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SOCIO-ECONOMIC ANALYSIS OF *Bridelia micrantha* IN LAGOS STATE, NIGERIA

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ABSTRACT

This study investigated the socio-economics, parts most commonly used and the cost and returns of investment on Bridelia micrantha. Data were collected through structured questionnaire. One hundred (100) copies of questionnaire was administered to Bridelia micrantha traders in 2 selected markets in Lagos. The markets were Ikotun and Ojuwouye markets at Alimosho and Mushin Local Government Areas (LGAs) respectively. Data were analysed using descriptive statistical tools and budgetary analysis. Results revealed that marketing of Bridelia micrantha was female dominated and involved people in their active age period of 45 years and above. Majority (84.0%) of the respondents were married, source their funds from personal savings (66.0%) with formal education (45.0%) up to at least primary level. Most of them purchase their products through both wholesales and retails. It was also revealed that the part that is commonly used and requested for at the study areas was the bark. The result of the monthly profitability in the two areas showed that it was a bit profitable at Ojuwoye market which was 0.93% than Ikotun market which was 0.92%. Following the result of this study, it can be concluded that the respondents had little knowledge of Bridelia micrantha products in traditional health care and nutrition. Adequate extension services should be provided on the importance and uses of Bridelia micrantha for treatment of human illness.

Keywords: Socio-economics, Bridelia micrantha, Profitability, Utilization

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INTRODUCTION

Bridelia micrantha is a semi-deciduous to deciduous tree up to 20 m tall with a dense rounded crown and tall, bare stem; bark on young branches grey-brown and smooth, on older branches and stems dark brown and rough, cracking into squares; branches often spiny; slash thin, fibrous, and brown to dark red (Orwa *et al.,* 2009). *Bridelia micrantha* (Hochst.) Baill. is a small to medium sized tree belonging to the family Phyllanthaceae (formerly Euphorbiaceae), commonly known as mitzeerie or coastal golden leaf (Bosch, 2012). The genus name "Bridelia" was coined in honour of Samuel Elisé e Bridel-Brideri (1761–1828), a Swiss-German muscologist (Schmidt *et al.,* 2002). The species name "micrantha" means "small-flowered" (Schmidt *et al.,* 2002), in reference to the species' very small flowers in auxillary clusters. The genus Bridelia includes approximately 60–70 species found throughout tropical and subtropical regions of the world, particularly Africa and Asia (Ngueyem *et al.,* 2009). Several Bridelia species are used in traditional medicine throughout the world as an anthelmintic, anti-amebic, anti-anemic, anti-bacterial, anti-convulsant, antidiabetic, anti-diarrhoeal, anti-inflammatory, anti-malarial, antinociceptive, antiviral, hypoglycemic and for abdominal pain, cardiovascular, gynecological and sexual diseases (Ngueyem *et al.,* 2009). Thus it is not

surprising that the bark, leaves and roots of *B. micrantha* are widely used as herbal medicines in tropical Africa (Bosch, 2012), while the round and black berries of the species are widely eaten, particularly by children and can be used to make jams and juices(VanWyk and Gericke, 2000; Walsh, 2012). It has been identified as one of the few plant species that should be integrated in the domestication process in farming systems in sub-Saharan Africa to support medicinal, nutritional and income security of local communities through household use and marketing of its fresh or dried fruits (VanWyk, 2011).

At present, *B. micrantha* is domesticated as a fruit tree in Malawi (Maghembe and Prins, 1994) and as a medicinal tree in Tanzania (Kideghesho and Msuya, 2010). Due to its popularity as herbal medicine, *B. micrantha* is sold as such in the herbal medicine or "muthi" markets in Cameroon (Ingram and Schure, 2010), Malawi (Meke *et al.,* 2017), Nigeria (Oluwalana *et al.,* 2007) and South Africa (Williams *et al.,* 2001). Bark, leaves and roots have medicinal applications throughout the range of *Bridelia micrantha.* The bark is widely used in the treatment of wounds, and as a purgative, abortifacient and aphrodisiac, whereas in Congo bark decoctions are taken to treat cough and sore throat. In South Africa, Democratic Republic of the Congo and Sierra Leone, the bark, leaf or root decoction is used as a remedy for wounds, it is applied to affected body part the bark (Lebbie, and Guries, 1995; Schmidt *et al.,* 2002; Mbayo *et al.,* 2016). In Cameroon, Guinea, Nigeria, bark decoction is taken orally used to treat diabetes mellitus (Abo *et al.,* 2008; Gbolade, 2009; Mabeku *et al.,* 2011; Diallo *et al.,* 2012). In Ivory Coast, leaf decoction is taken orally as purgative for poison (Koné and Atindehou, 2008). In Ethiopia, the bark decoction is applied to the affected part for scorpion bite (Zenebe *et al.,* 2012). Medicinal plants promote healthy life of a country. They play an important role by providing preliminary health care services to both urban and rural people. They also serve as an important therapeutic agent as well as important raw materials for manufacture of both traditional and modern medicine (Chekole *et al.,* 2015). This can serve as a source of foreign exchange for a country by exporting medicinal plants to other countries. Hence, indigenous medicinal plants play significant role in the economy of a country. Medicinal plants contribute significantly to rural livelihoods. Apart from the traditional healers practicing herbal medicine, many people are involved in collecting and trading medicinal plants. The result is an increased demand in both local and international markets as well as bio-prospecting activities searching for sources of new drugs. The World Health Organization (WHO) estimates that 80% of the world's population depends on medicinal plants for their primary health care (Mothana *et al.,* 2008; Gupta *et al.,* 2010; Ngoci *et al.,* 2011; Prakash and Sandhu, 2012). The objectives of this study were to determine the socio-economics characteristics, parts of plant commonly used and the cost and returns of investment on *B. micrantha*.

MATERIALS AND METHODS

Study area

The survey was carried out in Mushin and Alimosho Local Government Areas of Lagos State, Nigeria. Mushin Local Government Area is located 10 km north of the city core, adjacent to the main road to Ikeja and it is a largely congested residential area with inadequate sanitation and low-quality housing. It had 633,009 inhabitants at the 2006 Census. Alimosho is a Local Government Area in the Ikeja Division, Lagos State, Nigeria. It is the largest local government in Lagos, with 1,288,714 inhabitants, according to the official 2006 Census.

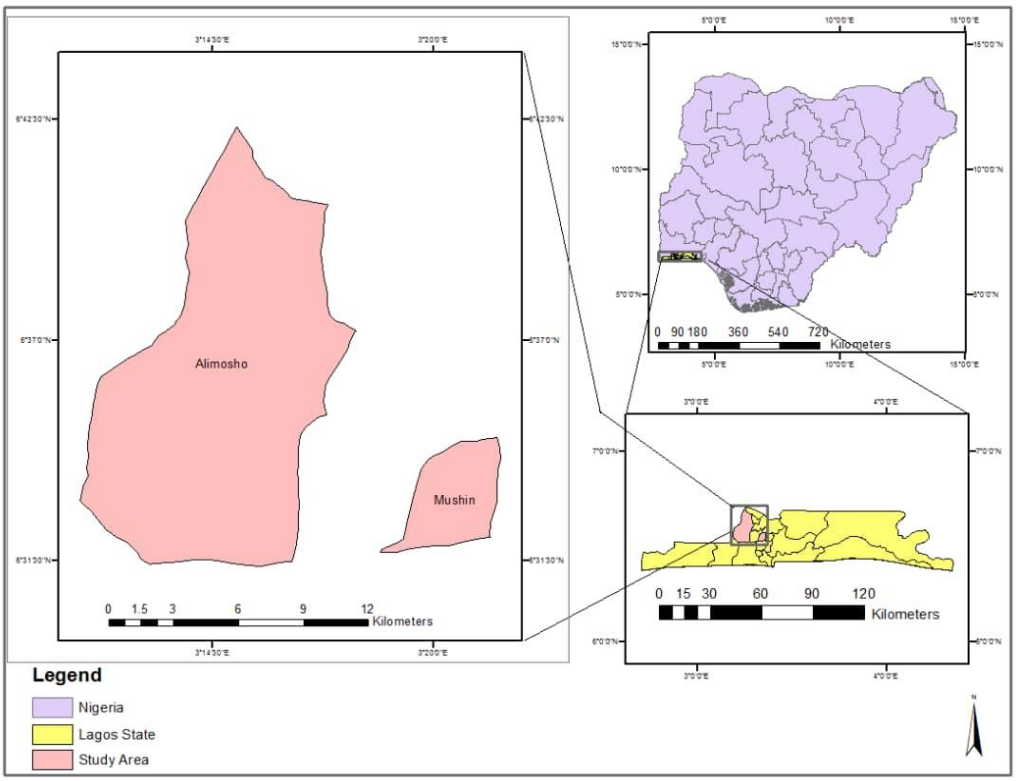

Figure 1: Map showing the study area

Data Collection

The primary data used for the study was obtained with the use of structured questionnaire through an oral interview with the respondents. Non probability snowballing method was used for the study. Two (2) Local Government Areas (LGAs) was selected from the study area due to areas where there are many traders. Hundred (100) copies of a questionnaire was administered, fifty (50) respondents were selected from Ojuwoye and Ikotun market each.

Data Analysis

The data collected were analysed using Statistical Package for Social Science (SPSS). Descriptive statistical tools such as frequencies, mode and percentages were used. Budgetary was used to determine the cost and returns analysis.

RESULTS

The results in table 1 showed that 25% of the respondents are 25 - 35years, 31% were aged >35 - 40years while 44% were aged above 45years old. This indicated that *Bridelia micrantha* market at Ojuwoye and Ikotun was more dominated by active and older people who were more experienced and familiar with the indigenous knowledge. The gender revealed that 24% were males while 76% were female. It was also revealed that 10% of the respondents were single, 84% were married while the remaining 6% were of other marital status.

Pertaining to the level of education, 45% attended the primary, 20% were from secondary, while the remaining 35% had no formal education. Based on ethnic group, all the respondents (100%) were of Yoruba ethnic group. The result further revealed that 34% of the respondents get source of capital from co-operatives while 66% get from personal savings. On status of occupation, 25% of the respondents agreed that they had other occupation while 75% had none. On the income per month, 84% of the respondents earns below ₦25,000, 10% of the respondents earns >₦ 25,000 - ₦ 50,000 while the remaining 6% earns above ₦ 50,000.

Table 1: Socio-Economic Characteristics of the Respondents

Variables	Frequency	Percentage (%)	Mode
Gender			
Male	24	24.0	
Female	76	76.0	Female
Age			
25-35years	25	25.0	
>35-45years	31	31.0	
>45years and above	44	44.0	>45years above
Marital status			
Single	10	10.0	
Married	84	84.0	Married
Others	6	6.0	
Status of Occupation			
Yes	25	25.0	
No	75	75.0	No
Level of Education			
Primary	45	45.0	Primary
Secondary	20	35.0	
None	35	20.0	
Ethnicity			
Igbo	0	0.0	
Yoruba	100	100.0	Yoruba
Hausa	0	0.0	
Source of capital			
Co-operatives	34	34.0	
Personal savings	66	66.0	Personal savings
Monthly income			
Less than ₦25,000	84	84.0	
> ₦ 25,000-₦50,000	10	10.0	
Above ₦50,000	6	6.0	

Utilization of Bridelia micrantha

The result in Table 2 showed that the bark was the only part that was commonly used/ requested for the study areas. Majority (65%) of the respondents use dried bark while 27% of the respondents use fresh form, 8% uses others. It was further revealed that 17% of the respondents use the bark for malaria, 37% of the respondents uses it for pile while the remaining 46% of the respondents use it for all diseases. The herbs can be used to treat different categories of ailment. This is in agreement with Maroyi (2017) that the bark, leaf sap, leaves and roots of *Bridelia micrantha* are reported to possess diverse medicinal properties and cure various human ailments and diseases throughout its distribution range in tropical Africa. The mode of usage revealed that 47% of the respondents always drink the bark, 23% of the respondents' bathe with it while 30% uses it other way.

Cost and return of investment on *B. micrantha*

The cost and return analysis were used to determine the profitability of *B. micrantha* in the study area and the results are presented in Table 3. This is showing the revenue generated from the trade of *B. micrantha* at Ikotun market was ₦ 171,250, with a net profit of ₦ 152,150 while the costs incurred from purchase of fixed items such as rent on shop, materials, tax represents 28.80% while variable items such as tariff, labour, packaging and transportation cost represents 71.20% with a total cost of production of ₦19,100.

On the other hand, the revenue generated from the trade of *Bridelia micrantha* at Ojuwoye market was ₦ 169,900, with a net profit of ₦

152,670 while the costs incurred from purchase of fixed items such as rent on shop, materials, tax represents 31.63% while variable items such as tariff, labour, packaging and transportation cost represents 68.37% with a total cost of production of ₦ 17,230.

Table 2: Utilization of *B. micrantha* by traders

Variables	Frequency	Percentage (%)	Mode
Parts (commonly used/ requested for)			
Fruit	0	0.0	
Bark	100	100.0	Bark
Root	0	0.0	
Leaf	0	0.0	
Seed	0	0.0	
Bark (form of use)			
Dried	65	65.0	Dried
Fresh	27	27.0	
Others	8	8.0	
Bark (uses)			
Malaria	17	17.0	
Pile	37	37.0	
All uses	46	46.0	All uses
Bark (mode of uses)			
Drinking	47	47.0	Drinking
Bathing	23	23.0	
Others	30	30.0	

Table 3: Monthly Profitability of *B. micrantha* Trade

Variables/Location	Ikotun Market ₦)	% Total Cost	Ojuwoye Market (₦)	% Total Cost
No of Observation	50		50	
Gross Revenue (GR)	**171,250**		**169,900**	
Variable cost (VC)				
Tariff	1,800	9.42	1,300	7.54
Labour	1,200	6.28	1000	5.80
Transportation	8,300	43.46	7,130	41.38
Packaging	2,300	12.04	2,350	13.64
Total Variable Cost (TVC)	13,600	71.20	11,780	68.37
Fixed Cost (FC)				
Tax	3000	15.71	3000	17.41
Rent	1500	7.85	1300	7.54
Materials	1000	5.24	1150	6.67
Total Fixed Cost (TFC)	5,500	28.80	5,450	31.63
Total Cost (TC) = TVC + TFC	19,100	100.00	17,230	100.00
Profit and Return				
Gross Profit (GP) = (GR-TVC)	**157,650**		**158,120**	
Net Profit (NP) = (GP-TFC)	**152,150**		**152,670**	
NP / Respondents	**3,043.00**		**3,053.40**	
Rate of Return	**896.59**		**986.07**	
Rate of Return on Investment (%)	**7.96**		**8.86**	
Profitability index (%)	**0.92**		**0.93**	

DISCUSSION

The findings from the study revealed that majority of the respondents were female and married. This indicates that the sale activities are mostly dominated by female. This implies that much difference might be attributed to the fact that more tedious and more energy consuming with ability to stay longer at work was attributed to male occupation. The findings agreed with the assertions of Oluwatayo, (2010) that in Nigerian economy, most capital intensive and arduous jobs tends to be male dominated. Suggesting that marriage was a cherished value in the study areas, Dikito-Watchmeister (2001) opined that marital status was an important factor in social and rural participation and acceptance. Majority of the respondents were in the age group of 45 years and above. This means that the respondents in this age group were still in their active and older people who were more experienced and familiar with the indigenous knowledge. This is in accordance with the findings of Yekini (2011) where he observed mean age of 43.2 years.

Based on level of education, some of the respondents attended the primary, this showed that the respondents were educated to some extent. Marketer's educational level will help in calculations and accurate record of cost of production and sales of *Bridelia micrantha*. Their educational status will also affect both skill acquisition and book keeping positively in small scale business. On ethnic group, all the respondents were of Yoruba ethnic group. This could be attributed to the metropolis of the market which was highly dominated by the Yoruba people. The result further revealed that majority of the respondents get source of capital from their personal savings and majority had no occupation. This implies that it is not only *Bridelia micrantha* that they were involved in according to some of the respondent. They sold other herbs too including preserved animals, honey, Shea butter, mineral (local chalk) and some of them were also involved in some other businesses like selling of provision, food, fruit where they had their shop somewhere else and not the same place where they sold their herbs.

CONCLUSION

Following the result of this study, it can be concluded that the respondents were mostly female dominated and are still in their active age. Majority of the respondents were married and had little knowledge of *Bridelia micrantha* products in traditional health care and nutrition because only the bark was commonly used and requested for in the study area. The bark could be used for treating various ailments. The result of the monthly profitability in the two areas showed that it was a bit profitable at Ojuwoye market than Ikotun market.

RECOMMENDATIONS

In the area of conservation, the respondents should be encouraged to establish *Bridelia micrantha* plantation as home garden and at a commercial level so as to guarantee regular supply of the various plant parts for use. Adequate extension services should be provided on the importance and uses of *Bridelia micrantha* for treatment of human illness.

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