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ECONOMICS OF YAM PRODUCTION AND MARKETING IN TARABA STATE, NIGERIA

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ABSTRACT
The study analysed the economics of yam production and marketing in Taraba State. Specifically, the study described the socio-economic characteristics of yam producers and marketers, determined cost and returns of producers and marketers. A multi-stage purposive and simple random sampling was employed in the study. Data were collected with the aid of structured questionnaire. Descriptive statistics, net farm income and regression analysis were used in analysing the data. The result of the analysis showed that the respondents have a mean age of 40 years for both producers and marketers. 77% were male for the producers while 66% were females for the marketer. 35% of the producers had a form of tertiary education, while 46% of the marketers had secondary education as the highest form of education. Both producers and marketers had ₦1.45 and 0.99 for wholesalers and retailers, respectively as the average rate of return on every naira invested while the producers had ₦1.25 indicating that yam production and marketing is highly profitable in Taraba State. The result of the simple regression indicates that seed, farm size, age and farming experience were significant at 5% while fertilizer and household size were significant at 10%. Major constraints faced by both producers and marketers include lack of capital, insecurity and poor road network amongst others. The study recommends that producers and marketers should form formidable cooperative to enhance possible assistance from the Governments, also Government should intervene by building more rural roads network for ease of accessibility for yam producers and marketer. Marketers can make use of local securities such as vigilantes and also seek government security officials both on the farm and at the market place.

Keywords: Cost and Returns, Yam production, Marketing, Constraints, Coefficient.

INTRODUCTION
Yam (*Dioscorea species*) is an annual herbaceous vine and tuberous root with more than 600 species out of which six are economically important in terms of food and medicine (IITA, 2009). It is a starchy tuber rich in carbohydrate and of the genus "*Dioscorea*", family "*Dioscoreaceae*" and ranks second after cassava in the study of carbohydrates in West Africa (Uger, 2017; Ike and Inoni,2006; Olubukola and Bolarin, 2006; Emmanuel, 2017; Zaknayiba and Tanko, 2013). It is an important tuber crop of the tropics which originated from South East Asia, and found its way to West Africa in the 16th century. It is also grown in Latin American and the Caribbean countries like Colombia, Brazil, Haiti, Cuba and Jamaica (FAO, 2013).

Yam is a principal source of energy in the diet of many Nigerians. It could be eaten in diverse forms such as boiled, roasted, baked or fried. Quite a number of starch industries also use yam as an important source of raw materials in their production process. Its production activities provide job opportunities and income to both the producers and all those involved in the yam value chain. Yam also plays important roles in trado-cultural, ritual and religious activities of African people (Izekor and Olumese, 2010). It is reported that yam is part of the

religious heritage of several Nigerian tribes and often plays key role in religious ceremonies (Amusa, 2000). Due to its importance in most community's yam is celebrated at New Yam festivals annually across Nigeria (Shehu *et. al.*, 2010). Moreover, it also plays important role in socio-cultural gatherings and religious functions where an assessment is made of the status of a person by the size of yam holdings the person possesses (FAO, 2011).

Presently, Nigeria is the world's largest producer of yam. Since the 1990s it has been so with an all-time high output of 37.1 million metric tonnes, thus contributing two-thirds of global yam production each year (FAO, 2011). In spite of such a striking global contribution, the price of yam has continued to increase due to rising demand, market price instability, lack of transport and high post-harvest losses, the perverted role of middlemen and other key players' inability to invest in a situation of arbitrary and unstable government policy, poor road network, increases in the cost of doing business, reduced returns to farmers and increased prices to consumers. This sordid development could be attributed to problems such as land fragmentation, inadequate credit facilities, scarcity and high cost of production inputs, shortage of farm labour, lack of access to information on the use and application of modern improved farm practices and pests and diseases infestation, to mention a few. These production problems result in production inefficiency, low productivity and profitability (Ugwumba *et al.*, 2014).

Although results of previous studies on yam production and marketing across Nigeria have separately examined factors that affect yam production and yam marketing, available evidence indicates that there are still research gaps to be filled. Therefore, a detailed empirical analysis will enhance the understanding of the dynamics of yam production and marketing in Taraba State is not only timely but significant owing to the cardinal role of agriculture in the economy of the State.

Therefore, the following objectives were examined; to determine the economics of yam production and marketing. Specifically, the study described socio-economic characteristics of farmers in the study area, determined costs and returns and to ascertain the effects of socio-economic characteristics on yam production and marketing in the study area.

MATERIALS AND METHODS

The Study Area

The study will be conducted in Taraba State of Nigeria which is situated in the North-East geopolitical zone of Nigeria. Taraba State is comprised of sixteen (16) Local Government Areas (LGAs) and Yangtu and Ngada Special Development Areas. It is divided into four agricultural zones based on Agricultural Development Programme (ADP) classification: Zone 1, Zing, Yorro, Lau, Karim Lamido, Ardo Kola, Jalingo LGAs; Zone 2, Gassol, Wukari, Ibi, LGAs; Zone 3, Donga, Takum, Bali, Ussa, Kurmi, Gashaka LGAs, while Zone 4 is Sardauna LGA. It lies approximately between latitudes 6º 30'N and 9º 30'N of the Equator and between longitudes 9º 00' E and 12º 00' E of the Greenwich meridian. The state covers a land area of about 54,473km^2 with a projected population of 2,294,800 million people (NPC, 2006). It is bounded to the North by Bauchi and Gombe States, to the west by Nasarawa, Benue and Plateau States, to the east by Adamawa State and the South by the Republic of Cameroon. The State has a tropical climate marked by dry and rainy seasons (November–March) and (April–October) respectively. Annual rainfall ranged from 800mm to 1950mm while temperature ranged between 20ºC and 40ºC. Crops and livestock farming are the major occupation of the people of Taraba State. Crops produced include coffee, tea, cotton, groundnuts, maize, rice, sorghum, millet, cassava and yam among others, while cattle, sheep and goats are the predominant livestock reared across the State. Moreover, artisanal fishing is the vocation of inhabitants of communities along the banks of Rivers Benue, Taraba, Donga and Ibi.

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Sampling Procedure

A multi-stage random sampling procedure will be adopted to draw samples for this study as follows:

1. Stage 1 was selection of Local Government Areas: Purposive sampling technique was used to select eight (8) LGAs from the three agricultural zones where yam is predominantly produced in the State: Ardo Kola, Yorro and Zing (Zone 1); Gassol and Wukari (Zone 2); Donga, Bali and Gashaka (Zone 3).
2. Stage II was selection of districts: Two districts were randomly drawn from each of the eight LGAs to give a total of 16 districts that was covered in the survey.
3. Stage III was selection of villages: At stage three (3) villages were randomly selected from each district to give a total of 48 villages from which respondents was drawn for the study.
4. Stage IV: was selection of respondents: Ten (10) yam farmers were randomly selected from each of the 48 villages earlier sampled to give a total of 480 respondents from whom data were elicited with the aid of questionnaire.

Data Collection Techniques

Data were collected from primary and secondary sources. Primary data was obtained structured questionnaire while secondary data were obtained from published journals.

Data Analysis

Data obtained from the survey was analysed using budgetary analysis, multiple regression analysis and descriptive statics in order to realise the objectives of the study.

Farm Budgeting Techniques

Farm budgeting technique was used to evaluate the costs and returns in yam production in the study area over a period of one production season in order to determine the net farm income (NFI). It was estimated according to Olukosi and Erhabor, (1988) as;

$$NFI = \sum_{i=1}^{n} P_{yi}Y_i - \sum_{j=1}^{m} P_{xj}X_j - \sum_{k=1}^{k} F_k \quad . \qquad \ldots(1)$$

where;

NFI = Net farm income

Y_i = Gross output (kg)

P_{yi} = Unit Price of output Yi (₦)

Px_j = Price per unit of variable inputs (j=1,2,3,…m)

X_j = Quantity of variable input (j=1,2,3,...n)

F_k = Cost of fixed inputs (k=1,2,3,…k)

The following econometric model (multiple regression analysis) was employed to investigate the effects of predetermined variables on output in yam production;

$$YAM_{PD} = f(FM_{SZ}, LBR_{NPT}, PNT_{MAT}, AGR_{CHM}, FXD_{CPT}, u) \qquad \ldots(2)$$

where;

FRM_{SZ} = Farm size (ha)

LBR_{NPT} = Labour input (man-days)

PNT_{MAT} = Planting materials

AGR_{CHM} = Agrochemicals (litre, kg)

FXD_{NPT} = Capital consumption allowance (depreciation)

RESULTS AND DISCUSSION

Socio-Economics Characteristics of the Yam Producer

The age distribution of respondent as shown in Table 1 revealed that farmers whose ages were below 30 years were 12%, those between 30-39years were 38% while those between

40 – 49 years were 31%. The mean age was 40 years. Also, the mean age for the marketers is 40years. The implication is that most of the yam farmers and marketers in the study area are in their active age hence were agile and productive and can make positive contribution to agricultural production. The study however agrees with the findings of Zaknayiba and Tanko (2013). Rahman *et al.* (2013) which showed that farmer's age may influence productivity. Akintunde *et al*. (2019) who reported that marketers of agricultural produce are usually in their active age of 25-45 years. Ojo *et al.* (2013) in gender analysis of determinants of labour input among yam farmers in Paiko Local Government Area of Niger State revealed that yam farming was the primary occupation in the Area and it greatly contributes to the livelihood of both male and female farm managers, with 77.47% between the ages of 20-40. Production in the Area was both for consumption and sales.

The gender distribution indicated that there are more male yam farmers than their female counterparts 77% were male, while 23% were female. While in yam marketers there are more female than their male counterparts as 56% were female while 44% were male. This implies that more male than female were involved in yam production in the study area. This may be connected to the laborious nature of yam production which most females cannot contend with. The finding is in agreement with the finding of Zaknayiba and Tanko (2013), Daniel and Akintunde (2022) who observed that men dominated the workforce in yam production in the study area while women generally play vital roles in the actualization of the household farm target. Furthermore, Akintunde *et al.* (2019) also reported that a larger percentage of women that are in agricultural production are into processing and marketing, this is a believe system that is predominant in northern Nigeria which due to cultural and religious believe does not encourage women to be active on the farm but can be enterprising within the house premises to improve livelihood and sustainability. This study also agrees with the findings of the National Population Commission (NPC) (2016) who found out that men dominate the work force in Nigerian agricultural communities. This is so also because yam production is highly energy demanding activities, which requires men who are naturally endowed with abundant strength necessary for such job. Olorunsanya *et al.* (2015) reported male dominance in farming enterprise in Kwara State. Sixty-seven per cent of the married male heads practice polygamy due to cultural and religious beliefs of the people in the area. It also shows that yam production is a male dominated enterprise with over 85% of the heads of the yam farming households being male. This is to be expected judging from the fact that yam production is a labour-intensive enterprise.

According to Table 1 majority (74%) of the respondent were married, while 16% were single. Likewise, 65% of the marketers were married. This finding can be attributed to the fact that more hands are required in yam production and marketing. According to Girei et al. (2016) in their study of socio-economic variables and rural women participation in yam production in Gwagwalada Area Council, Abuja revealed that rural women were highly involved in yam production and majority (74%) of respondents were married, and 43% between the ages of 21 and 30 years were single. The implication of the finding is that marriage remains a valued culture in the study area. The higher percentage of married person is due to the fact that they derived an appreciable level of income which enhances productivity from yam production and marketing. Furthermore, Oladoja *et al.* (2008) attested to the fact that marriage is an important factor in improving family livelihood in yam producing communities.

Result in Table 1 also shows the distribution of respondents according to their educational level 10% of the respondent had no formal education, 17% had primary education, and 36% had secondary education while 35% had tertiary education. The result indicated that majority 91.6% of the respondent had one form of formal education while 8.3% had no formal

education. Also, the result from the marketers showed that 1% had no formal education, 5% primary education, 46% secondary education, 47% tertiary education. This also shows that both the producers and marketers have high likelihood of adopting improved yam practices technologies. Gali (2017) has pointed out that education has positive and significant impact on farmers and greatly influence their decision making and adopting of innovations that consequently affects their productivity.

The distribution of the respondents by household size as presented in the Table 1 shows that 31% of the respondents had house hold size of 1-5 persons while about 52% had household size of 6-10 persons and only 2% had household size of 16 and above with a mean size of 8 and maximum of 20, respectively. The marketers also had the mean of 8 persons per household. This implies that family labour would be readily available when needed for yam production and marketing activities. Furthermore, the fact that labour still features as one of the key constraints faced by yam producers and marketers, all over, its means that yam is a labour-intensive enterprise and that labour is a key input in its production, these finding is in agreement with Toluwase and Sekumde (2017) who revealed that farmers with large household size tend to benefit from household labour

Result as presented in Table 1 shows that 90% cultivated 1-5 hectare of land, while 10% cultivated 6-10 hectare with mean as 3 and 10 as maximum. This implies that majority of producers are small scale yam farmers. The finding is in agreement with Ochi *et al.* (2011) who reported that farmers operate on farm holdings of less than or equal to three hectares (3 ha). The study recommends increased farm size and labour use per hectare and reduction in yam seeds per hectare for efficient resource use and increased net farm income for better living standard for the farm households (Olorunsanya, 2015).

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Table 1: Socio-economic Characteristics of the Respondents

Characteristics	**Producer**				**Marketers**			
	Frequency (n = 242)			**%**	**Frequency (n = 91)**			**%**
Age								
20-29	30			12	17			19
30-39	91			38	32			35
40-49	74	Mean	40	30	29	Mean	40	32
50-59	33			14	10			11
60 & above	14			16	3			3
Sex Distribution								
Male	187			77	40			44
Female	55			23	51			56
Marital Status								
Single	40			17	29			32
Married	180			74	59			65
Widow	14			6	2			2
Widower	7			3	-			-
Divorced	1			.4	1			1
Household Size								
1-5	74			31	31			34
6-10	126	Mean	8	52	52	Mean	8	57
11-15	38			15	7			8
16-20	4			2	1			1
Education Level								
No Formal Education	19			7	1			1
Primary School	40			17	5			5
Secondary School	85			35	42			46
Nd/Nce	84			35	34			37
Hnd/Degree	14			6	9			10
Farm Size								
1-5	217			90				
6-10	25	Mean	3	10				
Farming/ Marketing Experience								
1-10	97			40	55			60
11-20	95	mean	15	39	29	mean	12	32
21-30	40			17	7			8
31-40	10			4	-			-
Producers/Marketers Source of Capital								
Personal	176			72	86			93
Friends	40			17	17			18
Corporative	26			11	11			12

The distribution of the respondents by years of farming experience as presented in Table 1. The results indicate a mean of 15 years and maximum of 40 respectively. The results reveals that 40% which constitute the majority had 1-10 years of farming experience, while 39% had 11-20 years of farming experience, 17% had also 21-30 years farming experience. About 17%

had 31years and above as farming experience, respectively. This implies that yam farmers in the study area all have a significant level of experience in yam production and that the managerial ability of the farmers can be inferred to be reasonably good. Farming experience affects farming decision and this implies that the more experienced a farmer become, the more efficient the farmer might be in the use of productive resources. The number of years spent in agricultural activities might serves as indication of practical knowledge acquired, (Ike and Inoni, 2006)

The distribution of the respondents by years of marketing experience as presented in Table 1. The Table indicates a mean of 12 years and maximum of 30 years, respectively. The Table reveals that 67% which constitute the majority had 1-10 years of marketing experience, while 15% had 11-20 years of farming experience, 9% had also 21-30 years marketing experience, respectively. This implies that yam marketers in the study area all have a significant level of experience in yam marketing and that the managerial ability of the marketers can be inferred to be convincingly good. Marketing experience affects market decision and this implies that the long years of experience that the marketer has acquired have helped them in the area of market information and improved their bargaining power thus increasing profitability Akintunde *et al.* (2019).

Cost and Returns Analysis of Yam Production

Table 2 shows cost and return of yam production in the study area. The Table depicted that ₦13, 191,785.39 representing 87.231% of the total cost was spent on variable cost items/ha and the remaining ₦ 1, 931,000 representing 12.769% of the total cost was spent on fixed cost items/hectare. This implies that variable cost where the most important cost items in yam production in the study area compares to the fixed cost items. This result considerably agrees with the finding of Zaknayiba and Tanko (2015) who reported that yam farmers spent over 78.9% of the total cost of production on variable inputs. Among, the variable cost items, ₦6, 333,650 representing 41.882% of the total cost were spent on fertilizer/ha. This means that fertilizer was the most important variable cost item in yam production.

The Table revealed that an average of ₦15,122,785.39/ha of the total cost incurred in the production of yam was realized as net profit/ha. The gross farm income (NFI) and gross margin (GM) were ₦49, 830,214.61 /ha and ₦51,761,214.61/ha, respectively. The gross margin percentage was 66.94%. The return per naira invested per hectare was ₦1.25. Similar study conducted by Offor *et al.* (2016) on the determinants of marketing efficiency of yam market in Umuahia North LGA of Abia State, Nigeria, it was found that yam business in the study area was profitable as the rate of return on investment was found to be 1.23. The return per gross margin, all these indices reveal that yam production is profitable in the study area and this is consistent with studies conducted by Musa *et al.* (2011) which revealed that yam production was profitable in their study area. This implies that the government should provide an enabling environment for yam farmers to produce for consumption and export, and thus guarantee food security and foreign exchange. Individual investors and agricultural corporate bodies can invest in yam production and explore comparative advantage enjoyed by the country as world leading producer and the demand of the existing market in the country.

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Table 2: Costs and Returns Analysis of Yam Production

Elements of costs and returns	Amount	**₦% of total**
Yam yields obtained per hectare in Kg	619,750.0005	
Price of yam sold	64,953,000	429.504
Total revenue	64,953,000	
Variable cost		
Seed cost per 100 tubers kg	3,618,000	23.924
Labour	600,135.385	3.968
Fertilizer cost for yam production in kg	6,333,650	41.882
Production Costs (Transportation)	2,640,000	17.457
Total Variable Costs (TVC)	13,191,785.39	87.231
Fixed Cost (FC)		
Land rented in ₦	1,931,000	12.769
Total Fixed Cost (TFC)	1,931,000	
TC= TVC+TFC	15,122,785.39	
GM = TR-TVC	51,761,214.61	
NFI= GM-FC	49,830,214.61	
		1.25

Cost and Return Analysis of Yam Marketing

Budgetary Analysis was used to determine the cost and returns of yam marketing in the study area. The analysis indicating Total Revenue (TR) for wholesalers and retailers, Total Variable Cost for wholesalers and retailers (TVC), Total Fixed Cost (TFC) for Wholesalers and Retailers, Total Marketing Cost (TMC) for Wholesalers and Retailers, Gross Margin (GM), Net Income (NI), Benefit-Cost Ratio (BCR) and Profitability Index, Rate of Returns on Investment, Operating Expense Ratio and Rate of Return on Variable Cost for wholesalers and retailers are presented in Table 3. The yam marketers incurred several costs in the course of marketing. These costs were variable costs. The variable costs were expenses on cost of yams, transportation, loading/off loading, grading/standardization, rates and union, handling, and shed rent, while the fixed costs include storage, staff salaries, maintenance and utility charges for wholesalers and Retailers. Wholesalers' yam marketers in the study area spent ₦12, 098,750.00 while retailers spent ₦3, 599,100.00 on variable cost items, representing 91.248% for wholesalers and 81.105% for retailers of the total cost of marketing. Out of this percentage, cost of yams accounted for 74.016%, transportation 7.235%, loading/offloading 2.086%, grading/standardization, 1.385%, rates and union 1.672%, handling 1.201% and Shed Rent was 3.652%. While retailers cost of yams accounted for 59.810%, transportation 10.415%, loading/offloading 3.092%, grading/standardization 2.410%, rates and union 2.548%, handling 2.372% and Shed Rent was 5.458%.

Further result of the analysis in Table 3 generated positive gross margin and net income values of ₦20,402,550 and ₦19,242,050.00 for wholesalers and ₦1,376,650.00 and 795,870.00 to prove yam marketing enterprise profitable in the study area (Table 3). Benefit Cost Ratio (BCR) was greater than one. This ratio is one of the concepts of discount method of project evaluation. As a rule of thumb, any business with benefit cost ratio greater than one, equal to one or less than one indicates profit, break-even or loss respectively Olagunju et al. Since the ratio for wholesale (BCR = 2.451) and for retailer (BCR = 1.190). It implies that yam marketing in the study area is profitable. The Profitability Index (PI), Return on Investment (RI), Operating Ratio (OR), Rate of Return on Variable Cost (RRVC) and return on

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wholesaler's variable cost were computed as 0.59, 1.45, 0.37 and 2.69 while 0.16, 0.19, 0.72, and 1.38 for retailers respectively. The PI, RI, RRVC and OR were all favourable. Return on investment for wholesalers was 1.45, while 0.19 is for the retailers, implying that the marketers' returned ₦1.45 and ₦0.19 for wholesalers and retailers for every ₦1.00 invested in the business. This implies that yam marketing in Taraba State is a profitable business.

Table 3: Cost and Return Structure Analysis of Yam Marketing

Variables	**Wholesalers**		**Retailers**	
	Amount (₦)	**% of total cost**	**Amount (₦)**	**% of total cost**
Total revenue (TR)	32,501,300.00		4,975,750.00	
Variables costs				
Acquisition of yam	9,814,000.00	74.016	2,500,000.00	59.810
Transportation	959,300.00	7.235	435,350.00	10.415
Loading/off Loading	276,650.00	2.086	129,230.00	3.092
Grading/Standardization	183,650.00	1.385	100,720.00	2.410
Rates and Union	221,700.00	1.672	106,520.00	2.548
Handling	159,200.00	1.201	99,160.00	2.372
Shed Rent	484,250.00	3.652	228,120.00	5.458
Total Variable Cost (TVC)	12,098,750.00		3,599,100.00	
Total Marketing Cost (TC = TVC + TFC	13,259,250.00		4,179,880.00	
Fixed Cost Wholesalers:				
Storage	673,000.00	5.076	292,370.00	6.995
Staff Salaries	286,100.00	2.158	196,400.00	4.699
Maintenance	99,500.00	0.750	49,450.00	1.183
Utility Charges	101,900.00	0.769	580,780.00	1.018
Total Fixed Cost (TFC)	1,160,500.00	100	1,376,650.00	100
Gross Margin (GM = TR – TVC)	20,402,550		795,870.00	
Net Income (NI = TR – TMC)	19,242,050.00			
Benefit-Cost Ratio (BCR= TR/TMC)	2.451		1.190	
Profitability Index or Return on sale = NI/TR	0.592		0.160	
Return on Investment (ROI = NI /TMC	1.451		0.190	
OR = Operating Expense Ratio = TVC/TR	0.372		0.723	
RRVC = Rate of Return on Variable Cost = (TR/TVC)	2.686		1.382	

Result of Multiple Regression Analysis

The regression analysis was used to determine the physical relationship between the yam inputs with yield. Yam output was regressed with the independent variables (farm size, hired labour, family labour, seeds, fertilizer, age, farming experience and household size). Based on the summary of the results (Table 4), Double-logarithm function gave the best fit and was chosen as the lead equation. The selection of lead equation was based on the comparison of coefficients of multiple determinations (R^2), statistical significance of the F-ratios, the magnitude of standard error of the estimated parameters, statistical significance of the estimated regression coefficients and the *a priori* expectation. The coefficient value of determination R^2 which indicated that about 95% of the variation in the yield is explained by the variables included in the model. However, it is only farm size (X_1), seed (X_4), Age (X_6) and farming experience (X_7) that were significant. The coefficient of farm size (1.656) was positive and statistically significant at 1% level implying that an increase in farm size will bring about

increase in output. The coefficient of fertilizer (0.043) was positive and statistically significant at 5% level implying that an increase in quantity of used fertilizer will bring about increase in output. Also, the coefficient of household size (-0.669) was negative and statistically significant at 5 % level implying that an increase household size of farmers will bring about decrease in output. This might be as a result of inefficiency of family labour and increase level of consumption.

Table 4: Regression Analysis

Variables	Coefficient	Std. error	T-statistics	Probability
Constant	-4.387	1.578	-2.780	0.006
Farm Size (X_1)	1.656	.144	11.481	0.000***
Family Labour (X_3)	-.014	.021	-.674	0.501
Hired Labour (X_2)	-.073	.033	-2.183	0.030
Seed (X_4)	1.340	.020	68.351	0.000***
Fertilizer (X_5)	.043	.014	3.027	0.003**
Age (X_6)	1.919	.527	3.642	0.000***
Farming Experience (X_7)	-1.030	.206	-5.008	0.000***
Household Size	-.669	.236	-2.833	0.005**
R^2	.959			
Adjusted R^{-2}	.958			
Std. Error of the Estimate	1.3095438			

Note: ***, ** and * shows the significant level at 1%, 5% and 10%, respectively

Major Constraints of Yam Production and Marketing in the Study Area

The distribution of the respondents based on constraints faced by yam farmers in the study area is presented in Table 5. The result reveals that the most severe problems affecting yam production were insufficient capital (85.5%), poor road network (60.3%), high cost of transportation (52.1%), where these ranked 1st, 2nd, and 3rd, respectively according to severity. Other constraints include problem of bargaining (44.6%), price fluctuation (38.0%) and insecurity (34.7%), were ranked 4th, 5th, and 6th, respectively. The finding revealed that all the respondents were faced with one problem or the other but insufficient capital is a major problem affecting agricultural activities from production, processing, storage and market. All these reduce output and increase cost of production (Odinwa *et al.,* 2011; Simpa, 2011).

On the other, hand as presented in Table 5. The result reveals that the most severe problems affecting yam marketing were high cost of transportation (78%), Problems of pricing (77%), price fluctuation (69%), where these ranked 1st, 2nd, and 3rd, respectively according to severity. Other constraints include poor road network (57%) and poor market information (46%), were ranked 4th and 5th, respectively. The finding revealed that all the respondents were faced with one problem or the other but high cost of transportation is a major problem affecting yam marketing in the study area. This was because yam is heavy and fragile, so transporting it can be difficult on a bad road and also owing to the drastic increase in the price of fuel. Similar findings were also reported by Folayan (2013) in Ekiti State. High cost of transportation is major problem affecting yam marketing and other agricultural activities from production, processing, storage and marketing. All these reduce profitability in the buying and selling of yam.

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Table 5: Major Constraints of Yam Production and Marketing

Constraints	*Frequency	Percentages	Ranking
Production (n = 242)			
High cost of transportation	126	52.1	3
Poor road network	146	60.3	2
Price fluctuation	92	38.0	5
Insecurity	84	34.7	6
Bargaining power	108	44.6	4
Insufficient capital	207	85.5	1
Marketing (n = 91)			
Poor market information	42	46	5
High cost of transportation	71	78	1
Poor road network	52	57	4
Price fluctuation	63	69	3
Problems of pricing	70	77	2

*Multiple responses exist

CONCLUSION AND RECOMMENDATIONS

The study assessed the economics of yam production and marketing in Taraba State. From the study, it was discovered that yam production and marketing has improved income earnings for participants, thereby improving their livelihood.

Furthermore, studies showed that more young people are picking interest in both production and marketing. Constraints faced by both participants are risk of attack both on the farm and market place (security) and lack of sufficient capital to expand the scope of farming and marketing. The study makes the following recommendation:

1. Producers and marketers can form a formidable cooperative society to gain access for government intervention.
2. Participants can also use local securities such as vigilante and active youth patrol while seeking for government official security agents.
3. Government can call in more youth, by providing support for participant in kind and cash.
4. Community service can also be encouraged by boosting the morale of youth to repair damage roads and routes.

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