

LEVEL OF AGRICULTURAL COMMERCIALISATION AMONG HONEY PRODUCERS IN ABIA STATE, NIGERIA

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ABSTRACT

The agricultural commercialisation of honey in Abia State, Nigeria was evaluated in this study. Primary data were obtained using a well-structured questionnaire. Descriptive statistics were used to examine socio-economic and institutional characteristics of honey producers and constraints associated with honey production while Household Commercialisation Index (HCI) was used to determine level of honey commercialisation in the study area. The result of the socioeconomic and institutional characteristics showed that majority of honey producers were male. Furthermore, 58% have been in the honey business for more than five years with 57% practicing modern type of bee keeping and also, about 80% of the respondents produced honey at medium and large-scale levels. The result of HCI showed that majority of the households were in high Commercialised household (which have sold about 67% of their total honey outputs) followed by medium Commercialised household (have sold about 30% of their total honey outputs). The result also shows a mean commercialisation index of 0.646970. This implies that there is a high level of orientation of bee farmers towards commercialisation in the study area. The major constraints affecting bee farmer's production include pest and predators (89.70%), lack of access to credit facilities (85%), lack access to bee keeping equipment (85%), fire outbreak/bush burning (82.16%) and theft (74.43%). It is recommended that policies geared toward modern bee farming/production that requires techniques and equipment to enhance honey yield should be encouraged by government and non-governmental agencies while bee farmers associations should organise training/workshops to create awareness on negative effects of bush burning especially during dry season on honey production.

Keywords: Agricultural commercialisation, honey, producers, Abia state, Nigeria

INTRODUCTION

Tackling poverty and unemployment problems has been major policy challenge to every successive government in Nigeria. Nigeria is agrarian, and the discovery of crude oil in Nigeria adversely affected the once booming agriculture in Nigeria especially in the 1940s and early 1950s which became a shadow of itself. Notwithstanding, Agriculture remains the hub of the economy; a key component in achieving the Millennium Development Goals (MDGs) around the world; providing employment for over 90 percent of the rural dwellers who constitute about 70 percent of the total population. The agricultural gross domestic product (GDP) is contributed by crops (87.60%), livestock (8.10%), fisheries (3.2%), and forestry (1.1%). More than 90 percent of the agricultural output is accounted for by small-scale farmers with less than 2 hectares under cropping (Oyaniran and Omomia, 2023).

Although successive governments have attempted to revitalize the agricultural sector to cushion the effect of poverty and unemployment, Nigeria has not succeeded wholly in turning the fortune of agriculture for economic growth. Ebiafue, *et al.*, (2024) and Financial inclusion data (2011) has it that, agricultural production must increase by 70% by 2050 to feed the planet, despite the fact that population growth, climate change, and urbanization are putting pressure on available cultivable lands. Thus, the need to develop an approach that will ensure that better progress is made towards

achieving the first Millennium Development Goal and promote agricultural sub sectors' income generating activities to meet the growing need of the economy becomes a necessity.

Commercialisation of bee keeping is one of the agricultural sub sector's activities that can promote economic growth of Nigeria through provision of employment and poverty reduction but has received little attention. Bee keeping or apiculture entails the rearing or keeping of bees with the aim of exploiting its products. Bee keeping is a sustainable form of agriculture that can provide rural people with a source of much needed income and nutrition, therefore they have economic reasons to retain the natural habitat or modify it to boost honey product because it has potentials to increase yield such as other agricultural ventures (Okezie, *et al.*, 2021).

Nigeria is naturally endowed with good climatic condition for honey production but their full potential has not been tapped due to the fact that it has not been given its full right of place and priority within the overall frame of agriculture (Okezie, *et al.*, 2021). Also, Ama-Ogbari (2014) and Babatunde and Omotesho (2017), opined that, commercial beekeeping was one aspect of agriculture that was neglected and almost non-existent in Nigeria as the country had relied on crude oil and imported products like honey to meet the growing domestic demand. Also, many farm families and rural dwellers run away from honey hunting because of the scare of bee sting. The few honey hunters and

traditional bee farmers that produce the local output of honey use traditional harvesting and processing techniques, which often lead to poor-quality honey. Giving the health benefits of honey and the increase demand for honey has commercialised the production of honey through naturally available nectar which has led to a huge investment for growing commercial farming of bee culture (Gibson *et al.*, 2021; Partners and News, 2021; and Fakhridin and Alsaadi 2014), there is a need to examine the degree and level of commercialisation of honey producers looking at the scale of operation and their orientation towards the market to meet the growing demand. Few studies have addressed different aspects of honey production in Nigeria (e.g. Ogunola, *et al.*, 2019 and Okezie, *et al.*, 2021), there is still gap in the level of commercialisation of honey production in the study area. . This paper contributes to the existing literature by looking at the level of agricultural commercialisation among honey producers in Abia State, Nigeria. Hence, specifically this study examined the socio-economic and institutional characteristics of honey producers; the degree and level of commercialisation of honey producers, and identify constraints affecting output of bee farmers in Abia State, Nigeria The definition of agricultural commercialisation adopted in this study is as defined by Jaleta *et al.*, (2009); Pradhan *et al.*, (2010): Agricultural commercialisation refers to the process of increasing the proportion of agricultural production that is sold by farmers. The commercialisation of agricultural households implies the increased focus on market signals and comparative advantages in a household's production decisions, as opposed to a primary focus on subsistence production and the sale of purely the surplus that remains after the household's consumption requirements have been satisfied.

METHODOLOGY

The study was carried out in Abia State, Nigeria. The state is located in the South Eastern Nigeria and lies between longitudes 07° 08' - 08° 04' East of the Greenwich Meridian and latitudes 04° 49.30' - 06° 02' to North of the Equator. The state is divided into 17 local government areas (LGA), organised within three (3) agricultural zones namely, Umuahia (5 LGAs), Aba (7LGAs) and Ohafia (5LGAs) agricultural zones. The estimated population of Abia State was 4,143,100 persons with a relatively high density of 660 people per square kilometre (NPC 2022).

The sample units of analysis are the honey producers/marketers in Abia state. A multi-stage sampling procedure was employed in selecting the respondents. The first stage involved the selection of the three agricultural zones (AZs) in Abia State which are Umuahia, Aba and Ohafia AZs. The second stage involved the purposive selection of one

local government area each (LGA) from each of the three AZs making it three LGAs studied. The essence of the purposive selection is the preponderance of honey producers in the LGAs selected and to ensure equal representation of respondents in each zone whose major occupation is bee farming. The LGAs purposively selected from each of the three agricultural zones were Ikwuano LGA in Umuahia AZ, Isi Ala Ngwa North LGA in Aba AZ and Bende LGA in Ohafia AZ. In the third stage, two autonomous communities also known for high honey production were purposively selected from each LGAs to have a total of six communities/villages. Lastly, in each of the six communities, a list of registered beekeepers were compiled with the assistance of the beekeepers association's head and resident Abia State Development Program (ADP) extension agents. From each community/village list, 15 honey producers/marketers (marketers that are also producers) were randomly selected for the study, making a total of 90 respondents used for the study. Primary data were collected with the use of a well-structured questionnaire. Also, scheduled interview was conducted for respondents who could not read and write and the results of the interview were entered into the questionnaire and used for analysis. Information on the scale of production was collected per cycle (a cycle is five-six months), and this was used to categorize bee farmers depending on the quantity of honey produced/sold per cycle.

Model specification: Measurement and Levels of Honey Commercialisation

To measure the status and level/extent of agricultural commercialisation of honey, this study adopted the Household Commercialisation Index (HCI) as used by Mengesha (2021). Commercialisation of agriculture was calculated as the ratio of the total value of honey sold by the households to the total value of honey produced by the same households expressed as a percentage. The index measures the extent to which honey production oriented towards the market. A value of zero would signify a total subsistence and the closer the index is to 1, the higher the level of commercialisation. If the smallholder households sell most of their agricultural outputs to the market, they will become more commercialised and vice versa. Also, the Index captures variation in terms of intensity of commercialisation across honey output which measures the volume of honey sold in percent, thus the degree of commercialisation was grouped into four categories of non-commercialised (0%), low commercialised ($\leq 25\%$ volume of output sold), medium commercialised (26% -50% volume of output sold) and high commercialised ($> 50\%$ volume of output sold).

$$HCI = \frac{\text{Gross amount of honey marketed/cycle}}{\text{Gross amount of honey produced/cycle}} \times 100 \dots \dots (1)$$

RESULTS AND DISCUSSION

Socioeconomic and institutional characteristics

The results of socio-economic and institutional characteristics of Honey Producers in Table 1 shows the frequency, mean and percentage distribution of respondents. The result shows that 70% of the respondents were males which implies that honey production in the study area is dominated by male. It could also mean that female farmers recognize beekeeping as a dangerous enterprise because of the fear of bee stings as such were not directly involved in field production of honey, but engaged in processing and selling of the bee-products. This is in line with the findings of Okezie *et al.*, (2021) and Ogunola *et al.*, (2019) who found that beekeeping is gender-sensitive involving male members of the household probably because beekeeping is seen as a dangerous enterprise by female farmers due to the fear of bee stings. The mean age was 35years which present bee farmers as agile, able-bodied and productive. The implication of the mean age result is that the respondents are able-bodied and still economically active which could signify increase in the output of honey which helps to generate substantial income for the household and expansion of their farm size. Also, majority (63%) were

married with average household size of 5 persons. This suggest that the honey business enterprise is dominated by married people and the implication of the result may be cheap availability of family labour in the honey productions and thus decreasing the cost of labour in the business enterprise. For level of education, respondents that went to secondary school ranked highest with 46%, 25% stopped at primary school level, 22% went to higher schools while only 5% of the respondents were illiterates.

The study revealed that Majority (64%) of honey producers had bee keeping/honey production experience of more than five years. This implies that most of the farmers have been in the business for a long time. Beekeepers with long years of experience would be able to adjust production to meet market demand and price fluctuation that may occur. Okezie *et al.*, (2021) who had similar result in a related study observed that number of years of experience in honey production/ bee keeping is crucial for adjustments in the face of changing production demands and conditions. With experience, beekeepers are able to make and take necessary decisions regarding risk and uncertainty that are inevitable in any business enterprise.

Table 1. Socio-Economic and Institutional Characteristics of Honey Producers

Variables	Frequency	Percentage (%)
Sex		
Female	27	30.00
Male	63	70.00
Age (years)		
Less than 25 years	11	12.22
26 – 35	15	16.67
36 – 45	33	36.67
46 – 55	25	27.78
More than 55 years	6	6.66
Mean	35.34	
Marital status		
Single	41	45.60
Married	48	53.30
Divorced	1	1.10
Household size		
1-3	10	11.10
4 – 6	61	67.80
7 – 9	17	18.90
≥ 10	2	2.20
Mean	5.26	
Standard Deviation	1.745	
Level of education		
Primary	23	25.56
Secondary	42	46.67
Tertiary	20	22.22
None	5	5.55
Beekeeping experience		

Variables	Frequency	Percentage (%)
Less than 2years	15	16.67
2 – 5 years	17	18.89
More than 5years	58	64.44
Access to market Information		
Yes	68	75.60
No	22	24.40
Type of Hive used		
Modern	57	63.33
Traditional /wild bee hunting	33	36.67
Farm scale		
Small (1-10L of honey/cycle)	20	22.22
Medium (11-20L of honey/cycle)	23	25.56
Large (>20L of honey/cycle)	47	52.22
Total	90	100

Source: Field survey 2020

Approximately, 75.60 % of honey producers had access to market information. Access to market information is associated with a higher level of market participation. Martey (2013) in his study stated that access to market information arrangements assures producers flow of insights on market conditions and opportunity sets that enable farmers to plan effectively on enterprise choices and efficient resource allocation. This reduces the cost for searching for suitable prices and also, gives them opportunity to make high profit. Majority of the respondents (63%) adopted modern hives techniques in honey production. Going by the recent increase in the demand of honey and its by-products which is of great economic importance, this result implies the use of modern techniques of production which is more efficient and profitable from the obsolete and traditional methods to meet this demand. This result is in line with the findings of Okezie, *et al.*, (2021) who stated that the preponderance of the bee keepers avows that modern techniques of bee keeping is profitable, produces more by-products such as bee wax and bee pollen; and is more ecological and that gradual exposure of modern techniques of bee keeping influence their choice and technique of production. Quantity of honey produced is associated with a higher level of sales which leads to increase in the level of commercialisation. From Table 1, a great number of the respondents produced honey per production cycle at large scale (52%) and medium scale (25%) while only 22% produce at small scale.

Higher scale of production indicates an incentive or potential to produce surplus for the market. Increase in honey production is driven by area under cultivation (type and number of hives), and ready market and information availability. This indicates that honey producers in the study area are high level producers. The result confirms the findings by Olwande and Mathenge (2011) and Martey (2013) that households with larger farm sizes are able to produce marketable surplus and hence participate more in the market.

Level/degree of commercialisation by honey farmers

Results in Table 2 indicate that the minimum and maximum value of commercialisation were 0.336 and 1 respectively. This implies that commercialisation ranges from 0 to 1. Specifically, majority (97.67%) of the honey farmers were commercialised at different levels in the study area. From the result, Based on the categorization made by Martey, (2013) and Mengesha, (2021) level of commercialisation of households in the study area include high Commercialised household which have sold about 67% of their total agricultural outputs, medium Commercialised household have sold about 30%,while Non-commercialised category include low Commercialised household have sold about 3% or Non-commercialised households sold none, indicating non participation because their volume of output sold was zero and or less than or equal to 25%.

Table 2. Commercialisation index of honey farmers in the study area

Commercialisation index	Frequency (F)	Percentage (%)	Rank
0.1 – 0.25 ($\leq 25\%$)	3	3.33	Low
0.26 – 0.50 (26%-50%)	27	30.00	Medium
0.51 – 1 (>50% - 100%)	60	67.67	High
Minimum	0.336		
Maximum	1		
Mean	0.646970		
Standard Deviation	0.1984673		

Source: Field survey (2020)

This result depicts the extent at which qualitative and quantitative commodities of honey are produced and sold. It showed that majority of bee keepers produce honey for commercial purpose. The result also shows a mean commercialisation index of 0.646970. This implies that there is a high level of orientation of these farmers towards commercialisation in the study area. This result is in accordance with Mengasha, (2021) who reported high level of agricultural commercialisation. Also, according to Govereh *et al.* (1999) and Strasberg *et al.* (1999) in Madududu *et al.*, (2021), the closer the index is to 1(100%), the higher the degree of commercialisation. It also shows that the level of commercialisation in the study area was considerably high and most bee farmers produce for the market.

Constraints associated with honey production in Abia State

Table 3 shows the results of the problems encountered by the bee farmers in the study area.

Table 3. Constraints of honey production in Abia State

Constraints	Percentages (%)*	Ranking
Pest and Predators	89.70	1 st
Fire outbreak/bush burning	82.16	3 rd
Inadequate market opportunities	46.20	6 th
Lack of access to land	60.80	5 th
Lack of access to credit facilities	85.00	2 nd
Theft	74.43	4 th
Lack access to bee keeping equipment	85.00	2 nd

Source: Field Survey data, 2020, * Multiple responses recorded

Again, another major challenge are bush burning and theft. 82.16% and 74.43% of bee farmers agreed that fire outbreak and theft respectively were also major problems affecting their bee farms and yield. Fire outbreak occurs mainly during dry season, and it threatens the bee population and bee flora because the heat from the fire leads to a severe destruction of the honey bee thereby affecting output of honey in the study area. Ama-Ogbari (2014) in a study reported bush burning as a major challenge to bee farming in Nigeria.

CONCLUSIONS AND RECOMMENDATIONS

The results indicate that pest and predators were the most (89.70%) identified problems associated with honey production in the study area. Mbah, (2012) in profitability of honey production enterprise found that pest and predators like termites, wall gecko, wax moth and lizards were major threat to honey production in Umuahia agricultural zone of Abia State. Another major constraint associated with honey production includes lack of access to credit facilities (85%) and lack access to bee keeping equipment (85%) and these deprive farmers from accessing available modern inputs and usage of improved technologies. Access to credit has a correlation with adoption of technology innovations and output of honey. Ogunola., *et al.*, (2019) had similar result that lack of access to bee keeping equipment’s was one of the problems affecting bee farmers effectiveness in the honey production business and which also affected the output of honey in general.

The study examined the socioeconomic and institutional characteristics of honey producers, degree and level of commercialisation of honey producers, and constraints affecting output of bee farmers in Abia State, Nigeria. Primary data were collected with the use of a well-structured questionnaire and scheduled interview. The Socioeconomic and institutional characteristics result obtained showed that, greater percentage of the respondents were male (70%), married (53.30%), educated (94.45), and have been in honey production for more than five years. Also, 63.33% of the respondents practice modern type of honey production techniques and 52.22% produce mainly

on large scale levels per production cycle. The household commercialisation index was used to determine level of commercialisation and the result showed that honey production households sell most of their honey outputs to the market. The major constraints affecting bee farmer's production include pest and predators, lack of access to credit facilities, lack access to bee keeping equipment, bush burning and theft. The study concludes that bee farmers in Abia State are highly commercialised and produce for the market. The degree and level of honey commercialisation increases with increase in scale of production and this provides the opportunity to meet the growing demand for honey, thus, the study recommends policies geared toward modern bee farming that requires improved techniques, equipment and credit facilities to enhance honey production should be encouraged by government and non-governmental agencies while bee farmers associations should organise training/workshops to create awareness on negative effects of bush burning especially during dry season on honey production.

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