

Original Research Article

Analysis of Plantain Marketing in Afijio Local Government Area of Oyo State, Nigeria

Jatto, K.A., *Adeoye, A.S., Abegunrin, O.O., Oke, O.O., Eniola, O. and Smart, M.

Department of Agricultural Extension and Management
Federal College of Forestry
Jericho Hills, P.M.B.5087
Ibadan, Nigeria

²Department of Crop Production
Federal College of Forestry
Jericho Hills, P.M.B.5087
Ibadan, Nigeria

*Corresponding email: saadeoye06@gmail.com

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Abstract

The study analyzed plantain marketing in Afijio Local Government Area. The study was carried out in 6 major markets purposively selected (Ilora, Awe, Fiditi, Ijaye, Ojutaye, and Eleekara). Information was generated from one hundred and twenty (120) respondents in the study area using a well-structured questionnaire to examine the socio-economic characteristics of respondents, estimate the profitability of plantain marketing, and assess marketing functions and constraints facing plantain marketing. The data were analyzed using descriptive statistics, budgetary analysis and benefit-cost ratio. The result showed that 98.3% were female, ranged in age from 31-40 years (35.0%), implying that average-aged women dominated plantain marketing in the study area. Majority of them were married (55.0%), and 72.5% of them had at least primary education. The result also revealed that average total cost was ₦46,470 monthly with total return and net return being ₦59,500 and ₦12,530 respectively. The selling price of plantains was significant, and positively related to marketing efficiency at 1%. The findings further revealed that plantain marketing was profitable, since the benefit cost ratio (BCR) was greater than one. A BCR of 1.27 meant that every ₦1.00 invested into plantain marketing business yielded ₦0.27k as profit. The major constraints encountered by the marketers of plantain were inadequate funds and rapid deterioration in quality. It was therefore recommended that registered plantain marketers should be organized into cooperative society for easy access to loans from credit institutions, and for receiving vital information from government institutions and non-governmental organizations.

Key words: Plantain Marketing, Profitability, Budgetary Analysis, Benefit Cost Ratio

Introduction

Plantain and modern banana originated from south-east Asia and the Western Pacific region (John and Marchal, 1995). They belong to the family *Musaceae*, and to the two types, *Musa acuminata* (genome AA) and *Musa balbisiana* (genome BB). Moreover, both plantain and banana

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are staple food crops for many people in developing countries. In terms of gross value of production, plantain and banana are among the most important fruits in the developing world (Akalumbe, 1994). In terms of distribution, four main types of plantain are available in Nigeria, based strictly on their bunch characteristics. These are the horn type, French type, False type and the False-horn type. In Nigeria, the False-horn type is the most widely distributed because of its ability to tolerate poor soil conditions compared to the others (John and Marchal, 1995).

Plantain marketing involves the role of middlemen in passing plantain from the farms to the markets. Therefore, the roles of markets cannot be over emphasized because production centres are fragmented and mostly in small scale. It is faced by a lot of marketing problems, and these problems determine whether production can be expanded. Production problems can be overcome by introducing new production technologies and an efficient marketing system, and this can only be realistic by understanding marketing system.

Plantain is available for a limited time, and post-harvest losses are high because it is a seasonal crop with relatively short shelf life. The perishable nature of plantain makes its processing a vital link in the marketing process. Some important plantain products include local beer (Sekete), plantain flour, plantain chips, roasted plantain (*Boli*) as well as processed form known as *Dodo Ikire*. Plantain is important in the diets of many Nigeria families. In the urban areas, it is normally eaten in convenient forms like *Dodo* (fried ripe pulp), chip (fried unripe pulp) and as plantain flour (Akinwumi, 1999). Plantain flour has an advantage over other starchy foods because it contains protein, minerals and vitamins. Medicinally, plantain can be used to cure some ailments; like sore throats, tonsillitis, diarrhoea and vomiting. Due to its high nutrients content, plantain is used in the production of *Soymusa* (mixture of soybean and plantain flour), which can be used in the treatment of kwashiorkor (Idachaba, 1995). However, it is obvious that increase in production without a corresponding increase in marketing will amount to waste of resources. Njoku and Nweke (1996) agreed that marketing conditions changed because the sector was not given adequate attention. Holton (1995) studied the effects of ineffective marketing channels, and stressed that these channels should be easy to navigate in order to facilitate free flow of goods from producers to consumers. Mellor (1966) also observed that inefficiencies in the marketing functions could cause actual loss of products, while Frison and Sharoock, (1998) stressed the importance of integrating expression of the marketing function with the expression of production. Akalumbe (1994) observed marketing and post-harvest handling systems of plantain in Southern Nigeria, and agreed with Njoku and Nweke (1995) that good infrastructures and facilities for storage as well as processing coupled with means of transport are important for an improvement in the plantain marketing system. Moreover, plantain is a palatable staple foodstuff, and an important source of energy, minerals which conveys an image of strength, power and masculinity (Fiddes, 1991). Even today, plantain is an important part of western food culture, and is becoming increasingly important in other parts of the world. In Nigeria, relative attention given to plantain is focused on its production technology, while little is done on its marketing. This is obvious from the current increase in production without a corresponding increase in marketing, thus leading to wastage of resources. Problems of plantain marketing examined in this study were those that affected capital

for marketing, and increased marketing costs. Marketers tend to be interested in increasing their capital base to improve profit and efficiency without necessarily considering the uncertainties in marketing costs. Based on this backdrop, the study objectives were to: examine the socio-economic characteristics of plantain marketers, estimate the profitability of plantain marketing, assess the plantain marketing functions, and identify the constraints facing plantain marketing in Afijio Local Government Area of Oyo State, Nigeria.

Methodology

The study was carried out at Afijo local government area of Oyo State, Nigeria. The local government shares boundaries with Akinyele, Oyo west, and Oyo east local governments. Afijo local government is location at Jobele in Oyo State central senatorial district. And it has an area of 722km² and a population of 134,173 according to the 2006 census. This local government consists of 10 wards from which the following market towns were selected: Ilora, Awe, Akinmonrin, Fiditi, Imini, Jobele, Iware, Oluwatedo, Eleekara and Ojutaye. A purposive sampling technique was used in sample size selection for this study. The first stage was a purposive selection of the following 6 major markets (Ilora, Awe, Fiditi, Ijaye, Ojutaye, and Eleekara) based on the concentration of plantain marketers in these markets. Registered plantain marketers were selected from the selected markets as Ilora (70), Awe (30), Fiditi (20), Ijaye (30), Ojutaye (30), and Eleekara (60). The second stage then involved the random selection of 50% of registered plantain marketers in each of the selected market, thus giving a total of one hundred and twenty (120) respondents as the sample size. Data for the study were collected from plantain marketers in the study area with the aid of a well-structured questionnaire.

Method of Data Analysis

Descriptive statistics such frequencies, percentages, means, and budgetary analysis which included net profit, gross margin, marketing margin and benefit-cost ratio were used as defined below:

Net profit was computed as

$$\text{Net profit} = \text{TR} - \text{TC} \dots\dots\dots\text{equation 1}$$

Where TR = Total Revenue = Selling price per bunch x Number of bunches sold

$$\text{TC} = \text{Total Cost (TVC + TFC) in Naira}$$

Where TVC = Total Variable Cost and TFC = Total Fixed Cost

The major variable cost items taken into consideration during this study were transport costs, labour costs, and cost of trading materials, while the cost of renting a shop and market levies constituted the fixed costs.

Marketing margin for retailer was computed as:

$$\text{Marketing margin (MM)} = \text{CP} - \text{RP} \dots\dots\dots\text{equation 2}$$

Where: CP = Consumer's purchase price = Retailer's selling price per bunch

$$\text{RP} = \text{Retailer's purchasing price} = \text{Cost of plantain obtained from the wholesaler}$$

The gross margin was computed as:

$$GM = GR - TVC \dots\dots\dots \text{equation 3}$$

Where: GM= Gross Margin

GR = Gross Revenue

TVC = Total Variable Cost

$$\text{Benefit Cost Ratio} = \text{Total Revenue/Total Cost} \dots\dots\dots \text{equation 4}$$

Results and Discussion

Table 1 presents the socio-economic characteristics of the respondents. Most of the respondents (98.3%) were female, probably because the men engaged in other related activities

Table 1: Socio-economic characteristics of the respondents (n = 120)

Variables	Frequency	Percentage (%)
Age		
11-20	1	0.8
21-30	23	19.2
31-40	42	35.0
41-50	35	29.2
>50	19	15.8
Sex		
Male	2	1.7
Female	118	98.3
Marital Status		
Single	18	15.0
Married	66	55.0
Divorced	20	16.7
Widowed	16	13.3
Religion		
Christianity	38	31.7
Islam	53	44.2
Traditional	25	20.8
Others	4	3.3
Education		
No formal	33	27.5
Primary	35	29.2
Secondary	30	25.0
Tertiary	22	18.3
Cooperative Membership		
Yes	24	20.0
No	96	80.0
Household Size		
1-4	60	50.0
5-8	46	38.3
>9	14	11.1

such as transportation, loading and off-loading of vehicles, farming and market park activities leaving marketing of plantain to the women. This finding corroborates the result reported by Mayokun and Fisayo (2010), and Aina *et al.* (2012), that a greater percentage of rural women was involved in trading of foodstuff in Nigeria. The result also revealed that majority of the respondents (35%) were in the age range of 31-40 years. This is in tandem with Oladejo and Sanusi (2011) who reported that most of the people involved in marketing activities were average-aged women who were vibrant and energetic enough to positively carry out marketing. The result further reveals that 55% of the respondents were married to living husband/wives. This implies that plantain marketing is likely to be a reliable source of income for the upkeep of the family.

With regard to the level of education attained by the respondents, the result revealed that 29.2% of them had primary education, while 25% of them had secondary education. This implies, in line with the submission of Nkang *et al.* (2009) that their educated states are likely to affect the way farm business will be managed for improved overall production. The result is, however, in contrast with that of Aregbesola (2001) who estimated that most respondents in his study on analysis of plantain marketing in Akure North and South Local Government Areas of Ondo State, had no formal education.

Table 2 shows that, on the average, the mean total cost business transaction in plantain marketing was ₦ 46,470 per month. The total return and net return were ₦ 59,500 and ₦ 12,530 respectively. This result implies that plantain marketing in the study area was profitable, in line with the findings

Table 2: Profitability of plantain marketing (n = 120)

Quantity	Amount (₦)	Percentage
Quantity sold	35	
Purchase price/bunch	₦1,150	
Selling price/ bunch	₦1,700	
Total revenue	₦59,500	
Variable cost		
Purchase price	₦40,250	92.59
Transportation	₦1,750	4.03
Labour	₦ 770	1.77
Trading materials	₦700	1.61
Total variable cost	₦43,470	100
Fixed cost		
Rent for store/floor space	₦2,100	60
Market levy/ ticket	₦1,400	40
Total fixed cost	₦3,500	100
Total cost	₦46,470	
Net profit	₦12,530	
Gross margin	₦16,030	
Marketing margin/ bunch	₦550	
BCR	1.27	

Table 3: Plantain marketing functions and practices (n = 120)

Variable	Frequency	Percentage
Major Occupation		
Plantain selling only	39	32.5
Plantain with other agricultural products	60	50.0
Farming	21	17.5
Purchase Source		
Wholesaler	55	45.8
Retailer	15	12.5
Farm gate	41	34.5
Collector	8	6.7
Final consumer	1	0.8
Selling Source		
Wholesaler	15	12.5
Retailer	31	25.8
Farm gate	1	0.8
Collector	2	1.7
Final consumer	71	59.2
Supply Rate		
Regular	50	41.7
Irregular	70	58.3
Point of Sale		
Home market	27	22.5
Urban market	48	40.0
Home/urban market	44	36.7
Others	1	0.8
Finance Source		
Private money lender	13	10.8
Esusu/ajo	25	20.8
Bank	8	6.7
Friends and relatives	15	12.5
Personal savings	47	39.2
Co-operative society	12	10.0
Forms in which plantain is processed		
Ripe	15	12.5
Unripe	26	21.7
Both	79	65.8
Plantain Processing		
Yes	22	18.3
No	98	81.7
Membership of Marketers' Association		
Yes	106	88.3
No	14	11.7

of an earlier study by Aina *et al.* (2012), and would encourage more entrants into the business. Selling price was statistically significant at 1% and positively related to marketing efficiency, thus implying that as selling price increased, marketing efficiency increased. This result is in

accordance with Nwaru and Iwuji (2005), who observed that selling price was positively related to profit and net returns. Plantain marketing was very profitable since the benefit cost ratio was greater than one. The BCR revealed that every ₦1.00 invested into the plantain business by the marketers yielded ₦0.27.

Results from Table 3 reveal that 50% of the respondents combined marketing of other agricultural products with plantain marketing. This is a clear case of enterprise diversification probably as a result of irregularity in plantain supply. Most of the respondents (45.8%) got their plantain supply directly from wholesalers. About 59.25% of the respondents sold their plantain to final consumers. This is an indication that plantain enjoyed high patronage. The results also revealed that 58.3% of the respondents experienced irregular supply of products throughout the year. The implication of this is that most of the marketers tended to market other agricultural products during the period of scarcity. The sources of finance for investment by 39.2% of the respondents were from personal savings probably because plantain marketing required less take-off capital, or as a result of lack of access to credit facilities. Most of the respondents (65.8%) sold their plantain fruits ripe and/or unripe. This way, they forestalled spoilage before it got to the final consumer due to short shelf life of plantain. This corroborates the submission of Ferris (1997) that plantain fruits have an average market life of 1-10 days.

Table 4: Constraints facing the plantain marketing (n = 120)

S/N	Statement	SA	A	U	D	SD
		n (%)	n (%)	n (%)	n (%)	n (%)
1	Inadequate fund	61 (50.8)	45 (37.5)	5 (4.2)	8 (6.7)	1 (0.8)
2	Rapid deterioration in quality	19 (15.8)	40 (33.3)	40 (33.3)	14 (11.7)	7 (5.8)
3	High cost of transportation	25 (20.8)	20 (16.7)	41 (34.2)	25 (20.8)	9 (7.5)
4	Seasonality of plantain supply	38 (31.7)	43 (35.8)	12 (10.0)	16 (13.3)	11 (9.2)
5	Price fluctuation	17 (14.2)	19 (15.8)	23 (19.2)	41 (34.2)	20 (16.7)
6	Pilfering	15 (12.5)	22 (18.3)	22(18.3)	36 (30.8)	25 (20.0)
7	Pest and diseases	13 (10.8)	29 (24.2)	25 (20.8)	25 (20.8)	28 (23.3)
8	Inadequate quality facilities	21 (17.5)	23 (19.2)	25 (20.8)	27 (22.5)	24 (20.0)
9	Lack of organise market	21 (17.5)	27 (22.5)	32 (26.7)	24 (20.0)	16 (13.5)
10	Inability to sell plantain quickly	25 (20.8)	18 (15.0)	26 (21.7)	22 (18.3)	29 (24.2)
11	Poor marketing channel	26 (21.7)	17 (14.2)	38 (31.7)	15 (12.7)	24 (20.0)
12	Lack of cooperation from buyer	21 (17.5)	26 (21.7)	34 (28.3)	23 (19.3)	16 (13.3)
13	Poor road network	21 (17.5)	34 (28.3)	27 (22.2)	20 (16.7)	18 (15.0)
14	Lack of inadequate input	17 (14.2)	29 (24.2)	35 (29.2)	28 (23.2)	11 (9.2)
15	Spoilage	36 (30.0)	24 (20.0)	22 (18.3)	17 (14.2)	21 (17.5)

n = frequency, % = percentage

Table 4 reveals the major plantain marketing problems experienced by the respondents. Majority of the respondents (50.8%) strongly agreed that inadequate fund was the major problem confronting plantain marketing. About 40% of them also agreed that rapid deterioration in quality of plantain was another major challenge they encountered.

Conclusion

From the findings, it is evident that plantain marketing was profitable since the net profit was ₦12,530.00 per week, with a gross margin of ₦16,030.00 and the market margin of ₦550 per bunch of plantain. Furthermore, since the benefit cost ratio (BCR) was greater than one at 1.27, which implied that the plantain marketers made 0.27k for every ₦1.00 invested into the business.

Recommendations

Based on the findings of this study, the following recommendations were made:

1. Loans should be made available to plantain marketers by credit institutions to facilitate effective plantain marketing.
2. Plantain marketers should be influenced to form cooperative societies so that the problem of poor transportation and poor marketing channels can be solved by themselves.
3. Programmes that will improve plantain marketing should be organized for the marketers by relevant government or non-government agencies. The programme should involve marketing strategies, proper recording and fund generation.

References

- Aina, O.S., Ajilola, S., Bappah, M.T., Ibrahim, I. and Musa, I.A. (2012). Economic analysis of plantain marketing in Odigbo Local Government Area of Ondo State Nigeria. *Global Advanced Research Journal of Agricultural Science* 1(5):104 -109.
- Akalumbe, O. (1994). Economic of Marketing and Post-harvest Losses of Plantain in Southeastern Nigeria. Unpublished M.Sc. Thesis, 1994. University of Ibadan, Ibadan, Nigeria.
- Akinwumi, J.A. (1999). *Introduction to Tropical Agriculture*. Longmans Group Limited, London.
- Aregbesola, G.O. (2001). An Analysis of plantain marketing in Akure North and South Local Government Areas of Ondo State. A Project Report, Department of Agricultural Extension and Management, Federal College of Agriculture, Akure, Nigeria.
- Ferris, R.S.B. (1997). Improving Storage Life of Plantain and Banana. IITA Research Guide 62. Training Material Unit, IITA, Ibadan, Nigeria.
- Fiddes, N.B., Nelson, M.A. and Alison P. (1991). Method for data at an individual level of Cameroun M.E. van Staven W.A..., (Eds) *Manual on Methodology for Food Consumption Studies*. Oxford University Press Oxford. p.178.
- Frison, E.A. and Sharrock, S.L. (1998).The economic, social and nutritional importance of banana in the world. In: Picq, C., Foure, E. and Frison, E.A. (Eds.). *Bananas and Food Security*. International Symposium, Douala, Cameroon, 10-14, November, 1998. France: INIBAP, Montpellier. Pp. 21-35.

- Holton, R. H. (1995) Market structure and economic development, *Quarterly Journals of Economic* 67(17): 331-361.
- Idachaba, F.S. (1995). Food Policy in Nigeria: Towards a Framework Analysis. *Agricultural Research Bulletin* 77(1):15-18.
- John, P. and Marchal, J. (1995). *Ripening and Plantains*. Chapman and Hall, London, pp 434-467.
- Mayokun, K.A. and Fisayo, T.A. (2010). Factors affecting the improved technologies in plantain and banana cultivation by farmers in Ondo State. *Nigerian Journal of Agricultural Extension* 2(5):16 - 20.
- Mellor, J.W. (1966). *Economics of Agricultural Development*. Cornell University Press, Ithaca, New York, U.S.A. xiv + 403pp.
- Mellor, J.W. (2008). Agricultural Development and Food Security. *The Pakistan Development Review*. 47(4): 357-380.
- Njoku J.E. and Nweke, F.I. (1996). Plantain marketing in South Eastern Nigeria. Paper presented at the Third Conference of IARP, Abidjan Cote d'ivoire.
- Nkang, N.M., Ajah, E.A., Abang, S.O. and Edet, E.O. (2009). Investment in cocoa production in Nigeria: A cost and return analysis of three cocoa production management systems in the Cross River cocoa belt. *African Journal of Food, Agriculture, Nutrition and Development* 9(15):713 - 727.
- Nwaru, J.C. and Iwuji, O. (2005). Marketing margin and their determinants in plantain marketing in Owerri Agricultural Zone of Imo State in Nigeria. In: Orheruata, A.M., Nwokoro, S.O., Ajayi, M.T. Adekunle, A.T. and Asumugha, G.N. (Eds.). *Agricultural Research for Improved Agriculture in Nigeria*, Proceedings of the 39th Annual Conference of the Agricultural Society of Nigeria, University of Benin, Benin City, Nigeria. Pp. 385-387.
- Nwaru, J.C., Nwosu, A.C. and Agommuo, V.C. (2011). Socio-economic determinants of profit in wholesale and retail banana marketing in Umuahia Agricultural Zone of Abia State, Nigeria. *Nigerian Journal of Sustainable Development in Africa* 13(1): 15-21.
- Oladejo, J.A. and Sanusi, W.A. (2008). Marketing analysis of plantain in Owo and Ose Local Government Area of Ondo State, Nigeria. *International Journal of Agricultural Economics and Rural Development* 7(2): 60 - 67.