INFLUENCE OF SOCIO-ECONOMIC CHARACTERISTICS OF YAM SELLERS ON MARKETING MARGINS AMONG YAM WHOLESALERS IN DELTA STATE, NIGERIA

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ABSTRACT
The study investigated the influence of demographic characteristics of yam wholesalers on the marketing margin of yam in Delta State. Data were collected from 80 randomly selected wholesale marketers of yam from 10 markets in 2 LGAs of the state. Findings show that wholesale market of yam is dominated by males (78.8%), most of whom were married (73.8%) with secondary school experience (70%). The modal age of respondents was 50 – 59 years with the average been 48 years. The result shows marketing cost of ₦84.30 as against the price (₦120.00) of an average size of tuber resulting to a marketing margin of ₦35.70. Marketers marital status (-0.436), age (0.088) and years of marketing experience (-0.239) were found to be significant in determining the marketing margin in the study area. Transportation (71.96%) constituted the highest charge among other costs incurred in the marketing of yam. Transportation cost, marketing charges, loading and off-loading respectively contributed significantly to the magnitude of the margin. The study recommends the provision of more feeder roads to ease the evacuation of yam products from the rural places to the urban centres.

Keywords: marketing margin, marketing charges, profit margin, middlemen.

INTRODUCTION

Yam production in Nigeria has witnessed increased output yet has not been able to meet the demand of the people (FAO, 2002). Its insufficiency is as a result of an increase in the Nigeria population (Oyaide, 2002). Oyaide noted that the growth rate of the Nigerian population is 3.3 percent as against the agricultural growth rate of 2.3 percent. So the gap between domestic supply and demand is still wide in favour of demand. The problem is not peculiar to yam alone.

The endemic food problem in the Nigerian setting can be classed into two categories. These are the production and marketing problems. The production problem according to Parikh, Alli and Mirkalan (1995) can be summarized to include low productivity of the farm lands, production being left in the hands of small-scale farmers, decreasing soil fertility with the limited use of fertilizer, use of unimproved crop varieties, lack of credit, inadequate extension services and the use of very simple manually operated tools. These production problems according to Saini (1991) are gradually being solved. He noted that farm management is the key to successful economic crop production with yam inclusive.

IITA (1985), report showed that use of micro-sett (small pieces of yam cut from "mother seed yams") under plastic mulch could increase the multiplication rate ten-fold over conventional system. The use of this technology does not only cuts the farmers cost of production but also serve as enormous amount of yam for food in Africa. On the other hand, Nweke, Ugwu, Asiedu and Ayi (1982) noted that problem of food production with emphasis on yam production is

characterized by fluctuation in supply and demand. They noted that the law of supply and demand to a good extent determines the price of the commodity

Nigeria is a leading producer of the yam crop (FAO, 1998). On the part of its importance, yam tuber crop forms a staple food for most people of the tropics. According to Nwasike (1984), yam crop is rated as an important tuber at least when it compares with cassava. This is because it contains a higher percentage of protein and vitamin C. Acquah, Nganje and Evange (1991), noted on the part of profitability that yam production is very profitable and that more producers can still enter and make profit. Yam tubers are eaten in different forms. These forms include eating it boiled, fried, pounded into 'fufu', and can be made into yam powder which can be made into 'fufu' (Fasasi and Fasina, 2005). Fasasi and Fasina (2005) also remarked that yam tuber can be stored on barns, cribs, underground as well as in blended powdered form.

Marketing according to Adekanye (1988) is the sum total of all business activities involved in the movement of goods or commodities from production to consumption. Adekanye stated further that marketing exist because of the production of surplus from our farms. In solving the marketing problem of food production, Olayemi (1992) emphasized on the need of not only production but also on the improved marketing of the products. Olayemi stated that this would act as one of the incentives for promoting production. The need for improved marketing becomes necessary because surplus production will lead to wastage as shown in the analysis of the state of Nigeria food losses during marketing (Malcolm, 1999)

Marketing margin for a commodity is the difference between the retail price and that of the producers for the same unit of a commodity (Venessa and Jonathan, 1992). They noted that every category of middlemen earns a sort of margin for the functions performed in the marketing process. The difference is called 'gross marketing margin' or 'total marketing spread'. Marketing margin also include the profit margins earned by middlemen in the marketing process.

Marketing margin has been influenced in one way or the other by the demographic characteristics of the marketers. Going by the nature of agricultural products in general and yam crop in particular, Adegeye and Dittoh (1985) stressed that the bulky nature of agricultural products contribute highly to the magnitude of their marketing margin. The reason adduced for this according to Adegeye and Dittoh (1985) is high transport cost, bulky nature of the products and the marketing functions carried out by middlemen. Adekanye (1988) noted a higher marketing margin will favour the middlemen and producers often feel they have been deprived of a substantial part of the customers pay while a low marketing margin will favour the consumers, and producers often regard it as a proof that the distribution system does not exploit them. The problem of high and low marketing margin as to who should be favoured more poses a complex problem to the individuals and Government.

Meanwhile Vennesa and Jonathan (1992) asserted that low marketing margins might co-exist with inefficient use of resources, poor coordination, poor consumers' satisfaction and disproportionate profit level. Adekanye (1988) noted that low marketing margins could be regarded as a proof that distribution or marketing does not exploit producers and that marketing is efficient. The question often asked is whether the consumers are being exploited or just insatiable? To resolve this complex problem, a knowledge of the demographic characteristics of the wholesalers together with the marketing functions they carry out and their respective contribution to the marketing margin would help people involved in finding solutions to the complex problem. Though several research works have been carried out on yam crop but none seem to have been carried out on the demographic characteristics and its relationship on wholesale marketing of yam in Delta State. On a general note this study aims at unveiling the socio-economic characteristics of the yam wholesalers and their influence(s) on the marketing margin of on yam trade. Specifically the study aimed at identifying the socio-economic characteristics of the yam

wholesalers in Delta State; determining of the magnitude of the marketing margin for wholesale of yam in the study area; determining of all the marketing functions that contribute to the size of the marketing margin; and assessing the profit margin of the wholesale market in the study area

Hypothesis of the study
H_o : Marketing margin of yam wholesale marketers is not significantly influenced by the marketers' socio-economic characteristics.

METHODOLOGY
The study was carried out in two Local Government Areas of the Delta State. The State, estimated to have a land area of 176,987km^2 and has 25 Local Government Areas with the capital at Asaba. Its population is 4,170,214 based on the 2006 census figures (AWC, 2006). Geographically, the State is accommodated between longitudes 5.00^0 and 6.45^0 North and latitudes 18^0 and 23^0 South. It is flanked by Edo State to the North, Ondo State to the North-West, Anambra State to the East and it is bounded in the South by the Bight of Benin and has an Atlantic Coastline of 160km (MANR, 1998).

The State is made up of diverse ethnic and tribal groups and mostly inhabited by the Isoko, Ika, Urhobo, Itshekiri, Ijaw, Ukwuanis, and Aniocha speaking people. Their predominant occupation is farming which encompasses fishing, cropping and animal rearing. Besides farming, the inhabitants also engage in various other occupations such as oil prospecting, civil service, trading and commerce (AWC, 2006).

The State lies within the tropical region of West Africa and is characterised by mangrove forest. Its climate is marked by two distinct seasons, the dry and rainy seasons. While the rainy season begins in March or April and last till October, the dry season occurs between November and March or April. There exists a brief dry spell in August commonly referred to as August break. The average rainfall in the State ranges between 252-254mm and the average temperature ranges from a minimum of 24^0c to a maximum of 33^0c (Federal Office of Statistics, 2004).

The two LGAs where the study was carried out are Ika South and Ika North East LGAs. These LGAs were purposely chosen because they are majorly known for yam trade in the State. From each LGA, five markets were chosen, thus bringing the number of markets used for the study to ten. The markets were Alihagu, Oki, Abovo, Baleke and Omumu markets (chosen from Ika South). While those chosen from Ika North East LGA were Igbodo, Ekwuoma, Akumazi, Azu- Owa and Umunede main markets. From each market, eight wholesale yam marketers were randomly selected. This brings the total number of wholesalers used to eighty (80).

Data were obtained from the marketers with the use of structured questionnaires administered to the marketers through personal contact with close observation on the marketers' activities. Descriptive statistics was used on one hand to analyze the socio-economic characteristics of the marketers while multiple regression was used to determine the relationship between the identified margin and variation in its magnitude.

The implicit function is given as:
$Y = f (X_1, X_2, X_3, --- , X_n)$
Explicitly, the estimated function was:
$Y = bo + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + e$
Where,
Y = Size of margin
X_1 = Transport cost

X_2 = Marketing charges
X_3 = Commission agents fee
X_4 = Loading and off-loading charges
e = Error term

Different regression functions like linear, exponential, semi-log and Cobb Douglas were used to run the marketers socio-economic characteristics on marketing margin. The same regression functions were also used to run the marketing functions on marketing cost. Out of the regression functions used, the exponential regression function was adopted in both cases as the lead equation based on the highest coefficient of determination (adjusted R^2), with most likely the highest F-statistics, number of significant variables and the signs of the estimated coefficients.

RESULTS AND DISCUSSION
Demographic characteristics of respondents
As revealed in Table 1, yam wholesale marketing is majorly carried out by males (78%), most of them are married (73.8%) and have up to secondary school qualification (70%). Most of them (47.5%) belong to the age bracket of 50 – 59 years. The mean age was 48 years and they are all into full – time marketing of yam. Majority of them (86.3%) market only yam and have 10 – 14 years experience in the trade. The mean years of marketing experience was 9 years.

The predominance of males in the trade could be attributed to the fact that the trade requires huge capital outlay which could be accessed mostly by men (Oyekale, Awoyemi and Jaiyebo, 2003). Another reason for male dominance could be attributed to the stress (such as time, travelling, strength and staying under the sun) involved in carrying out the marketing activities which many women may not be able to meet up with. A possible explanation for the dominance of married people in the trade implies that yam trade is a source of livelihood for the marketers and their families. Results show that a good proportion of them are educated. This accounts for why they are been able to manage their finances since education enhances the capacity of individuals to understand, manage and work with new ideas (Ewuola and Ajibefun, 2000). The mean age of the marketers shows that they are old people and going by the African context, such categories of people are likely to be married and also have large households that could assist in carrying out some of the marketing functions. The mean of marketing experience shows that the people are experienced in the trade, a knowledge which would enable the marketers understand the intricacies of the trade and thus know how to cut down on marketing cost while attempting to maximize profit.

Table 1: Demographic characteristics of yam wholesalers

Variables	Frequency	Percentage
Sex		
Male	63	78.8
Female	17	21.3
Marital status		
Single	4	5.0
Married	59	73.8
Divorced	10	12.5
Widow	7	8.8

Level of education

No formal education	2	2.5
Primary school	18	22.5
Secondary school	56	70.0
NCE/OND	4	5.0
Age		
<30 years	3	3.8
30 – 39	14	17.5
40 – 49	21	26.3
50 – 59	38	47.5
60 and above	4	5.0
Mean	48.2	
Marketing status		
Full time marketer	80	100
Part – time marketer	-	-
Crops marketed		
Yam only	69	86.3
Yam and other crops	11	13.8
Years of marketing		
< 5years	18	22.5
5 – 9 years	24	30.0
10 – 14 years	36	45.0
15 – 19 years	2	2.5
Mean	8.6	

Source: Field survey, 2009

Size of the marketing margin

Table 2 shows the size of the marketing margin for yam wholesale in the State. Results revealed that the average marketing cost which includes, buying, transportation, loading and off-loading of an average sized tuber of yam is ₦84.30 and this accounts for about 70.25 percent of the consumer price. While the difference (marketing margin) between marketing cost and consumer price is ₦35.70 and this accounts for about 29.75 percent of the same consumer price. The result shows that the marketing margin is low indicating that the wholesale marketers are being exploited. Studies by Udele (1999) support this finding. He noted that the largest share of the consumer price is taken by the producers. The low margin could be reflective of the ability of most of the wholesalers to sell yam to all categories of buyers including consumers along the marketing channel.

Table 2: Average size of marketing margin per average size tuber of yam

Item	Magnitude (₦)
Average price of tuber at farm gate	60.00
Average transportation price per tuber	21.30
Loading and off-loading	3.00
Average consumer price	120.00
Marketing margin	35.70

Source: Field survey, 2009

Analysis of marketing margin of yam

The result as shown in Table 3 revealed that the low marketing margin is also reflective of the non-exploitative nature of the middlemen at the consumers end. This is indicative of the bargaining power of the consumers, as there is absence of uniform measure and as such absence of uniform price in the sale of yam. In a nutshell, sale is done at the marketer's discretion.

Among all the marketing functions carried out in the marketing process, loading and off-loading constitute about 10.13 percent, commission agents about 9.12 percent, marketing charges about 8.78 percent while transportation constitute the highest (71.96%). The transportation cost as noted by the marketers is influenced by the long distance between sources of supply and the markets where the yams are sold, extortion of drivers by the Police at checking points and the poor rural road net work. High transport cost was identified by Adeyokunnu (1980) to be associated with agricultural marketing and as such considered as a constraint to the market. Findings of Adegeye and Dittoh (1985) also confirmed transportation as the highest marketing function carried out in agricultural marketing. Marketing charges were influenced by the need to employ night guards who help secure the yams at nights and non-market days. Also included in the market charges are the annual dues, which the marketers pay to their yam market associations, rent and squatting permit.

Table 3: Functional analysis of the marketing margin of yam

Component	Average cost per tuber	Percentage
Transportation	21.30	71.96
Marketing charges	2.60	8.78
Commission agents fee	2.70	9.12
Loading and off-loading	3.00	10.13
Total	29.60	100.00

Source: Field survey, 2009

Influence of demographic characteristics on marketing margin of yam

Regression was used to assess the influence of demographic characteristics of the marketers on the marketing margin of yam wholesale. The result is presented in Table 4. It showed that computed F value (168.964) is significantly high at the 1% level, denoting that the collective influence of these variables on yam wholesale marketers margin is significant. Adjusted R^2 was 0.725 indicating that the explanatory variables explained about 73% variation in the marketing margin of yam. Out of the five explanatory variables, three of them namely, marital status (-0.436), age (0.088) and years of marketing experience (-0.239) have a significant influence on the respondents marketing margin.

The coefficient (beta = 0.088) for age is positive and significantly related to marketing margin at the 1% level (t value = 2.872). It implies that the more advanced respondents will know about the intricacies in the marketing process and so will be able to cut down on cost and therefore make more profit. This finding is supported by that of Iheanacho and Mshelia (2004). Marital status is significant at the 1% level (beta = -0.436; t = -4371). The coefficient for marital status is negative for the marketing margin of respondents. This means that married respondents spend less on their marketing cost than the single marketers. The reason for this could be traced to the fact that married respondents may have larger household who may assist them in carrying out some of the marketing functions thereby earning a higher marketing margin.

Table 4: Relationship between marketers' characteristics and marketing margin

Explanatory Variables	Unstandardized Coefficients (B)	Standardized Coefficients (Beta)	t - values
Constant	10.125		102.91
Sex	-2.142	-3.495	-6.832
Level of education	2.029	2.343	4.377
Marital status	-0.138	-0.436*	-4.371
Yrs of marketing experience	-0.021	-0.239*	-4.078
Age	0.004	0.088*	2.872

F-value = 168.964, Adjusted = R^2 = 0.725, Critical F = 6.62

Significant at 1%

Source: Field survey, 2009

Household assistance is confirmed by the findings of Nagujja (2003). Years of marketing experience is significantly related to marketing margin in the wholesale yam market (b= -0.239; t= 4.078).The negative coefficient of years of marketing experience of the marketers implies that marketers with more years in the wholesale marketing of yam are bound to significantly spend less on marketing functions relative to marketers with fewer marketing years or new entrants into the trade. The reason adduced for this is that the more experienced marketers are, the more knowledge they would have on locations where the yam produce can be purchased more cheaply. This knowledge will help attract a higher margin to them. The report of Oyekale, Awoyemi and Jaiyebo (2003) agrees with this finding.

Influence of marketing function on marketing cost

Table 5 shows the regression results of the marketing margin for the various components that constitute marketing cost. The parameters, X_1, X_2, X_3, and X_4 respectively represent transportation cost, marketing charges, commission agent's fee, loading and off-loading of tubers. The variables show the marginal effect of each of them on the dependent variable (Y) (marketing cost) within the 10 markets. The results indicate that X_1 which is transport cost has a higher marginal effect than any other variable on marketing cost .The variable is significant at the 1% level (b= 0.868; t= 16.422) and it conforms to apriori expectation. What this implies is that the sale of more yams will attract higher marketing cost. The marketing charges (X_2) showed a negative value (b= -0.189; t= 3.633) and significant at the 1% level. It implies that the more yam tubers sold, the less the effect of the marketing charges on the margin.

Table 5: Relationship between marketing functions and marketing cost

Explanatory Variables	Unstandardized Coefficient	Standardized Coefficient	t-value
Constant	10.335		85.473
Transportation	0.187	0.868*	6.422
Marketing charges	-0.004	-0.189*	-3.523
Commission agents fee	0.092	0.741	1.246
Loading and off-loading	0.015	0.152**	4.137

*R^2 =0.789, F –Statisticsl =103.231, Critical F – 6.63; *Significant at 1%, **significant at 5%*
Source: Field survey, 2009

However, the combined effect of the four variables measured by the value of the coefficient of determination (R^2) showed that about 78.9% of the variation in the magnitude of marketing cost (Y) is explained by the variation in the four variables. F – Statistics value (103.231) showed that the relationship is significant at 1%. The results showed that though each of the independent variables except the commission agents' fee (fees paid by marketers to agents who bring buyers to them) (b= 0.741; t=1.246) is highly significant to affect the magnitude of the margin. Their collective effect would influence the size of the margin considerably. This implies higher economic burden on the consumer. The higher marginal effect of transportation cost implies that it is the major contributor among other factors of the high price paid by consumers of yam, which suggest an exploitative attempt by the transporters at the consumers end.

CONCLUSION AND RECOMMENDATIONS

The study identified transportation, loading and off-loading as well as payment of fees for squatting, selling permit and securing of yam tubers as the major functions carried out in the marketing of yam tubers. Out of all of them, transportation of the tubers contributed the highest of all the cost involved in marketing of yam. Following transportation in the hierarchy of cost is marketing charges paid by the marketers, charges paid for loading and off-loading of yam tubers and lastly is the commission agents fee paid by the marketers for the linking of buyers to them. By and large, a substantial portion (50%) of the consumer price was received by the producers. Transport cost, marketing charges, commission agents fee together with loading and off-loading were identified as major components of the marketing margin for yam tubers. These components put together explained up to 81% of the variation in the marketing margin. From the foregoing it could be inferred that the size of the marketing charges was relatively low while that of transportation is high, reflecting transporters to be exploitative at the consumers end.

Based on findings the study recommends that the Government both at Federal, State and Local Government levels should make available more feeder roads and rehabilitate the existing ones to enhance farm access and the ease of transporting the products to the urban centres. In a nut shell, transport cost should be the target if marketing margin is to be reduced. On the marketers' part, they should be encouraged to form cooperative societies that are duly registered to take advantage of bulk buying and transporting. Also, the marketers should be provided with lock and key stalls to reduce the incidence of theft and the amount of money paid to security guards. It is hoped that the application of these measures when applied would help reduce marketing cost, and consequently the price of the tubers.

REFERENCES

Acquah, E.T., Nganje, W.E., Evange, E. (1991). Economics of yam production (Dioscorea spp) in Cameroon, the case of FACO division. *Tropical root crops in a developing economy.* Proceedings of the ninth symposium of the ISTRC, Accra, Ghana. P. 376

Adegeye, A.J. and Dittoh, J.S. (1985). *Essentials of Agricultural Economics.* University of Ibadan, University press, Idadan, Nigeria. P. 251

Adekanye, T.O. (1988). *Readings in Agricultural Marketing.* London publishers Ltd. Ibadan, Nigeria. PP. 1, 2 and 12

Adeyokunnu, T.O. (1980)." Agricultural marketing and small farmers in Nigeria". In: S.O.

Olayide, J.A. Eweka, and V.E.Bello – Osagie (Eds.) *Nigerian small farmers: Problems and Prospects in Integrated Rural Development.* Published by Centre for Agricultural Rural and Development (CARD), University of Ibadan, Ibadan, Nigeria. PP.87 – 114

Ewuola, S.O. and Ajibefun, I.A. (2000). Selected media and socio-economic factors influencing innovation adoption by small-scale farmers: Empirical evidence from Ondo and Ekiti States, Nigeria. *Applied Tropical Agricultural.* PP. 24 - 26

FAO (1998). Food and Agricultural Organization. *Production Year Book.* Trade vol. 13(16): 32 – 39

FAO (2002). Food and Agricultural Organization. *Production Year Book.* Trade vol. 46(115): PP. 18 – 24

Iheanacho, A.C. and Mshelia, S.I. (2004). The economics of retail and wholesale local rice marketing in Adamawa State of Nigeria, proceedings of the 2004 annual conference of the Nigeria Association of Agricultural Economics, held at the Dept of Agricultural Economics and Rural Sociology, ABU, Samaru – Zaria. PP. 1 - 5

IITA (1985). *Research Highlight. "*Plant density of yam minisett", International Institute of Tropical Agriculture PP. 114 – 118

Malcom, C.B. (1999). *Post – harvest food losses and the World food problem.* Department of Food Science and Technology Publishing Co., Geneva. PP.31 – 41

Nagujja, S. (2003). The relationship between socio-economic characteristics of maize farmers and household food security in Eastern Uganda. *Journal of Rural Development.* 19(1): 2 - 12

Nwasike, C.C. (1984). Breeding Nigeria food crops for processing. *Nigeria Food Journal* (NIFOR) 2 (1): 51

Nweke, F.I., Ugwu, O., Asiedu, C.I.A. and Ayi, P. (1982). Production cost of yam based cropping systems of Southern Eastern Nigeria. *Research and Crop Management Programme.* IITA, Ibadan, Nigeria. PP.34 - 35

Olayemi, J.K. (1992). "Improved marketing as a strategy for generating increased food production": A Nigerian experience, West Africa. *Journal of Agricultural Economics.* 5(2) PP.24 – 36

Oyaide, W.J. (2002). "Agricultural business and finance". A seminar paper presented at the Dept. of Agricultural Economics and Extension, University of Benin, Nigeria. PP.1 – 12

Oyekale, A.S., Awoyemi, T.T. and Jaiyebo, O.I. (2003). Marketing functions and determinants of profits among frozen chickens marketers in Ibadan. *African Journal of Livestock Extension.* 2(1) PP.19 – 23

Parikh, A. Alli, E. and Mirkalan, S. (1995). Measurement of economic efficiency in Pakistan Agriculture. *American Journal of Agriculture.* 32(6): 53 - 61

Saini, R.S. (1991). Finding a way through maize. *Journal of African Farming and for Processing*.2(4) P. 18 - 19

Udele, G.O. (1999). "Marketing margin for cassava and yam in Ijebu-Ode L.G.A., Ogun State". A paper presented at the Dept of Agricultural Economics, University of Ibadan, Nigeria. PP.34 – 36

Venessa, S. and Jonathan (1992). *Economic Analysis of Agricultural Marketing.* Overseas Development and Administration – Publishing Company, U.K. Natural Resource Institute Chatham. PP.12 – 25.