ANALYSIS OF SOCIOECONOMIC FACTORS INFLUENCING EFFICIENCY OF YAM MARKETING IN SOUTHERN TARABA STATE, NIGERIA

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Abstract

This study analyzed the effect of socioeconomic variables on marketing efficiency of yam marketers in Southern Taraba State, Nigeria. Data were collected using questionnaire administered to 168 respondents from the sample frame of the markets. Data were analysed using descriptive statistics and multiple regression. The study revealed that 67.84% of the marketers are male with mean age of 42 years. Majority (64.88%) are married with mean household size of 4 persons. It also revealed that 42.86% of yam marketers had below 10 years marketing experiences with mean experience of 13 years. The marketing efficiency was 635.60%, implying that the marketers recovered the marketing costs and margin above 100%. Precision of the model that analyzes the factors influencing yam marketing efficiency showed that the variable in the model accounts for 88.1% of the variations observed. The variables influencing marketing efficiency of the respondents in the area were: age (5%), marital status (1%), household size (1%), education (10%), marketing experience (1%), cooperative (1%) and main occupation (10%).

Keywords: *Analysis, Socioeconomic, Factors, Efficiency, Yam, Marketing*

INTRODUCTION

Nigeria's socioeconomic history and advancement has been solidly associated with its agricultural sector. The major and fundamental component of the Nigerian economy is agriculture which holds the key to rural development, poverty alleviation, and overall economic development. In 2014, agriculture contributed between 20% and 27% of real GDP, with crop production being the primary driver of economic growth and constituting an important activity in the agricultural sector (Ezeano, 2015). Just yam and cassava among any remaining food crops are producing at a degree of relative benefit in Nigeria (Ogaji *et al*., 2022). In the year 2005 and

2008, the area likewise contributed for up to 42% of Gross domestic product and gave paid and independent work to over 70% of the country's populace. According to Akerele *et al*. (2019), the country's primary food crops—yam, maize, sorghum, millet, rice, cocoyam, and cassava—accounted for approximately 76% of the agricultural sector's contribution to GDP and generated approximately 28% of GDP. Root and tuber crops incorporate harvest covering a few genera. They are staple food crops, being the wellspring of everyday starch consumption for the enormous people of the world. The term root and tuber crop alludes to any developing plant that store consumable materials in the underground root, corm or tuber (Toluwase and Sekumade, 2017). According to Abdulrahman *et al*. (2016), root and tuber crops are among the most important groups of staple foods in many tropical African nations and Nigeria's primary source of calories. Nigeria being a tropical nation is one of the greatest producers of yam on the planet. Late world records uncovered that Nigeria represents 65% of the absolute world creation of yam; around 38 million metric ton which is developed on 3 million-hectares area of land in 2012 was esteemed at $8 billion (Odigbo *et al*., 2015).

Yam is a significant source of income for all value chain participants. Yam is one of the principal root crops in Nigeria both regarding land under cultivation and in volume and value of production. It is one of the carbohydrate foods that are nutritionally superior to most roots and tubers in terms of digestible proteins and minerals such as Calcium, Magnesium and Potassium. Yam has high relative worth per unit of land utilized in its cultivation when compared with other crops particularly, the cereals (Egbeadumah *et al*., 2022). Yam is an important food crop especially in the yam zone of West Africa, including Cameroon, Nigeria, Benin, Togo, Ghana and Cote de ´vore. This zone produces more than 90% of the total world production, assessed at 20-25 million ton each year. Yams are major sources of income and have high cultural value. They are utilized in fertility and marriage ceremonies with a festival held annually to celebrate its harvest. Consumers' interest and demand for yam is generally very high in this sub-region and yam production is very profitable regardless of high production cost (Akerele and Obafunso, 2019). Yam is viewed as an important energy giving staple food in Nigeria as in other parts of the tropics. It positions second after cassava among different roots and tubers. In the West African sub-region, yam has the potential to alleviate poverty and maintain food security among rural producers, traders, processors and consumers. Its tubers can be eaten in different forms, ranging from boiling, roasting, frying, pounding into paste as well as processing into yam flour which can be eaten with soup. Its peels can also be processed into livestock feed. Therefore, it is viewed as an important staple to combat food insecurity wherever in the world (Offor *et al*., 2016).

Marketing by and large involves the movement of goods from producers to the final consumers a course that is generally connected with brokers of which the distributer (wholesaler) is one (Okoedo-Okojie and Okwuokenye, 2016). Because it serves as a mechanism for both exchange functions and the legitimate coordination of exchange through price signals that indicate and shape producers' and consumers' incentives in supply and demand interaction, the marketing system is crucial to healthy economies. A very much organized and oversaw marketing framework is supposed to supplement the ranch production endeavors towards the realization of its beneficial objectives through the arrangement of spot, ownership, structure and time utilities (Nwaigwe *et al*., 2019). According to Samuel (2018), it denotes a real or imaginary location where buyers and sellers interact directly or through intermediaries (middlemen) to trade goods, services, or instruments in exchange for money or barter. A market that is efficient doesn't simply join purchasers and merchants together, however it likewise empowers business visionaries to capitalize on the significant opportunities to upgrade and work on because of interest and cost signals. An efficient marketing framework is viewed as a pre-essential for brief conveyance of labor and products. Brief conveyance of products at a sensible cost is possible right when the market works in successful rivalry (Nwaigwe *et al*., 2019). The level of effectiveness is normally a rule by which marketing frameworks are assessed.

Nigerian agribusiness has failed to supply sufficient food in quantity and quality to feed the continually growing population. This failure could be credited to the problem of agricultural marketing and food distribution which drives and encourages production process by acting as a connection between producers and consumers through delivery of feedback. However, Nigerian agricultural marketing is not performing optimally (Abah and Abu, 2020). The stream includes a long chain of intermediaries which without creating value added, merely keep stretching the chain. The involvement of these needless intermediaries has constrained the development of the sector and deprived the farmers of equitable returns. However, the nature of the product on one hand and absence of coordinated marketing system on the other have brought about low profit. Besides there are difficulties associated with yam marketing, primarily on knowledge of grading, market information, excessive intermediaries, price, seasonality, limited numbers of buyers and absence of markets. There is increasing market gap between demand and supply of yam in Nigeria as a result of fast growing population and unstable yearly supply. The situation is also aggravated by the absence of efficient marketing system, poor marketing performance and other inadequate storage facilities. Storage losses and marketing are significant market problems of yam business, besides corruption, bad roads, unfortunate transportation system, and high cost of transport, price instability and poor storage infrastructure in market places (Kassali *et al.,* 2018).

Moreover, Ibrahim *et al* (2020) noted that so many socio-economic, political, and other economic factors as the significant inefficiencies characterized the operation of the marketing system in most developing countries like Nigeria. In the light of the above background, therefore, this study was designed to determine the socio-economic factors influencing yam marketing in southern Taraba State, Nigeria. This will bridge the gap in knowledge on marketing of yam; provide useful information that would be used to formulate marketing development programs; and improve organization of daily markets that will increase the level of marketing. The objectives were to describe the socioeconomic characteristics of yam marketers in the study area and determine the socioeconomic factors influencing yam marketing in the study area.

METHODOLOGY

Study Area
The study was conducted in Southern part of Taraba State, Nigeria. The Southern part is comprised of five Local Government Areas (Takum, Wukari, Donga, Ussa, and Ibi). It lies between latitudes 8º30′0″N and 9º30′0″N of the Equator and between longitudes 8º30′0″N and 10º30′0″E of the Greenwich Meridian. The region covers an area of 14,099 Km² land mass with a population of about

687,077 people as at 2006 (NPC, 2006). The National Population Commission had projected an annual growth rate of 3.5% which brought the population figure to 1,233,080.294 people as at 2023. The area shares boundaries with Gassol, Bali, Kurmi, Gashaka and Karim-lamido Local Government Areas to the North, Nasarawa State and Plateau State to the North-west, Benue State to the South-West and Republic of Cameroun to the South-East. It has wet and dry seasons, well drained alluvial soils and characterized by both savannah and rain forest vegetations. Its dry season lasts for a minimum of four months (December to March) while the wet season spans early March to late November in the south. The region has mean yearly precipitation of 1800mm. Majority of the population consists of peasant farmers cultivating food and cash crops like Sorghum, Yam, Maize, cassava, Sesame, rice among others, at a small-scale level, fresh water fishing and forest activities. Livestock keeping is a minor occupation of the population of the area dealing on goats, sheep, rabbits and fish farming. Other activities include trading and civil service. The people live mostly in organized settlements, towns and villages. The predominant ethnic group found in the area is Jukun (that is Kuteb, Wapan, Wanu, Kpanzun, and Ichen) and others are Tiv, Chamba, and Hausa just to mention a few (Rukwe *et al.,* 2019).
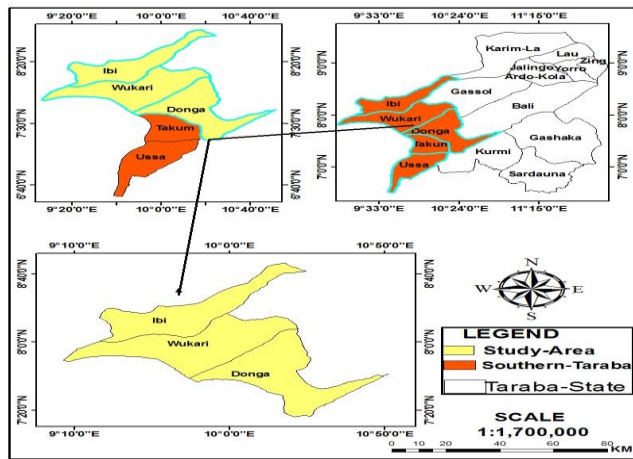

Figure 1: Map of Taraba State showing the study area
Source: The Authors, 2023

Sources and Methods of Data Collection
Primary data were utilized for this study. The primary data were collected through the use of structured questionnaire administered to the respondents to elicit information on their socioeconomic characteristics, marketing efficiency, influence of socioeconomic variables on marketing efficiency in the study area.

Sampling Technique
The study employed the use of multistage random sampling procedures in the selection of the study area and the respondents. In the first stage, three (3) local government areas (Wukari, Ibi and Donga) were purposively selected from Southern Taraba State based on their predominance in yam marketing in the area. In second stage, one yam market was selected from each of the selected local government areas based on concentration of yam marketers. In the last stage, marketers were selected using simple random sampling in proportion to the population of registered marketers in each selected market. The Taro Yamane sample size formula was used to determine the sample size of 168 respondents for the study. The Taro Yamane formula for sample size calculation as modified and adopted by Daniel and Akintunde, (2022) is presented as follows:

$$n = \frac{N}{(1 + N\varepsilon^2)} \quad \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots (1)$$

Where;

n = sample size

N = Population of yam marketers, and

ε = adjusted margin error (7%)

Therefore, sampling size $(n) = \frac{958}{1 + 958 \times 0.07^2} = 168$

Following (Jonah *et al.*, 2020) the number of respondent in each markets were obtained with the help of the formula below as shown in Table 1.

$$NI = \frac{n}{N} \; X \; Ni \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots (2)$$

Where;

NI = sample size in each market

n = actual sample size, that is 168

N = actual number of marketers in the targeted population, that is total sample frame (958)

Ni = actual number of marketers in each market

Table 1: Sample Frame/Sample Size for the Study

LGA	Markets	Sample Frame	Ni = $\frac{n}{N}$ X Ni	Sample Size
Wukari	Wukari yam market	827	(168/958) x 827	145
Ibi	Sarkin kudu yam market	38	(168/958) x 38	7
Donga	Tor Damisa yam market	93	(168/958) x 93	16
Total		**958**		**168**

Source: Marketers Association, 2023

Analytical Technique
Data collected were subjected to descriptive statistics such as frequency, percentages and mean and Multiple Regression Analysis.

Descriptive Statistics
The data on socioeconomic characteristics of the respondents were analyzed using descriptive statistical tools such as frequency, percentage and mean.

Multiple Regression Analysis
Multiple regression analysis was used to analyze the socioeconomic factors influencing the marketing efficiency of yam marketers in the study area. The model is implicitly stated thus:

$$Y = f(X_1, X_2, X_3, X_4, X_5, X_6, X_7, X_8, X_9 U) \dots\dots\dots\dots\dots\dots (3)$$

Based on the economic, econometric and statistical criteria, the model specified was subjected to four functional forms and the lead equation was selected. The four functional forms fitted were

linear, Cobb-Douglas, semi-log and exponential. The functional forms were expressed in the implicit forms as:

Linear form

$$Y = b_0 + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5 + b_6X_6 + b_7X_7 + b_8X_8 + b_9X_9 + U_i \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots (4)$$

Double-log form

$$lnY = b_0 + b_1lnX_1 + b_2lnX_2 + b_3lnX_3 + b_4lnX_4 + b_5lnX_5 + b_6lnX_6 + b_7lnX_7 + b_8lnX_8 + b_9lnX_9 + U_i \dots\dots\dots\dots\dots\dots\dots\dots\dots (5)$$

Semi-log form

$$Y = b_0 + b_1lnX_1 + b_2lnX_2 + b_3lnX_3 + b_4lnX_4 + b_5lnX_5 + b_6lnX_6 + b_7lnX_7 + b_8lnX_8 + b_9lnX_9 + U_i \dots\dots\dots\dots\dots\dots\dots\dots. (6)$$

Exponential form

$$lnY = b_0 + b_1X_1 + b2X_2 + b_3X_3 + b_4X_4 + b_5X_5 + b_6X_6 + b_7X_7 + b_8X_8 + b_9X_9 + U_i \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots (7)$$

The model with the best fit was selected as lead equation

Where;

Y = Marketing Efficiency (%)

i = Number of Independent Variables;

b_0 = Constant Term;

b_1 - b_9 = Regression Coefficients;

X_1 = Gender (1, Male; 0, Female);

X_2 = Age (Years);

X_3 = Marital Status (1, Married; 0, Otherwise);

X_4 = Household Size (Total Number of Person);

X_5 = Level of Education (0, Non-Formal; 1, Primary; 2, Secondary; 3, Tertiary);

X_6 = Marketing Experience (Years);

X_7 = Membership of Cooperative Organization (1, Membership; 0, Otherwise);

X_8 = Access to Credit (1, Access; 0, Otherwise);

X_9 = Occupation (1, Yam marketing; 0, Otherwise);

U_i = Error Term.

RESULTS AND DISCUSSION

Socioeconomic Characteristics of the Yam Marketers

The analyzed result of socioeconomic characteristics of yam marketers concerning their gender, age, marital status, household size, educational level, marketing experience, main occupation, source of capital and membership of association is presented in Table 2.

The result shows that 68% of the yam wholesalers were males, while 32% were females which mean that male folks dominate yam wholesale marketing in the study area as compared to their female counterparts. This may be connected to the bulkiness of yam that requires more labor which most females cannot contend with. Omojola (2014) noted that the marketing of yam is an energy demanding activity which requires men who are naturally endowed with abundant physical strength necessary for such jobs. The dominance of the males wholesalers in the business may also be

that men have to go to offices, farms and other places in order to ensure the provision of the capital (money) required for family transactions and could not dedicate the time to sell in pieces as retailers to consumers. This result agrees with the findings by Iroegbute *et al*. (2022) who reported that majority (60%) and (63%) were male in the urban and rural markets respectively in the urban and rural markets of the central agricultural zone of Nasarawa State, Nigeria and Kanu *et al. (*2021) which observed that a total of 62% of the yam marketers were male; while the other 38% were females, indicating that greater percent of the yam wholesalers in the study area were males. The study contradicts the finding by Fadipe *et al*. (2015) who reported that majority of cocoyam wholesalers and retailers were females.

Age refers to the number of years person has lived and it is determinant factor of the quality labour supply in marketing enterprise. The results presented showed that majority of the respondents (69%) were less than 50 years of age, while only 31% were more than 50 years with the mean age of 42 years. This means that majority of the marketers are still in their active productive ages; an economic active age that can make positive contribution to agricultural production which may translate to improved profitability of yam marketing and constitute the working force of the populace to accomplish the tedious task of taking yams from the farm gates to the markets. The involvement of young and middle age marketers could be attributed to the fact that youths like quick money which is characteristics of yam marketing unlike yam production which takes about 8-9 months period for it to mature. The participation of old people in the yam marketing could be due to the fact that yam marketing activities particularly selling is not longer a new activity for experienced old people to undertake since they have been doing it from their youth. This agrees with the findings of Ogaji *et al*. (2022) who revealed that the mean age of various actors, producers 43, wholesalers 37, retailers 35 and processors 40 years respectively which implies they are still in their active productive age.

Marital status plays a significant role in marketing enterprise if both males and females participate in marketing activities (Girei *et al.*, 2020). Marital status of the yam wholesalers revealed that majority of the respondents (65%) in the study area were married, while 35% were not married. This implies that yam marketing in the area is an enterprise undertaken by married people and this may be that they see it as a means of livelihood for income generation for the family and also due to the fact that the family members could serve as a source of labour. In addition, married people are seen to be responsible according to societal standards. The result agrees with the finding by Akerele and Obafunso (2019) which revealed that majority (68%) of the respondents were married, only (32%) of them were single. The implication is that a greater proportion of the respondents could have access to extra financial, moral and physical support from their spouses that could boost their capital base.

Household usually are partly or wholly suppliers of labour for marketing agricultural products by small and medium enterprises. Majority (83%) of the respondents had household size of 9 persons or less in their households, while 17% had household size of more than 9 persons in their households and the mean household size was 4 persons. Considering the present economic situation of Nigeria and the global economic meltdown, having a large family size may constitute a constraint to high standard of living because much money will be required to adequately take care of family

members. However, large family size could be advantageous in terms of labour supply, thus contributing to the family income and may also reduce the running costs of marketing. The study agrees with the finding by Onyenobi *et al.* (2014) which revealed a large household size (72%) were having household of 6 persons and above.

Education is of great importance in decision making process. The result obtained revealed that majority (77%) of yam marketers in the study area had one form of formal education or the other as against 23% that claimed not to have any form of formal education. This level of education has implication on gathering information on marketing activities and marketing efficiency of the respondents. Notably, formal education is an essential tool for the adoption of effective communication system that encourages increase in the marketing of any agricultural produce. Thus, with this high level of literacy in the study area, yam marketers would easily adopt new marketing strategy which could improve their levels of efficiency and profitability and will also help in keeping proper records for better business management. The result agrees with the finding of Akerele and Obafunso (2019) which observed that 79% of the respondents had acquired one form of formal education or another.

Marketing experience refers to the number of years marketer spent in marketing enterprise. It may also affect adoption of innovation in marketing enterprise. Results on the marketing experience revealed that majority (92%) of the yam marketers had marketing experience of less than 30 years, while 8% had marketing experience of more than 30 years. The mean of marketing experience is 13 years. The relatively high marketing experience of the respondents would guide them in appropriate decision making on market prices and in solving recurrent marketing problems thereby increasing their marketing efficiency and profitability. This implies that experienced marketers will have better knowledge which would enable them understand the intricacies of the trade and then know how to cut down on marketing cost while attempting to maximize profit and marketing efficiency (Shehu and Mohammed 2017). The result agrees with the findings of Ogaji *et al.* (2022) who reported the mean marketing experience of 13 years for wholesalers in the yam value chain in Paikoro Local Government Areas of Niger State, Nigeria.

Main occupation of respondents is likely to take more of their time. The capability of the occupation to compensate for time spent could make the difference in marketing efficiency and profitability of the respondents. An evaluation of the main occupation of the yam wholesalers revealed that majority (64%) of the respondents were yam marketers, while 36% were into civil service and farming. This therefore depicts full concentration on the art of the business. The involvement of other respondents in other jobs and business may be attributed to the seasonal variations in yam marketing and engaging in other jobs keep them busy throughout the year, particularly during off-seasons. This agrees with the findings of Salau and Omotosho (2021) who reported that majority (88%) of the respondents have yam marketing as their primary occupation while only a few (14%) of the respondents embraced alternative occupation other than yam marketing as their primary occupation. It contradicts Akerele and Obafunso, (2019) which revealed that majority (47%) of the respondents engaged in farming as their main occupation, while a sizeable number of the respondents engaged in yam marketing (32%) and artisanship (21%) as their main occupation.

Source of capital of the respondents by the study revealed that majority (58%) of the yam marketers depend on their savings to fund their yam marketing, while 42% sources capital from outside. This implies that majority of the respondents cannot access credit and may be that they do not have collateral to access credit, high interest rates charged and also the long processes involved before receiving the money. This may have a direct negative effect on their market share since they cannot purchase much at a time to enjoy economic of scale. The result agrees with the findings of Onyenobi *et al.* (2014), who observed that all yam marketers depended on informal sources of fund for their marketing activities.

Cooperative societies provide assistance to their members in terms of credit to enhance profitability, information on new technologies and serve as medium of communication between members and marketing agents. Most (71%) of the yam marketers belonged to one marketer's association or the other, while only 29% do not belong to any marketer's association. Marketers' association help the yam marketers to negotiate for prices of commodities and also provide some level of marketing information and market protection to avoid excess exploitation from marketing agents. The result agrees with the findings of Akerele *et al.* (2019) which showed that majority of the respondents (91%) subscribed to the membership of marketing association, whereas 9% did not subscribe to the membership of marketing association.

Table 2: Distribution of Yam Marketers by Socioeconomic Characteristics

Variables	Frequency	Percentage (%)	Mean
Gender			
Male	114	67.86	
Female	54	32.14	
Total	**168**	**100**	
Age			
21-30	27	16.07	
31-40	36	21.43	
41-50	53	31.55	
51-60	41	24.40	
>60	11	6.55	
Total	**168**	**100**	**41.60**
Marital status			
Single	31	18.45	
Married	109	64.88	
Widowed	28	16.67	
Total	**168**	**100**	
Household size (No)			
1-3 persons	33	19.64	
4-6 persons	69	41.07	

7-9 persons	37	22.02	
>9 persons	29	17.26	
Total	**168**	**100**	**4.41**
Level of Education			
No formal	38	22.62	
Primary	13	7.74	
Secondary	61	36.31	
Tertiary	56	33.33	
Total	**168**	**100**	
Marketing Experience			
1-10	72	42.86	
11-20	48	28.57	
21-30	34	20.24	
>30	14	8.33	
Total	**168**	**100**	**13.24**
Main Occupation			
Yam marketing	107	63.69	
Farming	44	26.19	
Civil servants	17	10.12	
Total	**168**	**100**	
Source of Capital			
Personal savings	97	57.74	
Friends and relatives	52	30.95	
Bank loans	19	11.31	
Total	**168**	**100**	
Member of Association			
Yes	119	70.83	
No	49	29.17	
Total	**168**	**100**	

Source: Field Survey, 2023

Effects of Socioeconomic Variables on Yam Marketing Efficiency

The factors affecting the marketing efficiency of yam wholesale marketers in the area were analyzed and presented in Table 6. The F-ratio value from the regression model result was high and significant at 1% probability level showing the overall significance of the result. The R-Square (R^2) value was 0.881 which implies that about 88.1% of the variation in the marketing efficiency was explained by the explanatory variables. The constant term was positive and significant at 1% level with a coefficient of 0.666. This implies that marketing efficiency of the yam marketers will increase by ₦0.666 assuming other explanatory variables were held constant. The regression equation revealed that seven variables, age, marital status, household size, education level, marketing experience, membership of cooperative and main occupation were the significant variables influencing the marketing efficiency of yam wholesale marketers in the study area.

Age was positive and significant at 5% level of significance with coefficient of 0.088. This implies that marketing efficiency increases by 0.088 unit as the marketer gets older by one year. This could be as a result of the experience gain in years spent in marketing and the ability of the older marketers to have learned and adopted better marketing skills over the years. Hence, the *apriori* expectation was met, a suggestion that efficiency of yam marketers increased as their age increase. The results disagree with the findings of Ikpeazu and Moguluwa, (2017) and Oladapo *et al.* (2015).

Marital status of the yam marketers was statistically significant at 1% probability level with a positive coefficient of 0.276 for married individuals, indicating that the marketing efficiency of yam wholesale marketers in the study area will increase as more married people are involved in yam marketing. This showed that married marketers were more efficient than the single ones. This might be because married marketers gave full attention to their business and were motivated by family pressures of providing the needs of their family members. The reason could also be that married respondents have larger households who may in one way or the other help in carrying out some of the marketing functions like transportation, loading and off-loading as well as sorting of products, thereby lowering marketing costs while marketing efficiency and profit margin is increased. The result agrees with the findings of Kanu *et al.* (2021).

The household size of the yam marketers had a direct relationship on the marketing efficiency meaning that higher household size positively influenced marketing efficiency. Household size was positive and significant at 1% level of significance with coefficient of 0.240. This revealed that an increase of an individual in the household will increase marketing efficiency by 0.240 unit. This suggests that marketer's income is not spent on hired labour but rather invested in the business thereby increasing the marketing efficiency. The result agrees with the findings of Njoku and Nnamani (2016).

Educational level refers to the position individuals have attained in acquiring knowledge, skill, and experience through teaching and learning process (Ogaji *et al.*, 2022). The coefficient of educational level was positive and was significant at 10% probability level. This implies that an increase in the educational level of the marketers leads to a corresponding increase in their marketing efficiency. This is because educational attainment gives additional intellectual capability which may in turn leads to increase potentials for skills acquisition in marketing. It may also be attributed to the fact that respondents with higher educational level will be more innovative in handling the logistics aspect of the market. The result of the study agrees with the finding of Ogaji *et al.* (2022) who reported that wholesalers coefficient of educational level was statistically significant at 10% level of probability.

Marketing experience helps to reduce proportionately the transaction cost of participants which in turns increases marketing efficiency (Offor *et al.*, 2016). From the table, the coefficient of marketing experience was significant at 1% level and had a positive relationship with marketing efficiency. The estimate implies that one unit increase in marketing experience leads to 0.548 increase in marketing efficiency of the yam wholesale marketers. This means that, as marketing experience increases, marketing efficiency also increases. This is because the increase in marketing experience of the respondents would enable them to adopt certain activities like advisement and other pricing strategies to improve their marketing efficiency. The result agrees with the finding of Offor *et al.* (2016) which revealed that the coefficient of marketing experience was significant and positively related to marketing efficiency.

Membership in cooperative has a significant and positive effect on marketing efficiency at 1% level with coefficient of 0.204. The positive coefficient of the cooperative membership means that increases in cooperative membership of respondents would lead to increases in the marketing efficiency of the yam marketers by 0.204. This is because cooperative offers marketers the opportunity to access information and learn improved marketing strategies which tend to increase the marketing efficiency of the marketers. The result agrees with that of Oluwalana *et al*. (2019) which revealed that membership of association was positively significant at 5% probability level

Main occupation was negative and significance at 10% level significance level with coefficient of -0.021. This maintained that respondents that are mainly marketing yam are likely to have decrease of marketing efficiency by -0.021 unit as compared to their other counterparts. This could be because they have only one source of income to invest into the business hence they cannot purchase much of the yam to benefit from economic of scale. The result suggests lack of credit facilities to the marketers. This implies that market share decreases with marketers taking yam marketing as their main occupation.

Table 6: Effects of Socioeconomic Variables on Yam Marketing Efficiency

Items	Unstandardized Coefficients		Standardized Coefficients	t-Value
	B	Std. Error	Beta	
Constant	0. 666	0. 148		4.495***
Gender	-0.027	0.054	-0.018	-0.505
Age	0.005	0.002	0.088	2.550**
Marital Status	0.412	0.027	0.276	15.253***
Household Size	0.071	0.010	0.240	7.177***
Education Level	0.022	0.012	0.029	1.806*
Marketing Experience	0.077	0.005	0.548	15.829***
Membership	0.324	0.062	0.204	5.232***

Items	B	Std. Error	Beta	t-Value
of Cooperative				
Sources of Capital	-0.019	0.048	-0.012	-0.398
Main Occupation	-0.033	0.018	-0.021	-1.816*
F-Value				917.934***
R-Square (R^2)				0.881 (88.1%)

Source: Field Survey 2023

***Significant at 1% level, ** Significant at 5% level and *Significant at 10% level

CONCLUSION AND RECOMMENDATIONS

It can be concluded that that majority (68%) of yam marketers were male within the mean age of 41-50 years and have mean marketing experience of 13 years, majority (65%) are married with the mean household size of 4 persons. Majority (77%) of the marketers are educated and are into yam marketing as their main occupation (64%). Good numbers of them are into marketing association but still fund their business with personal savings. The regression analysis revealed that seven variables, age, marital status, household size, education level, marketing experience, membership of cooperative and main occupation were the significant variables influencing the marketing efficiency of yam marketers in the study area.

The following recommendations were made based on the findings of the study:

i. Governmental and Non-Governmental Organization should set programmes that will assist in providing credit facilities to yam marketers.

ii. Government should focus on market oriented agricultural development programs by emphasizing more on marketing extension.

iii. Governmental and non-governmental organization as well as private sector should develop education of traders through provision of highly efficient and technical extension services in the areas of agricultural marketing activities.

REFERENCES

1. Abah, E. O. and Abu, O. (2020). Market Performance of Categorized Soybeans Marketers in Benue and Nasarawa State, Nigeria. *International Journal of Innovative Research and Development*, 9(2):328-334.

2. Abdulrahman, S., David, A. I., Yusuf, O., Abdulazeez, R. O. and Binuyo, G. (2016). Analysis of livelihood diversification by farming households in Kaduna State, Nigeria. *2nd International conference on Dry land Agriculture, Centre for Dryland Agriculture, Bayero University, Kano.* 45-49.

3. Akerele, E. O. Yusuf, M. O., Solana, O. I., Olugbemi, M. T. and Yangomodou, O. D. (2019). Performance Analysis of Yam Marketing in Yewa Division of Ogun State, Nigeria *International Journal of Innovative Food, Nutrition and Sustainable Agriculture,* 7(4):10-21.

4. Daniel, N. G. and Akintunde, M. O. (2022). Costs and Returns of Yam Production in Southern Taraba State, Nigeria. *Journal of Agripreneurship and Sustainable Development,* 5(1): 211-218.

5. Egbeadumah, M. O., Olayiwola, S. A., Akeredolu, T. D., Zarewa, M. N. and Gabriel, T. A. (2022). Economic Analysis of Yam Production in Ibi Local Government Area of Taraba State, Nigeria. *International Journal of Agricultural Extension and Research*, 7(2):24-30.

6. Ezeano, C. I. (2015). Analysis of the Influence of Personal and Socioeconomic Characteristics of Small scale Farmers on Sweet potato (Ipomoea Batatas L) production in South east Agro-Ecological zone, Nigeria. *International Journal of Agriculture and Bioscience*, 4(2): 49-53.

7. Girei, A. A., Audu, S. I., Inyang, H. B. and Aliyu, Z.T. (2020). Assessing the Performance of Orange Marketing in Lafia metropolis, Nasarawa State, Nigeria. *Direct Research Journal of Agriculture and Food Science*, 8(6): 158-166.

8. Ibrahim, U. S., Tahir, A. D., Abdullahi, B. D. and Abdu, A. (2020). Socio-Economic Factors Influencing Marketing Efficiency of Fresh Tomato Marketers in Yankaba Market of Nassarawa Local Government Area, Kano State, Nigeria. *Journal of Agricultural Economics, Environment and Social Sciences,* 6(2):71 – 80.

9. Ikpeazu, P. C. and Moguluwa, S. C. (2017). Factors Affecting Marketing of Yam: Wholesalers and RetailersMarketing Margin Analysis in Idah LGA of Kogi State. *Journal of Computer Engineering,* 19(6):56-68.

10. Iroegbute, U. K., Mohammed, I. and Jibril, S. A. (2022). Constraints to Yam (*Dioscorea Spp*) Price Formation in the Urban and Rural Markets of the Central Agricultural Zone of Nasarawa State, Nigeria. *Fudma Journal of Agriculture and Agricultural Technology,* 8(1): 383-392.

11. Jonah, S. E., Shettima, B. G., Umar, A. S. S. and Timothy, E. (2020). Analysis of Profit Efficiency of Sesame Production in Yobe State, Nigeria: A Stochastic Translog Profit Function Approach. *Asian Journal of Agricultural Extension, Economics and Sociology, 38(9): 58-70.*

12. Kanu, I. M., Onwukwe, F. O. and Maduforo, J. C. (2021). Analysis of Yam Marketing In Ngwa Road Market, Abia State, Nigeria. *Black Sea Journal of Agriculture,* 4(1): 33-40.

13. Kassali, R., Girei, A. A. and Sanu, I. D. (2018). Analysis of Yam Marketing in Akoko North East Local Government Area of Ondo State, Nigeria. *International Journal of Agricultural Marketing*, 5(1): 170-177.

14. Njoku, M. E. and Nnamani, N. G. (2016): Profitability and Marketing Efficiency of Ware Yam Trading in Umuahia North Local Government Area of Abia State, Nigeria. *Scholars Journal of Economics, Business and Management,* 3(2):58-63.

15. Nwaigwe, G. C., Lemchi, J. I., and Korie, O. C (2019): Analysis of marketing margin and efficiency of beans in Imo State. *International Journal of Scientific and Engineering Research,* 10(12):212-223.

16. Odigbo, B. E., Ogbidi, J. B. and Ewa, E. A. (2015). A situation analysis study of yam distribution strategies of farmers in Boki Local Government Area of Cross River State. Nigeria. *Journal of Economic and Sustainable Development,* 6 (14), 190-200.

17. Offor, E. I., Nse–Nelson, F. A. and Asokome, F. (2016): Determinants of Marketing Efficiency of Yam Market in Umuahia North Local Government Area of Abia State, Nigeria. *Agro-Science Journal of Tropical Agriculture, Food, Environment and Extension,* 15 (2):54 – 58.

18. Ogaji,A., Oseghale, A. I.,Yisa, F.,Samuel,Y. J.,Jimoh, K. K. and Abubakar, A. (2022). Analysis of Yam Value Chain In Paikoro Local Government Area of Niger State, Nigeria. *African Journal of Agriculture and Allied Sciences*, 2 (1): 217-232.

19. Okoedo-Okojie, D. U. and Okwuokenye, G. F. (2016). Characteristics and Potentials of Retail Marketing of Yam in Delta State, Nigeria: Implications for the Extension Services. *British Journal of Applied Science and Technology,* 14(2): 1-8.

20. Oladapo, M. O., Osundare, O. T., Osundare, F. O. and Oyebamiji, K. J. (2015). Effects of infrastructure on yam tuber marketing in four selected local government areas of Ekiti State, Nigeria. *Academia Journal of Biotechnology* 3(6): 097-103.

21. Oluwalana, E. O. A., Oladeji, S. O. and Bello, A. F. (2019). Economic Analysis of Yam Flour Processing in Saki, Oyo State, Nigeria. *Humanities, Social Sciences and Creative Arts*, 14: 30-46.

22. Omojola, J. T. (2014). Gross margin analysis and constraints to yam production in Osun State, Nigeria. *World Journal of Agriculture*, 2(4): 62-68.

23. Onyenobi, V. O., Ewuziem, J. E., Okoye, B. C. and Ogbonna, M. C. (2014). Analysis of Profitability of Water Yam (*Dioscorea Alata)* Marketing in Umuahia Agricultural Zone of Abia State, Nigeria. *Journal of Agriculture and Social Research,* 14(1): 98-108.

24. Rukwe, D. T., Abdullahi, Y. M., Faruk, A. U. and Nwaeze, U. (2019): The Effects of Farmers-Herders Conflict on Farming Households in Southern Taraba State, Nigeria. South Asian Research Journal of Agriculture and Fisheries, 1 (3): 106-111.

25. Salau, S. A. and Omotosho, S. A. (2021). Assessment of Public Relations among Yam Marketers in Lagos State, Nigeria. *Tropical Agricultural Research and Extension,* 24 (1): 1-9.

26. Samuel, A. O. (2018). An Assessment of the Socio-economic Impact of Wukari Yam Market in Wukari Local Government Area Taraba State, Nigeria. *International Journal of Modern Education Research,* 5 (2): 20-25.

27. Shehu, A. S. and Mohammed, A. S. (2017). Economic Analysis of Tomato Marketing in Ilorin Metropolis, Kwara State, Nigeria. *Journal of Agricultural Sciences*, 62(2): 179-191.

28. Toluwase, S. O. W. and Sekumade, A. B. (2017). Resource Use Efficiency of Yam Production in Ekiti State, Nigeria. *Advances in Social Sciences Research Journal.* 4(2); 20-34.