



EFFECT OF SOME SOCIO-ECONOMIC VARIABLES ON MARKETING MORINGA (*Moringa oleifera* LAM) IN MAIDUGURI METROPOLIS, NIGERIA

ZIRA BD* • LAWAL S

Department of Forestry and Wildlife, University of Maiduguri

*Corresponding Author's Email. zirabamidel@gmail.com

ABSTRACT: The study examined the effect of socio-economic variables on *Moringa oleifera* marketing in Maiduguri Metropolis, Maiduguri State, Nigeria. Multistage sampling technique was employed for the selection of the respondents. Ninety (90) marketers of *M. oleifera* were selected. Data were collected with the aid of questionnaire. Data collection were analysed using range, mean, standard deviation, coefficient of variability and regression model. The results of the study revealed that the marketers of *M. oleifera* had a mean age of 44 years; mean household size of 8 individuals, mean years of education of 5; mean years of experience of 17 and mean income level of ₦986,0510 per annum. Furthermore, age, formal, education, household size, years of experience and level of income were found to have positive relationships with the volumes of *M. oleifera* sold in the area. The study recommends that marketers should be encouraged by the local and state.

Keywords: Socio-economic, Effect, variables, *M. oleifera*, Marketing.

Received: February 6, 2020 • Returned in Revised form: May 10, 2020 • Accepted: June 20, 2020

1. INTRODUCTION

Moringa oleifera is a Non-timber forest product (NTFP) which is growing fast around all major countries in Africa with the increase in population and consequent rising demand for *M. oleifera*. *Moringa oleifera* producers will need to increase their farms in future in order to cope with this rising demands (Ogar, 2017). However, after the production of an enterprise, its marketing follows and marketing is one of the vital aspects of forestry. Forestry involves mostly production of goods and services and production is incomplete if goods and services do not reach the final users (consumers) (Mohammad 2015). The fact remains that urban forestry will complement rural supplies and food will need to continue to be produced in and around cities where there were more people. Urban forestry will come with the additional benefit of substantially reducing some economically wasteful and environmentally unfriendly costs associated with transportation and packing of

forestry products, as is especially the case when such goods are produced far from their consumers (Adetunde, 2009; Zira, and Gupa, 2020)).

Socio-economic variables are important human attributes that enhance the efficiency of *M. oleifera* marketing. They also assist in getting the clear understanding of the behaviour of individuals as well as providing a hint towards explaining their disposition that could improve their productivity (Augustine *et al.*, 2007). Many researchers have examined the effects of the socio-economic characteristics of their respondents on the output of the forestry enterprises (Kinn, 2011). It is on this note that this paper aims at describing and determining the effect of some socio-economic characteristics of the *M. oleifera* marketers on the volume of sales of the commodities in Metropolitan Maiduguri, Nigeria.

2. METHODOLOGY

The study was conducted in Maiduguri Metropolitan Council, Borno State. The population was estimated using the annual growth rate of 3.3% provided by National Population Commission (NPC, 2006) was put at 2,895,306 people by the year 2019. Maiduguri metropolis covers an area of 499Km² lying within latitude 11⁰ 58'37"N to 12⁰ 05'26"N and longitude 8⁰ 29'48"E and 8⁰ 33'45"E (NIPOST, 2009). Majority of the inhabitants are traders, with civil servants, transporters and those engaged in *M. oleifera* production, seedling production and land developers. A large number of people within the metropolitan area are engaged in marketing of non-timbers forest products including *M. oleifera*. Three (3) markets were selected due to intensity of *M. oleifera* marketing. These markets include Tasha Bama, Custom and Monday Market; (Maiduguri Municipal). The lists of registered *M. oleifera* Sellers in these markets were collected from the leaders of these marketers these lists served as sampling frame for the selection of the marketers. A Random sampling technique, using the random number generated using Microsoft Excel worksheet was used to select 90 *M. oleifera* marketers representing 25% of 517 members in the list. Data for the study were generated through the use of questionnaire administered to the selected *M.oleifera* marketers. Data collected include information on the socio-economic characteristics such as age, years of education, household size, years of experience and level of income. The techniques used for achieving the objectives of this study were range (minimum and maximum), mean, standard deviation, coefficient of variability and multiple regression model.

The Coefficient of variability was given (2010) as:

$$CV = \frac{SD}{\text{mean}} \times 100 \dots \dots \dots 1$$

For determining the socio-economic characteristics of *M. oleifera* marketers affecting their volume of sales:

$$Y=f(X_1, X_2, X_3, X_4, X_5) \dots \dots \dots 2$$

$$Y=a+b_1X_1+b_2X_2+b_3X_3+b_4X_4+b_5X_5+e \dots \dots 3$$

Where

Y=Total amount of *M. oleifera* (Kg) sold

X₁= Age of *M. oleifera* marketers (years).

X₂ = formal education attainment (years).

X₃= Household size (number).

X₄= Years of experience in *M. oleifera* marketing (years).

X₅= Level of income (#/annum).

e= error term

f= functional notation

The specified multiple regressions were tried using the functional forms of linear, exponential, semi-log and Cobb-Douglas. The functional form which gave the best

fit in terms of R² value, the number of significant independent variables, the appropriateness of the signs on the parameter estimates, t-values, F-ratio and the theoretical *a priori expectations* were selected as the lead equation. The model that best fitted the relationships between *M. oleifera* sold and socio-economic variables of the marketers was the exponential, based on the criteria stated earlier.

3. RESULTS AND DISCUSSION

3.1 Some Socio-economic Characteristics of *Moringa oleifera* Marketers

The socio-economic variables identified include age, household size, level of education, years of experience and income level of the *M. oleifera* marketers. These variables are presented in Table 1. The results of the study in Table 1 revealed that *M. oleifera* marketers had minimum and maximum ages of 20 and 70 years respectively with a mean of 44 years. The coefficient of variability of 24% indicated that there was no wide variability in terms of age having an average age of 44 is indicator that the marketers fall within the active age capable of undertaking all the mental and physical activities needed for marketing *M. oleifera*. Furthermore, they fall within the age that would enhance accurate, prompt and effective decision making. They are also expected to be in the position to effectively utilize available resources to them (Noel *et al*, 2012).

Household size refers to the total number of individuals who live within and feed from the same pot. According to NPC, 2006, these individuals think of themselves as a unit. The results in Table 1 revealed that the household size of *M. oleifera* marketers ranged from 1 to 19 with a mean of 8. The coefficient of variability of 53% indicates that there was relatively wide variability in terms of number of individuals in the household of the *M. oleifera* marketers. However, the mean household size of 9 individuals was beyond the national average of 5 reported by National Bureau of Statistics (NBS) (2010). High number of household size could be due to the fact that *M. oleifera* marketers in the study area practice polygamy and having large household size is a source of pride and a compelling force to actively engage in income earning activities to cater for the household needs. Ogunniyi and Oladejo (2011) reported that efficiency increases with increase in household size.

The educational status of the *M. oleifera* marketers allows them to easily understand and apply new practices, objects and techniques in the marketing processes. The higher the level of one's education, the faster the rate of apprehension and application of an innovation. The results in Table 1 indicated that the

formal educational attainment of *M. oleifera* marketers ranged from minimum of 0 to maximum of 18. The mean of their educational attainment was 5.8 and a coefficient of variability of 81%, indicating that there was very wide variability among the marketers in terms of formal educational attainment. Since the level of formal education attainment of the *M. oleifera* marketers was low, then definitely they might not apply and utilize new technologies properly. They may so much rely on the local or indigenous education for marketing *M. oleifera*.

Years of experience refers to the period over which the *M. oleifera* marketers spend in marketing the commodity. Expectedly, the longer the years of experience, the more the marketer subsequently improves on the efficiency of marketing. The results in Table 1 revealed that the years of experience of the marketers ranged between 2 and 45 years with an average of 17 years. The coefficient of

variability of 47% showed that there was wide variability among the Marketers with respect to the years of experience. The average years of experience of 17 implies that some of the *M. oleifera* marketers in the study area have relatively high years of experience. Ideally, they are expected to changing economic conditions and adopt new ideas to warrant efficient activity.

Income level refers to the amount of money obtained from *M. oleifera* marketing in a year. The results in Table 1 revealed that the marketers recorded a minimum and maximum level of income of N349,800 and N6,570,850, with an average of N786,500. The coefficient of variability of 85.6% is implying that there was a very wide variability in terms of income earned by *M. oleifera* marketers.

Table 1: Some Socioeconomic Characteristics of *M. oleifera* Marketers in Maiduguri Metropolis.

Variables	Min.	Max.	Mean	SE	CV (%)
Age	20	70	43.5	1.37	24
Household	1	19	8.00	0.93	53
Years of Education	0	18	5.8	0.75	81
Years of Experience	2	45	17.4	0.93	47
Income Level	273,501	2,081,650	9,850	29,355	85.6

Source: Field survey, 2019

3.2 Effect of Some Socio-economic Variables on Amount of the Commodity Sold

The results of the effect of socio-economic variables of the marketers on the amounts of *M. oleifera* sold using regression are presented in Table 2. The results indicated that 86 % of the amounts of *M. oleifera* sold were affected by the socio-economic variables of the marketers included in the model. The intercepts (constants) amounting to 0.760 was the amount of *M. oleifera* that could be sold in kilogramme without considering the socio-economic variables of the marketers. The F-value of 82.893 was significant at 1% level indicating that the variables included in the models have explained the amount of *M. oleifera*. The variables included in the model include age, formal education, household size, years of experience and level of income.

The effect of age of the marketers on the amounts sold of *M. oleifera* was presented in Table 2. The regression coefficients with respect to age was positive. It was statistically significant at 5% meaning that as the marketers advance in age, they sell higher amounts of the commodity, all things being equal. This result could be substantiated with the fact that the mean age of the marketers fell within the active labour force years to undertake the rigorous activities needed in marketing the

commodity. The result revealed that the coefficients of formal education was positive but not significant. Impliedly, the more years' marketers spent in obtaining formal education, the more of the amount they sold. They therefore utilize to the large extent, the formal education they have acquired and still, need to acquire more formal education, as indicated by their average years of formal education.

Household size is one of the socio-economic variables that may affect the amount of *M. oleifera* marketers. The results in Table 2 revealed that the coefficients of household size as positive and significant at 1% for *M. oleifera* sold. Impliedly, the more the household size, the more the amount of the commodity Sold. The marketers who have high household size, market higher amounts of the commodity. This could be attributed to the fact that the more the household size the more the marketer is propelled to concentrate and Sell more of the commodity as they have more family members to cater for. Abubakar (2011)) reported that the reason behind large household size could be due to polygamous nature of the Hausas and their dependence on family as source of labour.

Years of experience may affect the amount of the commodity marketed. The results indicated that the regression coefficients for years of experience was

positive though not significant. The implication of this result is that years of experience improves the amount of *M. oleifera* sold, all things being equal.

The level of income earned by marketers of *M. oleifera* may propel them to keep on engaging in marketing of the commodity. The results in Table 2 indicated that the

regression coefficients of level of income was positive and significant at 1% level. The result implies that as the income level of the marketers of *M. oleifera* increases, the amounts they market also significantly increase. The result further revealed that as income increases marketers may use part of it in prompt payments on the goods supplied to them.

Table 2: Regression Results for the *M. oleifera* sold (Kg) Against selected Socio-Economic Variables of the Marketers.

Variable	Coefficient	T-ratio	SE	P-Value
Constant	0.760	9.330	0.081	0.000***
Age (X ₁)	0.294	3.261	0.090	0.024**
Formal Education (X ₂)	0.084	2.317	0.036	0.632
Household Size (X ₃)	0.931	4.181	0.223	0.000***
Years of Experience (X ₄)	0.053	0.423	0.125	0.473
Level of Income (X ₅)	0.324	3.945	0.082	0.000
R- Square Adjusted	0.853			
F-Value	82.893***			

Source: Field Survey Data, 2019 *** = (P<0.01), ** = (P<0.05) and ^{ns}= Not significant

4. CONCLUSION AND RECOMMENDATIONS

This study investigated the effect of some socio-economic variables on the amounts of *M. oleifera* marketed in Maiduguri metropolis, Nigeria. The study showed that age, formal education, household size, years of experience and income level of *M. oleifera* marketers had positive relationships with the amounts of the commodity marketed. The study Therefore recommends that the Governments at Local and State levels; and non-governmental organisations in the State should device means of encouraging the marketers to enroll in adult formal education classes very close to them. This could be achieved through enlightenment by direct contact with the marketers through their associations.

REFERENCES

- Abubakar, Y. (2011). Economic Analysis of Watermelon Based Production System In Oyo State, Nigeria. *ARPV Journal of Agricultural and Biological Sciences*, 6(7): 53-59.
- Adetunde, R (2009). Resource-use Efficiency in Urban Agriculture in South western Nigeria, *Tropiculture* 27(1):49-53
- Augustine, I.A, Okuneye, P.A., Momoh, S. and Aromolaran A.B. (2007): Socio economic factors affecting insecticide use in cowpea production in Maiduguri State, proceeding of the 9th annual conference of the Nigeria Association of Agricultural Economists (NAAE), held at Abubakar Tafawa Balewa University, Bauchi, 5th-8th November, 2: 449-456.
- Kinn, L. (2011): Analysis of Factors Affecting the Technical Efficiency of Cocoa farming in the Offinso district, Ashanti region, Ghana, *American Journal of social and Management* 2 (2): 208-216.
- Mohammad, U.A. (2015) Evaluation of Marketing Margin of Soyabeans in Kuje Area, Abuja, Nigeria, Proceedings of the 11th Annual National Conference of National Association of Agricultural economists, (NAAE), Federal University of Technology, Minna, 30th November to 3rd December, pp152-157.
- National Bureau of Statistics (NBS) (2010): National Manpower Stock and Employment Generation Survey, Household and Micro Enterprises (Informal sector), www.nbs.org.ng. National Employment visited on 15th December, 2019. p51.
- National Population Commission (NPC) (2006). Provisional Census Figure for Maiduguri State. Federal Government of Nigeria, Abuja.
- NIPOST (2009): Maiduguri State from wikipedia, www.nipost.gov.ng/post code, visited on 2nd April, 2013. pl.
- Noel, I.U., Eze, C.C., Onyegocho, S.U.O., Ibekwe, U.C. and Korie, O.C. (2012): Determinants of net returns from garden egg production in Imo State, Southeast, Of Nigeria, *International Journal of Agriculture and Rural Development*, 15(3):1258- 1263.
- Ogunniyi, L.T. and Oladejo, J.A. (2011): Technical efficiency of tomato production in Oyo State, Nigeria, *Agricultural Science Research Journal*, 1(4): 84-91.
- Ogar, H.J. (2017): Profitability and Technical Efficiency Moringa production in Goronyo, Sokoto State, Nigeria, *Continental Journal of Agricultural Science*, 3:7-14.
- Zira, B.D and Gupa, M.A (2020): Determinant of Agroforestry Practitioners Income in Sem-Arid Region of Nigeria. *Asian Journal of Agricultural Extension, Economics and Sociology*.38 (2): 67-72.