



Determinants of Factors Affecting Net Return of Tomato Marketing in Owerri Metropolis Imo State Nigeria.

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ABSTRACT

The study is on the determinants of factors affecting net return of tomato in Owerri metropolis of Imo State, Nigeria, A sample size of 60 tomato traders of 30 wholesalers and 30 Retailers were randomly selected. Simple descriptive statistics, marketing margin tool and net return model were used to analyze the data. The study showed that traders were faced with several constraints and the major one in the study area was hourly fluctuation in market prices, Based on the findings, marketers were advised to belong to cooperative were they can together build adequate storage facility for their produce.

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Introduction

Agriculture is one of the most important sectors of the Nigerian economy, As such; increase in agricultural productivity depends heavily on its marketability so as to improve its vital roles in a national economy. Efficient market does not only link sellers and buyers in reacting to current situations in supply and demand but rather has a dynamic role to play in stimulating consumption of outputs which are essential elements of economic development [4]. Marketing can play an active role in agricultural and economic development by holding down cost of food and increase demand, thereby encouraging expansion in farming and other related economic activities [11].

Tomato is considered as a member of the family Solanaceae. The botanical name of tomato is (*Lycopersicon esculentum* Mill). It is a diploid plant with $2n = 24$ chromosomes. Naturally, tomato is a perennial plant, but it is cultivated annually because of having a great economical and commercial advantages. Moreover, tomato is considered as the 2nd greatest significant vegetable crop in the world after potato [9].

Tomatoes were domesticated in America however, the original site of domestication and the early events of domestication are largely obscure [15]. African tomato varieties introduced to Africa and Nigeria in particular at the end of the 19th century [12]. The principal areas of tomato production are the northeast part of Nigeria [2]. It can be grown in most places all over the world, like growing in the field, greenhouses and net houses. The tomato crop is grown and used for both fresh market and processing and it is an adaptable crop. Tomato is a very important vegetable and also a cash crop for small scale farmers and a potential source of revenue generation, Tomato is of great importance because it has high nutritional value, a source of vitamins, minerals and thus, essential component of human diet [5]. It is consumed by

every family and makes up about 18 percent of average daily meal, as it is consumed in sauces, soup, meat and fish. It is highly nutritious and improves health status of a family.

Tomato marketing is characterized mainly by the problem of seasonality and perishability amongst others. Efficient harvesting, handling, transportation and marketing techniques are extremely important in tomato production because it is seasonal and highly perishable in nature [2]. Subsequently, [2], in their study on " food marketing and its role in food security in Nigeria, " concluded that an efficient food marketing system would reduce post harvest losses, ensure adequate returns to farmer's investments and stimulate expansion in food production thereby enhancing the level of food security in Nigeria. Tomato produced must be distributed efficiently at a minimum cost in other to guarantee continuous availability of the produce. [8] argued that availability of food is a function of food production, stock holding and food marketing. Tomato is one of the most important vegetables in the world, Nigeria is ranked second largest producer of tomato in Africa and fourteenth largest in the world, with current production of 15.6 metric tonnes and Area harvested as 2.7 million Hectares of farm land [3]. Tomatoe is considered as a fruit by a quarter and vegetable by many, it contains substances which increase immunity, repair body vigour, stimulate digestion and regulate the acidity and alkalinity of the body.

Tomato contributes to a healthy well balanced diet; It is mostly processed into paste, puree, juices and ketch up. Its shelf life can be prolonged by sun drying, pre boiling or processing into cans.

The important factor that energizes agriculture development towards commercialization and diversification is the development of proper marketing system. Despite the fact that vegetable production is a viable option to increase farm income and alleviate widespread poverty considerable

attention has not been given for its marketing aspects. The marketing of horticultural crops, in general and vegetables in particular is more complex and risky because of the special characteristics of tomato which is high perishability, seasonality, bulkiness and wide fluctuation in prices. It requires special care and immediate disposal of the product [4]. However, Despite the overwhelming importance of tomato in Imo state, the supply of tomato in Imo state is not keeping pace with the increasing demand in dishes, soups, sausages and edible packaging material leading to a shortfall in the recommended consumption of tomato vegetable per person per day [14]. On this backdrop this study intends to determine the factors affecting the net return of fresh tomato marketing in Owerri Imo State Nigeria. The specific Objectives are:

- Examine the socio economic characteristics of fresh tomato traders
- Identify the gross margin of fresh tomatoes.
- Determine the net return and factors affecting net return of tomato traders in Imo state.

Methodology

The study was conducted in Owerri municipal of Imo state, the choice of the study area was because of predominance of major markets in the area. Imo State lies within latitudes 4°45'N and 7°15'N, and longitude 6°50'E and 7°25'E with an area of around 5,100 sq km. It is bordered by Abia State on the East, by the River Niger and Delta State on the west, by Anambra State to the north and Rivers State to the south [7]. Owerri municipal has a population of about 151,428 people which comprises of 72,185 males and 79,243 female [11]. Owerri municipal area was chosen because of its commercial status in the state and centrality, it is the headquarter of Imo state. Owerri municipal area has two main seasons, the dry and wet season and it is within the humid tropical ecological zone of Nigeria with heavy rainfall throughout the year [15]. The rainy season begins in April and lasts until October with annual rainfall varying from 1,500mm to 2,200mm. An average annual temperature of above 20 °C and annual relative humidity of 90%. The dry season experiences two months of Harmattan from late December to late February and rainy season starts from April to October [15].

Two urban markets were selected purposively; the Relief and Owerri main market otherwise known as Eke ukwu Owerri because business is conducted in full capacity daily in these markets when compared to those in rural and semi urban markets. Simple random sampling was used to select 30 retail traders and 30 wholesale traders were chosen from the sampling frame of 150 and 100 traders respectively, given a total of 60 traders for the study. Primary data was used for this study and it was obtained through the use of a structured questionnaire which was administered to 60 respondents. Data collected were analysed using simple descriptive statistics, net return model, multiple regression model and gross margin analysis.

Returns are the determination of the rate of profit earned to the value of capital investment. It is the main aim of collecting and analysing cost and returns data, Total cost defined by [5] as the opportunity cost of resources employed.

$$\text{Net Return model} = \text{Total Return} - \text{Total Cost}$$

In the wholesaler category according to the table which revealed that majority (63.4%) belongs to the age group of 41-60 years. This also indicated that old people are more engaged in tomato marketing than middle aged in the study area.

Result and Discussion

Table1. Distribution of respondents according to socio-economic characteristics

Variables	Frequencies	Percentage (%)
Age (years)		
21-30	14	23.3
31-40	20	33.3
41-50	16	26.7
51 and above	10	16.7
Sex:		
Male	23	38.3
Female	37	61.7
Marital status:		
Single	15	25
Married	40	66.7
Divorced	0	0
Widowed	5	8.3
Household size:		
1-4	16	26.7
5-8	39	65
9-12	5	8.3
Education of respondents:		
No formal education	0	0
Primary education	9	15
Secondary education	40	66.7
Tertiary education	11	18.3
Marketing experience:		
1-10	22	36.7
11-20	28	46.7
21 and above	10	16.6
Intermediaries:		
Wholesalers	30	50
Retailers	30	50

Source: Field Survey, 2015

The findings are not in conformity with Haruna's work which stated that 36-40 years engage more in tomato marketing.

In the retailer category, the table revealed that majority (36.7%) belongs to the active population group of 21-30 years. The findings signified that they are relatively young and active to engage in marketing. Also majority 28(93.3%) of the marketers were female. This implies that retail tomato marketing was dominated by women. This perhaps was due to the fact that tomato marketing in Owerri main market was mainly on small-scale basis. It further shows that 46.7% of the total respondents had up to 11 – 20 years of level of experience. This implies that majority of the respondents had a good experience in the business and they are in good position to manage the business effectively and be able to make profit. The long term involvement of traders suggests that this is a good livelihood compared to other options. This is in agreement with [1]. The table reveals that 70% of the total respondents had a household size of 5 – 8 persons while 26.7% have a household size of 1 – 4 persons. This implies a large household size among the traders in the area. It can be concluded that retail tomato marketing had, to some extent, enhanced the capabilities of women tomato traders in their contributions to household basic needs with a view to reducing the effect of poverty.

The Net Return on Tomato Marketing in Owerri Metropolis

ITEM	QUANTITY(baske)	UNITPRICE(N)	VALUE (N)
Average revenue	27.73	7810	216571.3
Total cost			
Average fixed cost			
Depreciated cost of container		107	
Average variable cost:			
Purchase cost	27.73	6586.67	182648.4
Transportation cost		3448	
Transport (to and fro)			
from Home		2064	
Tax		2056	
Cost of rent		1073.33	
Cost of feeding		650	
Cost of packaging materials		750	
Miscellaneous expenses		1046.67	
Total Average variable cost		193736.4	
Gross margin (G M) = TR – TVC			
		= 216571.3 – 193736.4	
		= N22835.2	
Net Return (TR) = GM – TFC			
		= N22835.2 – N107	
		= N22728.2	

The net return of marketing of fresh tomatoes for .The table revealed variable cost (99.99%) and fixed cost (0.01%) of the total cost of marketing fresh tomatoes in the study area. The results further indicated that the cost of acquisition (94.2%) and transportation cost (1.78%) were the major variable costs incurred in retail tomato marketing. Based on the computation per basket, the average basket of tomato was 44kg and average price per basket was N7810, total cost of marketing was N193843.4 while the total revenue of N

216571.3 was realized making a net return of N 22728.2 on average in Owerri metropolis. In review of this costs and returns results, the fresh tomato marketing in the study area was highly profitable. This finding is in consonance with [5] which concluded that costs and returns of raw tomato marketing in Bauchi metropolis were highly profitable.

From the regression analysis result in Table 2 above, the lead equation was chosen based on econometric and statistical criteria, the value of the coefficient of multiple determinations (R^2) value for the semi log 0.69 which means that the explanatory variable explained 69% of the level of variation which existed among the variables. The coefficient of X_3 , X_6 and X_9 were positive and significant at 5% which means that level of education, Marketing experience and start up capital have tremendous impact on the net return of tomato marketing in owerri metropolis.

Conclusion

The study has attempted to determine the factors that affect net returns of tomato marketing in Owerri metropolis of Imo state. Tomato marketing was profitable as revealed by the study. This is because it generated an average net return of N172261.4 and N22728.2 for the wholesalers and retailers respectively.

The profit of the fresh tomato marketing generally depends on how fast they were able to sell off the tomato due to the nature of its perishability. The major constraints associated with tomato marketing include: fluctuation in market price, high cost of transportation, frequent transport obstruction, lack of good road network, lack of market information, lack of trading capital among others. The wholesalers also lamented about the high rate of charges being collected from them by different state as they transport tomatoes back to Owerri.

Table 2. Result of multiple regressions Analysis on factors affecting the net return of tomato traders in the study area
Factors Affecting the Net Return of Tomato Marketers (Wholesalers)

VARIABLES	LINEAR FUNCTION	DOUBLE LOG FUNCTION	SEMI LOG FUNCTION	EXPONENTIAL FUNCTION
CONSTANT	866926.469 (1.3346)	69.207 (1.431)	10891328 (2.952)	11.394 (1.329)
AGE (X_1)	5430.731 (0.3656)	9.975 (1.169)	287329.3 (0.442)	0.1633 (0.8324)
PURCHASING COST(X_2)	-93.166 (-1.431)	-2.990 (-1.021)	-557736 (-2.497)*	-0.0002 (-0.239)
EDUCATION LEVEL(X_3)	-21925.077 (-1.018)	-2.553 (-0.8211)	-191693 (-0.808)	-0.30206 (-1.062)
HOUSEHOLD SIZE(X_4)	-28491.933 (-0.936)	3.618 (1.423)	-51054.4 (-0.263)	0.3704 (0.9212)
TRANSPORT COST(X_5)	-1.079 (-1.804)**	-0.2992 (-0.0586)	-555797 (-1.428)	-3E-06 (-0.3824)
MARKETING EXPERIENCE(X_6)	2189.275 (0.182)	-2.2164 (-0.8529)	-51240.1 (-0.258)	-0.04126 (-0.2598)
VOLUME OF SALES(X_7)	2224.004 (3.239)*	5.7298 (1.0410)	1136372 (2.706)*	0.012007 (1.324)
COST OF EMPTY BASKET(X_8)	-5.197 (-2.969)*	-8.618 (-2.741)*	-541676 (-2.258)*	-6.7E-05 (-2.881)
START-UP CAPITAL(X_9)	6.484 (2.299)*	0.7034 (1.989)**	36965.59 (1.371)	6.88E-05 (1.8476)
MARITAL STATUS(X_{10})	-18250877 (-0.688)	-4.062 (-1.092)	-99829.6 (-0.352)	-5.1374 (-1.466)
R-SQUARE(R^2)	0.569	0.423	0.569	0.415
ADJUSTED (R^2)	0.34	0.12	0.342	0.107
F-VALUE	2.511	1.39	2.508	1.35

Figures in parenthesis are T-ratio

*significant @5%

**significant @10%

Source: Field Survey, 2015

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