Original Research Article

ECONOMIC ANALYSIS OF SNAIL MARKETING IN IBADAN NORTH EAST LOCAL GOVERNMENT AREA OYO STATE, NIGERIA

Abstract

This paper reports findings from a study carried out to investigate the profitability of snail marketing in Ibadan North East Local Government area of Oyo State. Structured questionnaires and interview schedules were designed to obtain information on socio-economic characteristics, operational capital and source, years of experience in the business and constraints to snail marketing. Seventy snail marketers, randomly selected from three major markets which are Oje, Agodi gate and Agugu market;. The data collected were analyzed using frequency table, percentage, gross margin, Benefit/ Cost ratio and Marketing Efficiency analyses. Majority (94.3%) of the respondents were female while 5.7% were male. 31.5% were between the ages of 51-60years with mean age of 54.9 years. It was also shown that 50% source their capital through personal savings between ₦11,000-₦20,000 and 47.1% with 5-9years experience. The cost and return analysis revealed that total revenue was ₦1, 457,700.00k and total cost was ₦1, 285,320.00k while gross margin was ₦172, 380.00k and benefit- cost ratio was 1.13 which implies that for every ₦1.00 invested the marketer will make a return of ₦1.13k on every snail sold, Marketing efficiency was 88%. Major constraints to snail marketing in the study area were poor market patronage (87.1%) and seasonality (82.9%). Snail farming is advocated since it is a profitable agribusiness and can be achieved through cooperatives and micro credit facilities. Also, marketing of snail in the area should be restructured and standardized to command frequent patronage and command higher price value.

Keywords: Economic, Ibadan North-East, Marketing**,** Oyo State, Profitability, Snail, Nigeria

Introduction

Snails are invertebrates and hermaphrodites which belong to phylum Mollusca and have a singular spiral shell into which the whole body can be withdrawn. The most popular snail in Africa is the Giant African land snail, Achatina species which grows up to 30cm in length and is usually found in the dense tropical rain forest region across Africa. They are one of the micro livestock that have recently attracted attention among farmers in Nigeria because of the Food and Agriculture Organization (FAO's) alert on the deficiency of animal protein among Nigerians (Adesope, 2000). The consumption of snail meat by rural communities is governed more by culture than by social status and it is confirmed by many researchers to have both nutritional and medicinal values Ebenso (2003). Snail meat is white meat though characteristically organic, but has similar taste and texture to that of seafood. Snail has great potentials in the tropics where it is widely used in human nutrition. Murphy (2001) analyzed and reported snail meat to be high in protein (37.51%) compared to that of guinea pig (20.3%), poultry (18.3%), fish (18%), cattle (17.5%), sheep (16.4%). Snails are low in fat, protein rich and a good source of variety of essential vitamins and minerals including magnesium, vitamin E and phosphorous (Akinnusi, 2002). It also has some medicinal purposes such as in the cure of heart and kidney diseases, stroke, high blood pressure, liver, fat related ailment, poor eye sight, small pox, ulcer, constipation and asthma (Ayodele and Asimolowo, 1999. Snails have been and are still a much sought after food and come to the table as a gastronomous delight.

Snails can be found in a very wide range of environments mostly in the wild, including ditches and the bathyal depths of the sea. (Robinson, Elizabeth, 2005). Snail.world.com (2017) reported that snails are practically everywhere, but some have adapted to survive in water and some on humid land. They have adapted to a variety of conditions/habitats including villages, farms, backyards and sheds. In fact, people in the rural settings freely scout in the forests and farmlands to collect snails during the rainy season for sales and for domestic consumption. Snail farming is suggested to be amongst the top interesting

business opportunities in Africa because of its socio-economic importance. Snail marketing could serve as a source of income and returns to the marketers in the study area. The present study aims to investigate the profitability of snail marketing in Ibadan North East Local Government area of Oyo State.

Marketing Concept and Marketing Efficiency

The American Marketing Association (2013) explained marketing as the communication between a company/ producer and the consumer. It is also an activity set of institutions and processes for creating communication delivery and exchanging offerings that have value for customers. Marketing concept therefore includes the assemble preparation for consumption and the final distribution. Kotler *et al.,* (2010), also defined market concept as achieving organizational goals which depend on knowing the needs and wants of target market and delivering the desired satisfaction. Marketing efficiency can be defined as the maximization of the ratio of output to input in marketing. Efficient marketing optimizes the ratio between inputs and outputs. Marketing inputs here include the resources used in marketing of products whereas marketing output is the benefit or satisfaction created or the value added to the commodity as it passes through the marketing chain. Therefore, for this study, value added by respondents is computed as price in naira received by the respondents (price paid by the consumers) less the price received by the preceding marketer in the supply chain. Therefore: M.E= [(Total revenue – purchase cost of snail) ÷ (Total cost of marketing)] x 100% as used by Ugwumba *et al.,* (2016). There are so many businesses in the study area which need to be critically assessed for their profitability status. It is on this premise that this study therefore investigated the economic analysis of snail marketing in Ibadan North East Local Government Area of Oyo State, Nigeria through examination of the socio-economic characteristics, cost and returns, constraints and efficiency of snail marketing in the study area.

Methodology

74 The study was carried out in Ibadan North East local government area, one of the LGAs in Ibadan
75 metropolis of Oyo State. Ibadan is the capital of Oyo State, the largest city in Nigeria and Sub-Saharan
76 Africa. It has a population of 330,399 at the 2006 census, and has the land mass of 125km^2 with twelve
77 (12) wards. It is located on the northern part of Ibadan lying between latitudes 7^{0}N and 9^{0}N of the
78 equator and longitude 3^{0}E and 5^{0}W Greenwich meridian. It has an average rainfall of between 1250mm
79 and 1800mm and the temperature range is between 27^{0}C and 32^{0}C with relative humidity of 75% - 90%
80 (NPC 2006).

81 **Sampling Procedure**

82 The sample for the study was obtained using multi-stage random sampling technique. In the first stage,
83 Ibadan North East Local Government Area was purposively selected for the study because of the
84 concentration of snail markets in the area. For the second stage, three major markets were randomly
85 selected and these included Oje, Agodi and Agugu Markets. Lastly, twenty percent (20%) each, of the
86 total population of snail marketers from the three major snail markets were then randomly selected as
87 30, 15 and 25 respondents from 154, 77 and 126 snail marketers from Oje, Agodi-Gate and Agugu
88 markets respectively. Therefore, a total of 70 respondents were randomly selected for the study.

89 Structured questionnaire and interview schedules were designed to seek information on the socio-
90 economic characteristics of the marketers, operational capital, source of capital, years of experience in
91 snail business and constraints to snail marketing.

92 **Method of Data Analysis**

93 The data obtained from the study were analysed using descriptive statistics such as frequency,
94 percentages and mean. Also, inferential statistics like Gross Margin (GM), Benefit Cost Ratio (BCR)
95 and Marketing Efficiency (ME)

The formulae used to compute Gross Margin (GM), Benefit Cost Ratio (BCR) and Marketing Efficiency (ME) are expressed in equations described by Oyewo *et al*., (2013) given below:

GM = TR – TC (1)

Where,

GM = Gross margin

TR (Total Revenue) = from the sales of snail = (P x Q)

Where P = Price of Snail; Q = Quantity of Snail sold

TC= Total Cost

BCR = TR/ TC (2)

Marketing Efficiency Index (MEI) as used by Olukosi and Isitor (1990) and Ekuwore *et al* (2008)

$$Marketing\ Efficiency = \frac{\text{Total Revenue}}{\text{Total Market Cost}} \quad (3)$$

If ER≤ = 1 ----- Market is operatively efficient

If ER > = 1 ------ Market is operatively inefficient

Results and Discussion

Table 1: Socio-economic characteristics of the respondents (N=70)

Variable	Frequency	Percentage (%)	Mean
Age (years)			
21-30	1	1.4	
31-40	6	8.5	
41-50	18	25.8	
51-60	22	31.5	

61 and above	23	32.8	54.93
Gender			
Female	66	94.3	
Male	4	5.7	
Religion			
Christian	39	55.7	
Islam	27	38.6	
Traditional	4	5.7	
Marital status			
Married	42	60.0	
Widow	18	25.7	
Widower	2	2.9	
Divorced	8	11.4	
Educational status			
None	16	22.9	
Primary	45	64.3	
Secondary	9	12.8	
House hold size			
0-4	11	15.7	
5-9	40	57.1	
10-14	18	25.7	
15 and above	1	1.5	7.67
Other job			
None	48	68.6	

Farming	4	5.7	
Trading	18	25.7	
Source of Credit			
Personal Savings	35	50.0	
Bank Loan	1	1.4	
Cooperative	14	20.0	
Friends/Relative	2	2.9	
Daily Contribution	18	25.7	
Income (₦)			
1,000-10,000	1	1.5	
11,000-20,500	34	48.4	
21,000-30,000	34	48.6	
31,000 and above	1	1.5	20,824.29
Initial Capital (₦)			
1,000-10,000	11	15.8	
11,000-20,000	50	71.3	
21,000 and above	9	12.9	17,050.00
Preservation			
Sack and Basket	61	87.1	
Metal Basket	9	12.9	
How long can they survive (days)			
7	23	32.9	
14	40	57.1	

30	7	10.0	
Years in business			
0-4	12	17.1	
5-9	33	47.1	
10-14	15	21.6	
15-19	6	8.5	
20-24	3	4.2	
25 and above	1	1.5	8.77

From table 1, it can be revealed that 94.3% of the respondents were female while 5.7% were male. This indicates that snail marketing is essentially an activity carried out by women folks. This result shows that women were predominant in snail farming, indicating the importance of women in the marketing of snails. This agrees with the findings of Ebowore and Achoja (2013) who reported that majority of snail marketers were women in Delta State. Akinyemi *et al* (2003) also reported that more than half of snail marketers in Ibadan, Oyo State, Nigeria were women. 32.8% were above 61years and 31.5% were between the ages of 51-60years with mean age of 54.9years. This implies that people who engage in snail marketing were within the adult population. This finding disagrees with the report of FAO, (1994) that economically productive age is between 39 and 45 years. It was also found that 55.7% were Christians, 38.6% were Muslims while traditional religion worshipers were only 5.7%. 60% of the marketers were married; this shows that married people were more involved in snail marketing in the study area probably to increase household income. This is probably to increase the household income. This result corroborates the findings of Ebewore and Achoja (2013) that there were more married people involved in snail marketing in Delta State, The result also showed that 22.9% had no formal education, 64.3% had primary education while 12.9% had secondary education. This means that education may add

value to the operation of the business. This agrees with Yusuf (2002) who reported that majority of the marketers of snails in Ibadan were educated.

Majority of the respondents (57.1%) had household size between 5-9 with mean household size of 5.39 in the study. This may be used as family labour. 68.6% relied solely on snail marketing and this implies that they can provide for their family and live well through the business. Mafimisebi *et al* (2014) observed regarding the household size of cattle marketers in Oyo and Ondo axis and noted that 46.5% of the respondents had 5 of household size. This suggests that family members will be more committed to snail marketing as an economic venture from which income can be generated to sustain the family.

It is obvious that most of the respondents 50.0% use their personal savings as their source of capital. The table also shows that 48.6% of the respondent had income between ₦21,000 - ₦30,000 from the snail marketing business, implying that snail marketing is a profitable business which people can engage in. Majority (71.3%) started the business with an initial capital of between ₦11,000 - ₦20,000 this shows that one can start the business with little capital and earn profit. Years of experience in the business varied with 47.1% of the respondents had 5-9 years marketing experience; this implies that majority of the snail marketers had above 5 years marketing experience. The number of years in the business of snail marketing could enable them to know the best ways to make profit, the little secrets of the business. The presence or lack of experience showed low production and income of the farmers (Mafimisebi *et al.*, 2012).

Table 2: Snails Marketing Channels in Ibadan North East LGA., Oyo State

Variables (N=70)	**Frequency**	**Percentage (%)**
Kind of Marketer		
Wholesaler	60	85.7
Retailers	8	11.4

Assemblers	2	2.9
Source of Snail		
Producer	60	85.7
Hunters/Gatherers	5	7.1
Wholesalers	5	7.2
Sale target		
Retailer	10	14.3
Consumer	60	85.7
Measurement of Purchase		
Pieces	46	65.7
Congo	16	22.9
Basket	8	11.4
Measurement of Sale		
Pieces	36	48.6
Congo	34	51.4

Majority (85.7%) of the marketers were wholesalers, 11.4% were retailers while only 2.9% of the respondents were hunters/gatherers (Table 2). 85.7% were snail producer and sold directly to consumers. This could be due to the richness in protein and other medicinal values in snail consumption. It is important to note that snail is not a commonly consumed meat but rather on need for meeting some nutritional or medical requirements and also, because of affordability mainly by the rich in the study.

Table 3: Cost and Return on Snail Marketing

Variable	Amount (₦)
Total revenue (TR)	₦1,457,700.00k
Average Total Revenue	₦2,462.57k
Fixed cost (FC)	₦1,193,500.00k
Other expenses	₦23,570.00k
Transportation cost	₦68,250.00k
Total Cost	₦1,285,320.00k

155

156 TC = Transportation Cost + Fixed Cost + Other Cost

157 = ₦1, 285,320.00

158 TR = ₦1, 457,700.00

159 GM = TR – TC

160 = ₦1, 457,700 - ₦1, 285,320

161 GM = ₦172, 380.00

162 Benefits Cost Ratio (BCR) = Total revenue

163 Total cost

164 BCR = ₦1, 457,700.00k

165 ₦ 1,285,320.00k BCR =1.13

166 Marketing Efficiency (ME)

167 ME = TC x 100

168 TR 1

169 Therefore ME = ₦1, 285,320.00k x 100

$$\frac{₦1{,}457{,}700.00k}{1}$$

ME = 88.1745%

From the result of cost and return analysis, it was revealed that total revenue was ₦1,457,700.00k and total cost was ₦1,285,320.00k. The gross margin was ₦172,380.00k and also the benefit cost ratio was 1.13. This result reveals that for every ₦1.00k invested in snail marketing, the marketer will make a return of ₦1.13k. The marketing efficiency result shows that the snail marketing in the study area attains an optimal level of efficiency of 88%. The result shows that the snail marketing is efficient and this agrees with Oladejo (2014) who reported M-E of 1.17 for goat in Oyo State as profitable and so suggesting that snail marketing is profitable in the study area. Mafimisebi *et al*., (2013) also reported a similar result as being profitable.

Table 4: Constraints to Snail Marketing in the Study Area

Variables	**Frequency**	**Percentage (%)**	
Poor Market patronage	61	87.1	1st
Seasonality	58	82.9	2nd
Numerous Sellers	57	81.4	3rd
Finance	55	78.6	4th
Price	42	60.0	5th
Perishability	33	47.1	6th

Snail marketing in the study area was hindered by several factors including lack of market, numerous sellers, weather, finance, price, perishability (Table 4). The finding shows that poor market patronage was mostly identified probably because people eat snail on recommendation to meet some nutritional or medical needs, for cultural or traditional uses since it is a bit costlier than other meat sources. So, snail is ordinarily consumed by relatively rich people in the study. This however supports the work of

Ugwumba *et al.,* 2016) who reported seasonal nature, high and unstable price of product, poor sales and lack of capital as major constraints to the marketing of African giant snail. Snail marketers should therefore design some business strategies such as lunching out (outside their immediate market area) to sell their produce in order to attract higher and better value.

Conclusions and Recommendations

Snail marketing according to this study is a profitable agribusiness in the area assessed since the benefit/cost ratio is greater than 'one' as confirmed by Ogunniyi, L. T (2009) and, Aiyeloja and Ogunjinmi (2010) who see snail marketing as a profitable agribusiness but however below poverty line.. The level of profitability can however be increased if there are other sources of collecting snails rather than from the wild. The marketers of snails can also rear snail at household level, practice/establish snail farms on small, medium or large scales in order to increase the level of production. Soft loans and credit facilities through cooperatives, micro-finances and Government sources will help in boosting the market.

Profitability of the business in this study is an eye opener for individuals, Government and NGOs to consider snail farming and marketing for youth empowerment. Empowerment of youths in snail farming and marketing with provision of credit facilities to maintain the farms by individuals, Government and NGOs in order to generate revenue and reduce unemployment of youths in the society, is recommended. Future researches should be conducted into the advancement of snail marketing in order to command higher value.

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