MARKETING ANALYSIS OF PIGEON PEA (*Cajanus cajan*) IN SOME SELECTED MARKETS IN IBADAN OYO STATE, NIGERIA

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Abstract

The study was carried out to examine the marketing analysis of pigeon pea (Cajanus cajan) in some selected markets in Ibadan Area of Oyo State. A total number of 25 pigeon pea sellers were selected using simple random sampling method. Data were collected using a set of questionnaire. Analysis of the data obtained from the questionnaire was carried out through the use of gross margin analysis, descriptive statistics such as frequency and percentage from the analysis. Demographic characteristics indicated that 100% of pigeon pea sellers were females. In terms of age, 12.0% were of youthful age, 72% were middle aged and 16% were in their old age. About 80% of the pigeon pea sellers were illiterate. From the gross margin analysis, pigeon pea marketing was found to be a profitable business in the study area. The return on pigeon peas marketing was 1.4, indicating that out of every naira spent by the pigeon peas sellers, about ₦1 (naira) and 4 (kobo) accrues to the sellers as net income. Inadequate access to credit was the major constraint faced by the pigeon peas sellers in the study area. Recommendation from the study area include among others, credit should be available to sellers of pigeon pea by financial institutions in order to enhance marketing of the produce. It is also recommended that there should be general awareness of the business as a means of employment, which will serve as poverty alleviations in the society.

Keywords: *Marketing, gross margin, pigeon pea, seller.*

Introduction

Pigeon Pea (*Cajanus Cajan*) is a multi-purpose grain legume particularly grown in the tropics. It has capacity to adjust to the poor agro-ecological conditions present in those areas according to Shiferaw *et al.* (2007). Pigeon pea cultivation is mainly concentrated in the south and central parts of Benin, here designed as southern Benin. Recently, Ayena *et al.* (2017) conducted a study on farmers' knowledge in the use of pigeon pea diversity in Benin. Pigeon pea belongs to the genus *Cajanus* under Fabaceae family. The genus *Cajanus* comprises 32 species, most of which are found in India and Australia although one is native to West Africa. Pigeon pea is the only cultivated food crop of the *Cajaninae* sub-tribe and has a diploid genome with 11 pairs of chromosomes (2n = 2x = 22) (Greilhuber and Obermayer, 1998). It is grown for several purposes including food security, income generation, livestock feed and in agro-forestry (Seleman *et al*., 2016). Pigeon pea is rich in seed protein (20 - 22%) and constitutes a major supplement in the diets of most vegetarian families around the globe (Saxena *et al*., 2012). The leaves are used in the treatment of some skin infections (Sharma *et al*., 2011). It has also been documented that in several countries, home remedies are produced from processing pigeon pea leaves to treat respiratory diseases such as bronchitis and pneumonia (Saxena *et al*., 2012). The extensive and deep root system of pigeon pea fixes atmospheric nitrogen and improves the quality and structure of soils (Sharma *et al*., 2011).

Pigeon pea significantly contributes to meet the dietary requirements of crude fiber, ash, fat, magnesium, manganese, and copper (Faris and Singh, 1990). Pigeon pea contains high amounts of vitamin B, carotene, and ascorbic acid (Miller *et al*., 1956). Pigeon pea (*Cajanus cajan*) is a locally available and affordable grain legume of the tropics and sub-tropics that is underutilized.

Pigeon pea varieties have protein content in the range of 23-26% (Onweluzo and Nwabugwu, 2009; ICRISAT, 1986) and it is a rich source of lysine. The protein content is comparable with those in other legumes like pigeon peas and groundnut. It is rich in minerals and fiber content (Fasoyiro *et al.*, 2009).

Markets offer households the opportunity to specialize according to comparative advantage and thereby enjoy welfare gains from trade. Recognition of the potential of markets as engines of economic development and structural transformation gave rise to a market-led paradigm of agricultural development during the 1980s (Reardon and Timmer, 2006) that was accompanied by widespread promotion of market liberalization policy agendas in Sub-Saharan Africa (SSA) and other low-income regions. Furthermore, as households' disposable income increases, so does demand for variety in goods and services, thereby inducing increased demand-side market participation, which further increases the demand for cash and thus supply-side market participation (Boughton *et al*., 2007)

Material and Method

Ibadan, the capital of Oyo State is the third largest city in Nigeria by population (after Lagos and Kano), and the largest in geographical area. At independence, Ibadan was the largest and

the most populous city in Nigeria and the third in Africa after Cairo and Johannesburg. The city of Ibadan is located approximately on longitude 3°55 East of the Greenwich Meridian and latitude 7°23 North of the Equator at a distance some 145 kilometers Northeast of Lagos. Ibadan is located in south western Nigeria about 120 km east of the border with the Republic of Benin in the forest zone close to the boundary between the forest and the savanna. There are eleven local governments in Ibadan metropolitan area consisting of five urban local governments in the city and six semi-urban local governments in fewer cities. The five urban local governments are: Ibadan North-East, Ibadan North Central, Ibadan North-West, Ibadan South-East, and Ibadan South-West. Urban cores (high-density) and hinterlands (low-density) characterized Ibadan metropolis. The population of Ibadan metropolis is 2, 550,593 according to 2006 census. However, its population at 2016 is estimated to be 3.16 million (CIA World Fact, 2016). The general land use pattern of the Ibadan metropolitan area shows a clear distinction purely residential use. Residential land use is the most predominant among all land uses in the built up part of Ibadan. The administrative and commercial importance of Ibadan has resulted in land being a key investment, an asset and a status symbol for the population. Four (4) markets (Bodija, Orita Merin, Oja Oba and Oje markets) were purposely selected. Simple random sampling techniques was used to select a total of 25 Pigeon pea sellers consisting of 8 sellers in Bodija market, 5 sellers in Orita merin market, 2 sellers in Oja Oba market and 8 sellers in Oje market on the basis of the size of each market in the study area. The data for the study was collected using structured questionnaire. Personal visit were made to the markets to obtain first hand information and other relevant market issues that could not be captured by the questionnaire.

At Oje market, 8 respondents were sampled, Bodija was 10, Orita Merin 5 and Oja Oba 2. This was based on the number of people involved in pigeon pea trading in the markets visited. The result shows that there are very few people involved in trading of the commodity. Descriptive statistics in the form of tables, frequencies and percentage distribution were used to capture the socio-economic characteristics that include sex, age, marital status and educational status. The descriptive statistics used include means, frequency and percentage. Gross margin analysis was used to evaluate the profitability of pigeon peas marketing in Ibadan metropolis. The formula for computing the gross margin is expressed as;

GM = TR -TVC

Where

GM = Gross margin

GI = Gross income

TVC = Total variable cost.

Results and Discussion

Table 1 shows the socio-economic characteristic of respondents in the study area. The table revealed that (100.0%) of the respondents were females, this implies that all the respondents were females. This signifies that females are involved in pigeon peas marketing. The results also show that majority of pigeon peas sellers (72.0%) were between 41-50 years, the results also shows that 84.0% had no formal education. But in this case lacking, although the educational level of traders does not only raise their productivity but also increases their ability to understand and evaluate new techniques and processes of better marketing of their goods. The result further shows that 84% were married while 12% of the respondents were divorced. For marketing experience, 72 (72.0%) of the respondents had 6-10 years of pigeon pea marketing. This shows that majority of the pigeon pea marketers were highly experienced in pigeon pea trading in the study area.

Table 1: SOCIO-ECONOMIC CHARACTERISTICS OF RESPONDENTS (N=25)

VARIABLES	FREQUENCY	PERCENTAGE
GENDER		
Male	0	0.0
Female	25	100.0
AGE(Years)		
Less than to or equal to 20	0	0.0
21-30	0	0.0
31-40	3	12.0
41-50	18	72.0
51-60	4	16.0
EDUCATION		
School cert	0	0.0
Primary six	5	20.0
No formal education	20	80.0
MARITAL STATUS		
Single	0	0.0
Married	21	84.0
Divorced	4	16.0
EXPERIENCE (years)		
1-5	6	24.0
6-10	18	72.0
11-15	1	4.0

Source: Field Survey, 2019

The gross margin was used to assess the returns of pigeon peas trade among respondents in the study area and is presented in table 2. The cost of purchase was ₦2,287,930.00 per annum. The total revenue was ₦3, 146,382.00; Net profit was ₦858,452. The return on pigeon peas

marketing was 1.4, indicating that out of every naira (₦) spent by the pigeon peas seller, about 1 naira and 4 kobo accrues to the sellers as net income. The result also showed that there is greater revenue over all the cost, that is; more income is generated over the cost incurred in the extraction. The large difference between total revenue and total cost was an indication that pigeon peas marketing are profitable. A greater number of people can therefore, increase their income by harvesting and going into pigeon pea marketing.

TABLE 2: AVERAGE COSTS AND RETURNS ANALYSIS PER SELLER PER ANNUM ON PIGEON PEAS MARKETER

ITEMS	AMOUNT(₦)
VARIABLE COST	
Cost of purchase	1,926,600.00
Cost of rent	26,520.00
Cost of transport	183,300.00
Packages	32,760.00
Preservation	79,560.00
Labour	37,440.00
Total Variable Cost	2,286,180.00
DEPRECIATION ON FIXED COST	
Bowls	750.00
Congo	500.00
Other fixed items	500.00
Total fixed cost(Depreciation)	1750.00
Total cost	2,287,930.00
RETURNS	
Gross revenue (GR)	3,146,382.00
Gross profit (GP)	860,202.00
Net profit	858,452.00
Return/Naira	1.4

Source: Field survey, 2019.

The major marketing problems that the sample pigeon peas traders faced in the study area were lack of access to credit facilities, lack of market information, inadequate marketing infrastructure, provision of quality product and poor storage facilities, and are presented in Table 3 and ranked according to severity. Inadequate access to credit was one of the marketing

problems limiting operation and expansion of trading activities in Ibadan as reported by sampled traders and ranked 1st by majority (92%) of the respondents. The reasons were absence of collateral, high interest rate of micro finance institutes. In addition, absence of municipality for traders having collateral in the market place of Ibadan is one reason for traders not taking loans from banks as collaterals confirmed by municipality are conditions to access credit from banks. Because of these reasons, about 92% of sampled respondents did not obtain any credit from financial institution and credit is a very strong factor that is needed to acquire or develop any enterprise; its availability could determine the extent of marketing and production capacity. This agrees with findings of Nasiru (2010) who noted that access to micro-credit could have prospect in improving the productivity of marketers and contributing to uplifting the livelihoods of disadvantaged rural marketers. Market information is a market facilitation function that plays greater role in improving marketing decisions of traders through avoiding or reducing of information asymmetry. However, about 88% of traders face lack of market information providing institution, although they were willing to pay for the required information. This was ranked 2nd. About 80% of the pigeon pea marketers indicated inadequate marketing infrastructure which ranked 3rd. Market information is lacking. Sellers and buyers are not well informed about the sources of food supply and thereby reducing potential efficiency in the market. Other facilities such as clean environment, communication facilities, and health facilities, fire services, banking facilities, security facilities, water supply and good toilets are also lacking in the market area. Provision of quality products by farmers to the market were followed by better prices. However, about 60% of sample traders reported the presence of products quality problem in the study area and was ranked 4th. Thus, the problem made farmers to accept lower prices unlike the neighboring farmers producing the same product. Attention to integrated extension system that can accommodate grain marketing is very important. About 40% of the marketers indicate poor storage facilities as constraints across the markets investigated. This constraint has been ranked the 5th challenge across the markets studied. Poor storage is very common in the study area because of the poor attitude to modern storage facilities by the marketers which has direct effect to the marketing system. Good storage and warehousing facilities such as lock-up stores, silos, barns are lacking in most of these markets. This is consistent with the findings of Seid *et al*. (2013) and Basappa *et al*. (2007) who found inadequate storage facilities, inadequate transport facilities, pests and diseases to be significant factors contributing to post-harvest losses of pigeon peas and commercial horticultural crops respectively.

Table 3: Constraints Facing Marketing of pigeon pea **Marketers**

Constraint factor	*Frequency	Percentage	Rank
Inadequate access to credit	23	92.0	1st
Inadequate marketing information	22	88.0	2nd
Inadequate marketing infrastructure	20	80.0	3rd
Inadequate provision of quality product	15	60.0	4th
Poor storage facilities	10	40.0	5th

Source: Field Survey, 2019. *Multiple responses

Conclusion and Recommendation

The study was carried out to determine the marketing analysis of pigeon pea (C*cajanus cajan*) in Ibadan metropolis. The results on socio-economic characteristics of the respondents revealed that 100.0% of the respondents were females; this implies that all the respondents were females. This signifies that females are involved in pigeon peas marketing. The results also shows that majority of pigeon pea sellers (72.0%) were between 41-50 years, the results also shows that 84.0% had no formal education. Although the educational level of traders does not only raise their productivity but also increases their ability to understand and evaluate new techniques and processes of better marketing of their goods. For marketing experience, 72.0% of the respondents are 6-10 years of pigeon pea marketing. This shows that majority of the pigeon pea marketers were highly experienced in pigeon pea trading in the study area. Based on the finding from this study, the following recommendations were made:

i. Credit should be available to sellers of pigeon pea by financial institution in order to enhance marketing of it produce.
ii. There is need for better roads, especially those linking rural area with urban area to facilitate easy movement and reduce the high cost of transportation.
iii. There should be general awareness of the business as a means of employment, which will serve as poverty alleviation in the society.
iv. There is need for substantial improvement and modification in pigeon peas markets in the study area in order to make it more efficient.

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