k X_k$ and a link function which transform the expectations of the dependent or response variable to the linear predictors. That is, the link function describes the relationship between the linear predictor and the mean of the distribution function (Shafrin, 2010).

Non-linear Specification of the Rice Mills – Income Relationship

The GLM specification of the non-linear relationship between rice mills and income is as expressed in equation 1:

$$INC_i = \exp(\beta_0 + \beta_1 SuC_i + \beta_2 QRP_i + \beta_3 QRS_i + \beta_4 EXPn_i + \beta_5 SAV_i + \beta_6 LEDU_i) + \varepsilon_i \text{---(1)}$$

Where;
INC = Income
SuC= Start-up capital
QRP = Quantity of rice processed per month
QRS = Quantity of rice sold per month
EXPn = Expenses incurred in month
SAV = Saving made from rice milling activities
LEDU = Level of education
exp = exponential

β_0 is the intercept, β_i $i = 1, 2, \ldots, 6$ are the parameters/coefficients to be estimated *and* ε *is* the error term

A priori Expectations

The *a priori* expectation is; β_1, β_2 β_3 β_5 and $\beta_6 > 0$, while $\beta_4 < 0$. That is, all the explanatory variables except expenses incurred in a month are expected to have positive effect on income in the study area, while expenses incurred in a month are expected to have a negative effect on income.

Decision Rule: Reject the null hypothesis if the probability value of the Wald Chi-square is less than 0.05 (5%) level of significance.

1. Results and Discussion

The descriptive analysis for this study covered the demographic and socio-economic characteristics of the entrepreneurs who were engaged in rice milling activities in Nasarawa state. It also captured information about the activities of rice mills with respect to income generation in the state. Questions on these phenomena are found in the appendix.

Table 1: Demographic and Socio-economic Characteristics of Respondents

Demographic Variables	Frequency	Percentage
Gender		
Male	298	74.5
Female	102	35.5
Age		
≤20	10	2.5
21-40	278	69.5
41-60	96	24.0
≥61	16	4.0
Family Size		
≤3	45	11.2
4-6	133	33.2
7-9	150	37.5
≥10	62	18.1
Educational Level		
No formal education	110	27.5
Primary	71	17.8
Secondary	151	37.8
ND/NCE	40	10.0
HND/First Degree	25	6.2
Masters/PhD	3	0.7

Source: Field Survey, 2019

The demographic and socioeconomic characteristics of the respondents are presented in table 1 using variables such as gender, age and level of education. The distribution of operators by gender showed that 74.5% of the respondents were male and 35.5% were female. This indicated that there were more male than female entrepreneurs found within the rice milling MSMEs in the study area. This could be attributed to the fact that the rice milling industry is a highly technical one and employs the use of heavy duty machinery which required physical exertion, more so that the machines used within the study area are mostly crude in nature. Secondly, the predominant presence of male entrepreneurs within the rice milling enterprises could be attributed to the fact that they bear responsibilities as family heads which strongly motivates them to engage in productive activities.

The table presented the age distribution of respondents indicating that 2.5% of the entrepreneurs were below the age of 20, 69.5% were within the age range of 21 – 40, while those that fell within the range of 41 – 60 and above 60 years constituted 24% and 4%, respectively. This showed that entrepreneurs in the micro, small and medium scale rice milling industry in Nasarawa are mostly youth and that the industry holds employment opportunities for the unemployed youth in Nigeria. This further implied that based on the natural endowment and opportunities inherent in Nigeria, youth are able to get themselves engaged in entrepreneurial activities within the agro allied MSMEs rather than wait on government for jobs which are not forthcoming. Furthermore, since 69.5% of the entrepreneurs are youth in their productive age, there is potential for increased output which will generate more income and expansion opportunities as they expend their energy on productive activities. This would further lead to employment generation, hence income generation.

The result showed that 55.5% of the respondents, representing more than half of the sampled population, had household sizes of more than 7 dependents. The least category was respondents who had household sizes of less than 3 dependents. This revealed that there is a high level of dependence in Nasarawa state where the economy is characterized by large household sizes and this factor spurred entrepreneurs towards engaging in ventures profitable enough to sustain their households.

The educational level of respondents captured in the table revealed that 27.5% had no formal education, 17.8% had primary education, while 37.8%, 10%, 6.2% and 0.7% of the respondents had secondary education, National Diploma/National Certificate of Education, Higher National Diploma/First Degree, and Masters/Doctorate degrees, respectively. The information collated showed that 72.5% of respondents had attained different levels of education which served as advantages to them as they could transmit their knowledge into their enterprise for better output. Again, this implies that respondents who had attained the highest level of education were able to find employment and income generation means within the MSME subsector

alongside people that had no formal education. It further revealed that job opportunities are available within the MSME sub sector for the unemployed in Nasarawa state. Rather than have graduates wait on the government to provide jobs, they could create jobs or engage themselves in the MSME subsector.

Table 2: Sources of Rice Mill Financing in Nasarawa State

Variables	Frequency	Percentage
Source of your start-up capital		
Personal Funds	357	89.2
Informal Loan	29	7.2
Bank Loans	14	3.6
Government aid	0	0.0
Total	**400**	**100**
Access to loan facility/government support for existing businesses		
Yes	147	36.8
No	253	63.2
Total	**400**	**100**
Source of financing existing business (loan/government support)		
Micro finance	16	10.9
Friends	9	6.1
Family	35	23.8
Adashi	84	57.2
Government support	3	2.0
Total	**147**	**100**

Source: Field Survey, 2019

The result in table 2 indicated the distribution of the source of "start-up capital" for the entrepreneurs. It showed that 89.2% of the enterprises surveyed were established using the entrepreneurs' personal funds (savings), while 7.2% and 3.6% were established with informal loans (from family, friends, informal groups among others) and bank loans, respectively. This means that government support was not accessible to entrepreneurs to start up new businesses. The entrepreneur is then restricted to operating within the capacity of funds he could generate, or not operate at all if he could not raise start-up capital. This led most entrepreneurs to operate below capacity as a result of insufficient funds even when there are ready markets and opportunities for expansion. In cases where individuals could not raise money for investment, the business then remained a far-fetched dream.

The table also captured the number of respondents who were able to access loans in the course of their business activities. Only 36.8% of the entrepreneurs were able to access loans or get

support from the government for their business, while 63.2% of entrepreneurs were unable to access loans or government support for their business. The distribution of source of loans for MSME operators in the table showed that 10.9% of MSME operators were able to get loans from Microfinance institutions, 6.1% from friends, while 23.8%, 57.2%, and 2% were able to get family support, loans from *adashi* and government intervention, respectively. 57.2%, which represents more than half of the respondents, obtained their loans from *adashi* indicating that it was the major source of funding accessible by rice milling MSMEs in Nasarawa state.

4.1 Rice Mills and Income Generation in Nasarawa State

The basis of comparison is income level before and after the entrepreneur engaged in rice milling activities. The data was analysed using descriptive statistics to ascertain whether or not rice milling activities had increased the income level of participants and is interpreted in this section.

Table 3: Average Monthly Income Before and During Rice Milling Business in Nasarawa State

Income Level (Naira)	Before Rice Milling Frequency	Percentage (%)	During Rice Milling Frequency	Percentage (%)
Less than 10,000	84	21.0	12	3.0
10,000-49,999	153	38.3	80	20.0
50,000-99,999	142	35.5	93	23.3
100,000 and above	21	5.2	215	53.7
Total	400	100	400	100

Source: Field Survey, 2019

Table 3 has showed that prior to joining rice milling industry, the respondents were earning very low incomes per month. During this period, the percentage of respondents that earned less than ₦10,000.00 dropped from 21% to 3%, while those who earned between ₦10,000.00 – ₦49,999.00 dropped from 38.3% to 20%. The proportion of entrepreneurs who earned between ₦50,000.00 – ₦99,000.00 dropped from 35.5% to 23.3% and those that earned above ₦100,000 increased from 5.2% to 53.7%. This revealed that the rice millers' income increased overtime in the industry as the business expanded and progressed.

Table 4: Capital Invested in Rice Milling Business At Start and At Present

Income Level (Naira)	At Start Frequency	Percentage (%)	At Present Frequency	Percentage (%)
Less than N1million	375	93.7	253	63.2
N1million to N5million	24	6.0	115	28.8
Above N5million	1	0.3	32	8.0
Total	400	100	400	100

Source: Field Survey, 2019

Table 4 showed that at the time of commencement of rice milling business, 94% of the entrepreneurs started with less than one million naira and 5.7% of the entrepreneurs started their businesses with between one and five million naira, while only 0.3% representing one enterprise started with above 5 million naira. At the time of the survey, only 63.2% of the entrepreneurs had less than one million naira invested, while 28.8% had between one and five million naira and 8% of the entrepreneurs had above 5 million naira invested. It is hereby clear that most rice millers had been able to expand their businesses as amount invested in the business increased overtime as shown in the percentage of growth in initial capital invested at the start of the business. The growth is attributed to the viability and profitability of the venture which created room for expansion as most entrepreneurs indicated during the interview that they expand their business by re-investing profit realised. The increased improvement in the industry in recent times is attributed to the increased demand for rice after the federal government of Nigeria placed a ban on rice importation, causing an increase in the demand for local rice in the market.

Analysis of the Impact of Rice Milling Activities on Income Generation

The study estimated the Generalised Linear Model (GLM) to show evidence or otherwise of the contribution of rice milling activities to income generation in Nasarawa state. The results of the analysis are presented in table 5.

Table 5: Result of GLM Showing the Effects of Rice Milling Activities on Income Generation in Nasarawa State

Variable	Coefficient	Std. Error	Z-statistic	Prob.
SuC	0.39693	0.10211	3.89	0.000
QRP	0.77297	0.30082	2.57	0.002
QRS	0.29638	0.10378	2.86	0.004
EXPn	-0.17829	0.04669	-3.82	0.000
SAV	-0.05672	0.12514	-0.45	0.650
LEDU	0.01530	0.03867	0.40	0.693
C	1.30451	0.51280	2.54	0.011
Chi-square	30.11			
Prob.(Chi-square)	0.000			
Deviance	0.235			

Source: Authors' compilation using STATA 15

The result of the GLM in table 5 revealed that four of the variables (SuC, QRP, QRS and LEDU) had positive impacts on income generation (INC) in the study area. A 1% increase in

startup capital (SuC) led to an increase in income generation by 0.397%. Also, a 1% increase in the quantity of rice produced and quantity sold led to an increase in income generation by 0.773% and 0.296% respectively. It also showed that the higher the level of education, the higher the level of income generated from rice milling activities by 0.015%. On the other hand, expenses incurred (EXPn) had a negative impact on income generation in the study area. The inverse relationship between the explanatory variables and income indicates that a 1% increase in expenses incurred decreased the level of income generation by 0.178%. This implies that as more money was expended, less was available for reinvestment or business expansion which ultimately affected the rate of returns.

The *a priori* expectation is that β_1, β_2 β_3 β_5 and $\beta_6 > 0$, while $\beta_4 < 0$. That is, all the explanatory variables except expenses incurred in a month were expected to have positive effect on income in the study area, while expenses incurred in a month is expected to have negative effect on income. However, the result indicated that savings also had a negative effect on income while all other explanatory variables conformed to *a priori* expectations. Two of the variables (SAV and LEDU) had insignificant impacts on income generation in the study area. Judging from the probability value of Chi-square test (0.000) the result indicated that the joint effects of the variables was statistically significant at 5% level of significance given the probability value of 0.000 which is less than 0.05 level of significance.

The results of the Deviance statistic which measures the goodness of fit of a model (i.e how well the model fits the data) had a value of 0.235 which is less than 0.3 threshold. This implies that the model has a good fit and that the model predictions are close to the observed outcomes, hence, estimates emanating from the model are reliable and unbiased. Since the probability value of the Chi-square (0.0000) was greater than 0.05 ($p>0.05$), the null hypothesis was rejected. The study concluded that rice mills have significantly impacted on income generation in Nasarawa State.

DISCUSSION OF FINDINGS

The study found that rice mills activities had significant impact on income generation in Nasarawa State. Sources of capital, quantity of rice produced, quantity of rice sold and level of education of the respondents had positive impact on income generation, while expenses and savings had negative impact on income generation in the study area. The findings indicated that an increase in start-up capital would result in an increase in income generation. Entrepreneurs stand better chances of expanding their business and generating more income from the rice milling activities when they have access to cheap capital. The analysis shows that some of the entrepreneurs had been able to expand their businesses as they ploughed back certain parts of

their profit towards the expansion of their business, causing an increase in economic activities and thus rise in income level.

The outcome of the descriptive statistics also showed that 93.7% of the rice millers started out their businesses with less than one million naira and at the time of the study more than 30% of the entrepreneurs had grown their capital above one million naira. Also no respondent admitted to starting up his/her business with up to five million naira at the start of the business. However, 8% of the enterprises had up to five million naira invested at the time of this study. This is a clear indication that firms were able to grow their capital overtime, all things being equal, and this resulted in the expansion of businesses. This is attributed to the fact that available finance for investments boost firm's capacity for expansion which would in turn create employment and income generating opportunities for the stakeholders. Prior to joining rice milling industry, 60% of the respondents were earning very low incomes of less than 49,999 naira monthly. The proportion of respondents who were low income earners decreased over time and high income earners increased.

Entrepreneurs obtained their income from rice milling activities and as such, the quantity of rice produced and sold had a direct impact on income generation. The higher the quantity produced and sold, the higher the level of income. For instance, a miller who produced and sold 100 bags of rice earned more income than a miller who produced and sold 60 bags of rice given a uniform price. Regarding expenses and savings, the study revealed that the more expenses rice millers incured, the less investible funds they had to invest in their business and thereby reduced their level of income. Similarly, the higher they saved, the less investible funds and consequently, the less income they generated from the rice milling activities. An increase in the quantity of rice produced and quantity sold also led to an increase in income generation, and this could be attributed to the fact that as rice was being produced, demand for it was created and sales triggers the production cycle to repeat itself, hence the market thrives on turnover.

The findings also showed that the level of education impacted positively on income. It is generally expected that the more educated someone is, the more efficient he would be in his business. Millers who were educated would add skill and value to improve production and marketing skills which would earn them more money compared to those who were less educated. The results indicated that most of the entrepreneurs had attained different levels of education. The higher the level of education, the higher the level of income they generated from rice milling activities, implying that attaining education was an advantage to the entrepreneur. Education empowered entrepreneurs by improving human resource quality and

efficiency as the entrepreneur is able to apply knowledge to production processes and marketing skills which eventually enhanced his chances of increased income generation in order to raise the country's economic status. This implies that when labour is trained then productivity will increase among entrepreneurs.

The findings also indicated that expenses incurred and savings had negative impact on income generation in the study area, the latter showing a deviation from *a priori* expectations. An increase in expenses incurred decreased the level of income generated, likewise an increase in savings. This implies that as more money is expended or saved, less is available for reinvestment or business expansion which ultimately affects the rate of returns. The expenses could be triggered by high cost of machine maintenance, sourcing for alternative power supply, multiple taxation, high cost of getting rice paddy at off season periods, transportation among other demands. The large household size of the entrepreneurs was also a factor responsible for higher rate of consumption than reinvestment or savings. Overall, the study established that rice milling activities had significant impact on income generation in the study area.

CONCLUSION AND POLICY RECOMMENDATIONS

The findings of the study indicated that there was an increase in income generated among respondents as rice milling businesses grew. Results from the analysis confirmed the underpinnings of the economic theory of entrepreneurship which stated that government intervention is crucial to the success and survival of MSMEs. Micro, Small and Medium Enterprises are an antidote to unemployment and a means for income generation, empowering the populace. Access to employment and income creates value addition and improves the welfare of an individual. From the findings of the study, it is evident that rice millers within Nasarawa state have been able to improve their welfare and that of their family and dependents by engaging in rice milling activities. Furthermore, rice milling activities also created income for other ancillary workers associated with the business. It is therefore the submission of this study that one of the preconditions to reduce income inequality in Nasarawa state and in Nigeria at large is to encourage micro, small and medium scale enterprises.

Based on the findings of the study, the following recommendations are made:

1. Government should encourage the unemployed to engage in rice milling activities by making policies and introducing programmes in order to attract more people to the rice industry. This can be done by providing improved quality seedlings for rice farming and improved technology for milling, respectively, on terms which entrepreneurs can afford including giving them an extended timeline for payments as well moratorium on interest. This will encourage local rice milling MSMEs and give locally produced rice

an edge to compete with the imported rice, thereby generating more income for the economy.

2. Government intervention in terms of financing and providing subsidies should be targeted at grassroots where the intervention is most needed by decentralising the channels of interventions to states, LGAs, villages and even wards so that it is widely spread and can reach areas of need. This will boost and expand rice milling activities within the state.
3. High level of expenses was incurred by rice millers as a result of lack of certain crucial amenities like power supply. Therefore, the government is advised to support rice milling by ensuring that essential amenities like electricity and water, as well as other infrastructures are made available for rice millers so as to reduce the cost of operation. This could be implemented in stages starting with the rice cluster so that the majority of the rice millers can benefit from the initial intervention.
4. Rice millers should channel more of their savings towards investment rather than consumption so that they can expand their businesses increasing the quantity of rice produced and sold, thereby improving their income. They are also advised to continue and improve on their thrift since that is the major source of capital easily accessible to them.

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APPENDIX

QUESTIONAIRE

Instructions: Please tick or fill using Capital letters only where necessary.

SECTION A: PERSONAL DATA

1. Gender: Male [ ] Female [ ]
2. Age: ≤ 20 [ ] 21 - 40 [ ] 41 – 60 ≥ 61 [ ]
3. Family size: <3[ ] 4 – 6 [ ] 7 – 9 [ ] >10 [ ]
4. Educational Level: No formal Education [ ] Primary [ ]Secondary [ ] ND/NCE [ ] HND/FIRST DEGREE [ ] Masters [ ] Others (please specify)……..……..
5. Can you read and write Yes [ ] No [ ]

SECTION B: BUSINESS INFORMATION

6. How long has your business been in operation? Less than 5 years [ ] 5 -10years [ ] 10- 15 years[ ] more than 15 years[ ]
7. Do you belong to the association of local rice millers? Yes [ ] No [...]
8. What are the benefits of being a member of the association?.....
9. How many rice mills did you start with? .....
10. How many rice mills do you have now? ,.....

SECTION C: RICE MILLS AND INCOME GENERATION

11. What was your start-up capital? >less than 1.50 million[ ] >less than 50 million[ ] >less than 200 million [ ]
12. What was the source of funds for your start-up capital? Informal Loan [ ] Personal Funds [ ] Ploughed back Profit [ ] Bank Loan [ ]
13. How much capital is invested now? >less than 1.50 million[ ] >less than 50 million [ ] >less than 200 million [ ]
14. Did you have any source of income before you started working at the rice mill? Yes [ ] No [ ]
15. Has your income improved since you started operating/working at the rice mill? Yes [ ] No [ ]
16. What is your average daily income? .....
17. Do you have access to loan facility? Yes [ ] No [ ]
18. If yes what is your source of loan? Commercial Bank[ ] .Micro finance [ ] Friends [ ] Family [ ] Adashi [ ]
19. Have you benefitted from any government financial aid? Yes [ ] No [ ]

20. Has this loan/aid helped you to expand your business? Yes [ ] No [ ]
21. How much do you save monthly? .....

SECTION D: CHALLENGES

22. Which amenities affect your business? Electricity [ ] Water [ ]Good roads [ ]

    Others [ ]

23. What other factors affect your business? List.

    (i) .....
    (ii) .....
    (iii) ……
    (iv) .....
    (v) …….

Name of interviewer: ……

Signature……..

Date……