Socio-Economic Analysis of Soyabeanutilization in Akure South Local Government Area, Ondo State

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Abstract: This study was carried out for the purpose of analyzing the socio-economic of soyabean in Akure South Local Government Area of Ondo state with the objective of examining the socio-economic characteristics of the respondents Data were collected from one hundred (100) respondents drawn from five communities using well structured questionnaire. The data were analyzed using frequency distribution, percentages and regression model while gross margin was used to determined the profitability of the utilization operators. The outcome of the study revealed that 76% of the respondents involved in utilization were females, about 82% of the respondents were married and 87% were educated. All 100% of the respondent reported that utilization increase their annual incomes. The gross margin result revealed that N11, 877 accrued to a respondent per month in the study area. The outcome of regression analysis revealed that the level of education, occupation, family size, experience and annual income had positive correlation with quantity of utilization whereas, the negative correlation in the storage, inadequate finance, lack of producing farmers, inadequate enlightenment campaign programme by extension workers were emphasized as the problems confronting the utilization in the area. It is recommended that the government should put in place adequate and efficient credit facility to enhance operational activities, provide regular and continuous enlightenment campaign programme by extension workers to the respondents and assist in the regular provision of adequate storage facilities and power supply for preservation of the products.

Keywords: Utilization, Socio-economics, Gross margin and regression.

INTRODUCTION

Soya bean (*Glycine max)* is one of the most important grain legumes in the world, particularly in Nigeria. Soyabean is a primary source of vegetable oil and protein with superior over other legumes like groundnuts and cowpea [1].

[2] reported that soyabean oil is highly digestible contains high polyunsaturated fatty acid (85%) with no cholesterol. The study also shows that the mature seed contains vitamin's as thiamine, choline, niacin and vitamin K necessary for normal body growth and development. soyabean has been ranked as the highest among leguminous crops in terms of protein quality. Benue state, in the central Nigeria has contributed largely to the production of this cheap source of plant protein [3-5]. Despite the high nutritional value of soyabean relative to other legumes, lack of knowledge of its uses has limited its adoption and production in non – traditional area of cultivation [6].

Numerous effort have been undertaken to promote the production of the crops in Nigeria most especially in the densely populated parts of south western Nigeria [7]. This is to integrate it into the existing farming system and the nutritional status of the people [6]. Farmers need to have good knowledge about production and utilization of soyabean so as to improve their family nutrition; at a relatively lower cost.

According to [8]; Soyabeans are mainly used as intermediate food, feed, and industrial inputs, not final consumer products, therefore remain invisible in the economy. [9] Soyabean a derived demand for meat. Soyabean has risen to become a leading crop because the income elasticity of meat is high. Consumers shift their consumption from grains such as rice and wheat to meat and other animal products as personal incomes rise around the world The future of soyabean production and soyabean utilization is bright according to [10] because of the growing demand for protein as new opportunities emerged with biodiesel that portend a significant new market for soyabean oil. [11] the use of soyabean include human consumption, industrial uses and animal feed. It is used as important sources of oil and protein. Unripe seeds are eaten as vegetable and dried seeds are eaten whole, split or sprouted, roasted seeds are used as coffee substitute soyabean oil is used industrially in the manufacturing of paints, lindleum, oilcloth, printing inks, soap, insecticide and disinfectants. Other by products of soya oil are used as wetting and stabilizing agent in the food cosmetic pharmaceutical, leader paint, plastic, soap and

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detergent industries. Meal and soy bean protein are used in the foam and for many other purposes. The straw can be used to make paper stiffer than that made from wheat straw [12].

As reported by [13] soyabeans occupy a premier position as a world crop because of its high protein content and because it is a rich source of edible vegetable oil. Also, proteins are most important for body building when not enough energy containing foods are consumed, the body also uses protein for energy. He added that one economic way of preventing under-nourishment, which is within the reach of many people, is to consume protein in the form of soyabean

As a measure to combat inadequate protein consumption low income earning Nigerians, because series of training and courses have been held early in 1986 on the use of soyabeans. Despite this, its utilization still suffers a great set back. There for, this tends to address the following questions study what are the problems associated the utilization of soyabean in Nigeria? Why are household not utilizing the soya bean, despite its high protein content? What are the benefit to be derived from its utilization?

Hense, objective of this study is to analyze socio-economic of utilization of soyabean in Akure South Local Government Area of Ondo State.

METHODOLOGY

Area of the Study

The study was carried out in Akure South Local Government Area of Ondo State. The Local Government area falls with in the tropical rain forests, with about 1500mm rainfall per annum and good rate of sunshine. This enables people in the area to embark on agriculture, predominantly as their occupation. They produce some agricultural product such as yam, cassava, melon, soyabean, grains, tomatoes and also some cash crops.

Sampling Technique

Purposive sampling technique based on the intensity of soyabean utilization was used to select five communities out of various communities and villages. They are Isikan, Shagari village, Imafon, Igushi, Ilado and twenty respondents were selected in each community making a total of a hundred respondents that took into consideration representative ward in the Local Government Area.

Method of Data Collection

Data were collected through the use of structured questionnaire. Each questionnaire elicits information on the demographic variables including age of the respondents, family size, level of education, marital status, and non – demographic variables which include source of income, factor influencing its utilization, monthly income, expenses on soyabean and problem associated with its utilization.

Method of Data Analysis

The data collected from the respondents were analyzed using descriptive statistics such as, frequency table, percentage (%). The inferential statistics used was regression analysis.

Also gross margin analysis was employed to estimate the cost and returns of soyabean utilization.

$GM = TR - TVC$

Where,

GM = gross margin

TR = total revenue

TVC = total variable cost

Ordinary least square regression analysis was used and the inferential statistics drawn. This method was used to estimate functional relationship between the dependents variables and independent variables with the implicit function relating to the income (Y) generated as expressed thus.

And the explicit model presented in linear form thus

$$Y = (B0+B_1X_1+B_2X_2+ B_3X_3 + B_4X_4 + B_5X_5+ B_6X_6 + B_7X_7 + B_8X_8 = B_9X_9 = e1)$$

Where

(Y) = income generated

X_1 = Gender

X_2 = Marital Status

X_3 = Level of education

X_4 = Occupation

X_5 = Family size

X_6 = Experience

X_7 = Age

X_8 = Annual income

e_i = sample error term

Bo = constant, B1 to B8 are coefficient

RESULTS AND DISCUSSION

Table **1** showed that (76%) of the respondents were females while 24% were males. The implication of this is that female were more involved in soya beans utilization in the area of study.

Table 1: The Outcome of Socio-Economic Characteristics of the Respondents

Gender	Frequency	Percentage (%)
Male	24	24.0
Female	76	76.0
Total	100	100

Source: field survey 2010.

Table **2** showed that 82% of the respondents were married, this may imply that majority of the respondents will be interested in the business which will give more return in order to adequately take care of their family. It also implied that there is high tendency for the married people to be more involved in the utilization of soya bean as source of food.

Table 2: Marital Status

Marital Status	Frequency	Percentage (%)
Single	11	11.0
Married	82	82.0
Widow	6	6.0
Divorced	1	1.0
Total	100	100.0

Source: field survey, 2010.

Table **3** showed that majority (97%) of the respondents has formal education. This may imply that education enhances their enlightenment to adapt soya bean utilization probably because of the nutrient value and a cheap way of consuming protein other than the costly animal protein source.

Table **4** showed that 69% of the respondents were traders with 16% civil servants. This was imply that apart from that fact the majority of them are well to do, they are more enlightened and have better understanding of the need to consume soya bean as source of protein.

Table 3: Level of Education

Level of Education	Frequency	Percentage (%)
No formal education	3	3.0
Primary education	20	20.0
Secondary education	29	29.0
Tertiary education	27	27.0
Adult education	21	21.0
Total	100	100.0

Source: field survey, 2010.

Table 4: Occupation

Occupation	Frequency	Percentage (%)
Civil servant	16	16.0
Trading	69	69.0
Livestock farming	15	15.0
Total	100	100.0

Source: field survey, 2010.

Table **5** showed the inputs of respondents on the usage of soyabean for various products. Soyabean could be utilized in diverse way as 35%, 15% 12% and 5% indicated. Soya milk, soya cake, soya garri and soya moimoi respectively while 33% quoted it for use in other products. It could be deduced that soya bean serves as an alternative source of protein given the costly value of protein of animal sources.

Table 5: Soya Bean Products

Soyabean Product	Frequency	Percentage (%)
Soya Milk	35	35.0
Soya garri	12	12.0
Soya moinoi	5	5.0
Soya cake	15	15.0
Others	33	33.0
Total	100	100.0

Source: field survey, 2010.

Table **6** indicated that 54% of the respondents used personal savings to finance their soya bean processing operations while 36% of the respondents used finances

from friends and relative, banks and cooperative society.

Table 6: Main Sources of Finance

Financing source	Frequency	Percentage (%)
Personal saving	54	54.0
Friend and relative	10	10.0
Commercial banks	11	11.0
Cooperative society	25	25.0
Total	100	100.0

Table **7** showed that 64% of the respondents used hired labour for processing their soyabean. The implication is that soyabean processing is labour intensive and can thus serve as means of providing employment for the people.

Table 7: Sources of Labour

Labour source	Frequency	Percentage (%)
Family labour	36	36.0
Hired	64	64.0
Total	100	100.0

Source: field survey, 2010.

Table **8** indicated that majority (100%) of the respondents reported that soyabean utilization increase their annual income thus implying their satisfaction that the enterprise could be a worthwhile venture.

Table 8: Effect on Annual Income

Increase income	Frequency	Percentage (%)
Yes	100	100.0
No	-	-
	100	100.0
Total	100	100.0

Source: field survey, 2010.

Table **9** revealed that 63% of the respondents process less than 1 bag of soyabean in a week. This confirmed the earlier postulation that their scale of operation could be small.

Table **10** showed that 62% of the respondent spent more than N4000 on processing per week.

Table **11** indicated that 64% of the respondent's monthly revenue was less than N20,000. The implication of this was that they are small scale producers.

Table 9: Quantity of Soyabean Processed Per Week

Quantity	Frequency	Percentage (%)
Less than 1 bag	63	63.0
1 bag	23	23.0
1.5 bag	13	13.0
Total	100	100.0

Source: field survey, 2010.

Table 10: Cost of Processing Per Week

Cost of processing	Frequency	Percentage (%)
₦2,000.00	19	19.0
₦3,000.00	10	10.0
₦4,000.00	9	9.0
More than ₦4,000	62	62.0
Total	100	100.0

Source: field survey, 2010.

Table 11: Revenue Derived from Soyabean Processing Per Month

Revenue (N:K)	Frequency	Percentage (%)
Less than N20,000	64	64.0
20,000.00	12	12.0
30,000.00	10	10.0
45,000.00	14	14.0
Total	100	100.0

Source: field survey, 2010.

Table **12** showed that majority (97%) of the respondents submitted that soyabean processing is lucrative. This implies that they derived high income from the business and thus it is a good means of livelihood to the operators.

Table 12: Positive Effect of Soyabean Processing Business

Lucrative	Frequency	Percentage (%)
Yes	97	97.0
No	3	3.0
Total	100	100.0

Source: field survey, 2010.

Table **13** revealed that 61% of the respondents submitted that soyabean is lucrative on the basis of what they considered as high profit margin.

Table 13: Reasons for Soyabean Processing as Being Lucrative

Reasons	Frequency	Percentage (%)
High profit margin	61	61.0
Low profit margin	8	8.0
Ease of handling	21	21.0
Other	10	10.0
Total	100	100.0

Source: field survey, 2010.

Table **14** revealed that 30%, 28% of the respondents encountered problem of price instability, inadequate finance, high cost of labour and transportation respectively. This imply that 100% of the respondents faces one problem or the other in the process of their operations.

Table 14: Problems Encountered

Problems	Frequency	Percentage (%)
Inadequate finance	28	28.0
Poor storage facilities	15	15.0
` Transportation	10	10.0
Price instability	30	30.0
High cost of labour	17	17.0
Total	100	100.0

Source: field survey, 2010.

Table **15** indicated that 51% of the respondents reported that credit facilities should be provided by the Government or commercial banks, while 31% suggested that there should be price stability and that there should be adequate storage facilities. The implication was that all those measures if properly adopted could assist utilization.

Table 15: Suggested Solutions

Solutions	Frequency	Percentage (%)
Provision of credit facilities by the government, coop or commercial bank	51	51.0
Provision of adequate storage facilities by the government	10	10.0
There should be good road network	31	31.0
There should be stable price	31	31.0
Total	100	100.0

Source: field survey, 2010.

RESULT OF GROSS MARGIN ANALYSIS

The result of gross margin analysis is as stated; in Table **16**.

Table 16: Result of Gross Margin Analysis

Number of Respondents	N100
TVC = Total Variable	N848,000
AVC = Average Total Revenue	N15,100,000
$ATR = \frac{TR}{R}$	N151,000
GM = TR – TVC (N157,000 – N8480)	142,520

Source: calculated from field survey.

The gross margin was N15,000,000 per annum for all the soyabean utilization respondents and gross margin per respondent per annum was N142,520 while the gross margin per respondent per annum was N11,877. Having this margin regular and on monthly basis could be adjudged to be relatively profitable, more so that about 61% of the soyabean processor revealed it to be lucrative, with 97% showing that the activity has positive effect on their household and virtually all of them has other occupation of ranging from civil service, trading and livestock farming

Table **17** the outcome of ordinary least square regression analysis is showed that the coefficient of variability called R – Squared of the income generated from the processed soya bean products was 0.526. This implies that 52.6% of the variability in income generated from processed soya bean products is accounted for by the specified variables. This shows that the specific explanatory variable explained 52.6% of the total variations in the respondents' income generated from soyabean processing utilization activities is accounted for by the specified variables. It could be seen that the variables (X_1) gender, (x_2) marital status, (x_5) family size, and (x6) Experience were significant at 5% level. However, variables such as (x_3) level of education, (x_4) occupation, (x_7) age and (x8) annual income were not significant at 5% level.

The positives sign associated with level of education (X_1), occupation (X_2), family size (X_3), and experience (X_4), annual income (X_5) imply that an increase in the value of those variables will increase the quantity of soya bean utilized. On the other hand the negative sign associated with gender (X_1), marital status (X_2) and age (X_3) imply that an increase in the

Table 17: Regression Analysis Result on Soya Bean Utilization

Factors	Estimate coefficient	Standard Error
Constant	5.499	1.224
Gender (X_1)	2.146	0.422
Marital status (X_2)	7.38	0.360
Level of Education (X_3)	0.220	0.142
Occupation (X_4)	0.227	0.129
Family sixe (X_5)	0.298	0.088
Experience (X_6)	0.910	0.053
Age (X_7)	0.370	0.035
Annual income ($_{X8}$)	0.0000004	0.0000
R^2 squared	0.526	
R^{-2} Adjusted R – squared	0.484	
F Statistics	12.598	
5% level of significance		

Source: computed from data collected in the field survey, 2010.

value will reduce and affect the rate of soya bean utilization.

From the result, it could be observed that all the independent variable except marital status (X_2), level of education (X_3), occupation (X_4), family size (X_5) experience and income (X_7) respectively are important variable affecting the rate of s utilization in the study area.

Recommendations

Based on the findings from this study, the following recommendations are made:

- Government should put in place adequate and efficient credit facility to support soyabean production and processing
- Provision of regular and continuous enlightenment campaign by extension workers to the respondents and the entire people in the study area in order to encourage them into soyabean processing and to increase the level of consumption among the people.
- Adequate storage facilities and power supply should be made available to avoid deterioration of soyabean and wastage of soymilk, increases the return of the utilizers.
- Road links to the soya bean sources should be rehabilitated by the appropriate authorities in order to reduce transportation cost.

CONCLUSION

The outcome of this study showed that the largest proportion (76%) of soya beans users were female, about (82%) of the respondents were married and (87%) of them were educated.

The outcome of regression analysis revealed that the level of education, occupation, family size, experience; and annual income had positive correlation with quantity of utilized whereas, the gender, marital status and age have negative correlation in the rate of s utilization.

It was discovered that most of the emphasized problems found in the study area are poor storage inadequate finance, lack of soyabean producing farmers, inadequate enlightenment campaign programme by extension workers. All the problems encountered notwithstanding, the study still show that utilization of soyabean could still be profitable in the area of study.

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