



MARKETING OF MELON AND PRICE ANALYSIS OF TRANSACTION COSTS IN BIDA LOCAL GOVERNMENT AREA OF NIGER STATE, NIGERIA

¹Ndanitsa, M. A., ¹Mohammed, U. S., ²Mohammed, D. and ³Ndako, N.

¹Department of Agricultural Economics and Farm Management, School of Agriculture and Agricultural Technology, Federal University of Technology, Minna, Niger State, Nigeria

²Southern Guinea Savannah Research Station, Mokwa,

Forestry Research Institute of Nigeria, Federal Ministry of Environment

³Department of Geography, Faculty of Arts and Social Sciences, Niger State College of Education, Minna, Niger State, Nigeria

Corresponding Author's E-mail: attahirundanitsa@yahoo.com **Tel.:** 08036475750

ABSTRACT

The study assessed the transaction cost of Melon '*egusi*' in Bida Local Government Area (LGA) of Niger State, Nigeria. A Multi-stage sampling procedure was used to draw samples from the study area. Data collected with the aid of questionnaire were analyzed using descriptive and inferential statistics, as well as gross margin analysis. The results revealed that majority (57%) of the sample marketers were males. Also, the results revealed that larger proportion of these actors were between the ages of 36 and 40 years with a mean age of 38 years. Majority (77%) of the marketers were married, with larger proportion (30.0%) having marketing experience of between 6-10 years. The mean marketing experience was 13 years. Larger proportion (33.0%) of the respondents had between 6-10 persons as family size, with a mean household size of approximately 11 persons. Majority (81.0%) had one form of modern education stitches or the other. The effect of marketing cost on final price of melon in the study area showed an R^2 value of 0.685. However, the variables such as cost of loading, cost of offloading, distance from the farm to market, quantity of melon transported to the market and cost of transportation were positively related to the final price of marketing melon. The significant variables that influence the final price were; cost of loading, cost of off-loading, and distance from farm to the market. Cost of loading and distance to the market were significant at $P \leq 0.01$. Also, the coefficient for cost of off-loading was significant at 10%. The generated revenue from the sales of melon was ₦35,093.33, whereas, the total costs incurred from the melon marketing was ₦32,645.0, with a net income of ₦2,448.30. The constraints to melon marketing in the study area include; poor feeder road (68.3%), price instability (66.7%), and low demand/supply (31.7%). It was recommended that government and other stakeholders should help provide good marketing infrastructure for efficient marketing such as good feeder roads that link the rural areas to major cities/major consuming centres. It was also recommended that there should be regular capacity building to empower the marketers to acquire skills for effective negotiations so as to reduce transaction costs (loading, off-loading, security) and farm gate price will reduce the final price.

Keywords: Costs, Marketing, Melon, Price, Transaction.

INTRODUCTION

Melon '*egusi*' (*Citrullus lanatus* thumb Mansf) is a native of Africa, which has probably been introduced to Asian, Iran and Ukraine (Schippers, 2016). It is one of the popular seed vegetable crops commonly cultivated in West Africa, including Nigeria, especially in South Western and Eastern parts of the country (Van dar Vossen *et al.*, 2004). Due to its creeping nature and ability to use its leaves to provide cover on the soil, farmers use it on weed



suppressant in their mixed crop farms. According to Achigan-Dako *et al.* (2008), ‘*egusi*’ melon play vital role in farming system and the well-being of West African rural dwellers on weed suppressant and soil fertilization. It is usually grown in mixture with other crops such as cassava, maize, yam, and pepper for maximum utilization of the land and also to increase the return generated from a production system, and this may also account for the increase in land area put to its production (National Agricultural Extension Research and Liaison Service, NAERLS; 2005). Yusuf (2005), had earlier submitted that, production of the crop is more popular in the Northern part of Nigeria where there is abundance of cultivable land and make the practice of sole and mixed cropping possible. Cultivation of ‘*egusi*’ as sole crop is however, becoming widespread. This is aimed at satisfying the demand for human consumption, and raw material for industrial processing of edible oil and livestock feed stuff (Olaniyi, 2008).

Egusi Melon seeds are popular condiments in Nigerian local soups. Melon seed is a good source of oil, protein, minerals, vitamins, and energy in form of carbohydrate. The seed contained 4.6 g carbohydrate, 0.6 g protein, 0.6 g crude fibre, 33 mg vitamin C, 17 g Ca, 16 mg P and 230 mg K per 100g edible seed (Gorski, 2015).

There is reported shortfall in melon supply with respect to local demand, thereby putting pressure on the price of melon during off-peak period. This make melon unaffordable to many household in Nigeria and further decreases the per capita consumption rate.

Prices are important feature of a market. Webster’s define price as; “the price of a good or service is what it costs the buyer to acquire it from the seller; the same price is what the seller rewards for giving up its property rights on the goods or services”. In the modern world, prices represent acceptable exchange ratio for goods.

Prices are important to market participants, a decisive factor in agent decisions, since they simplify evaluation of complex transactions, and hence contribute to greater efficiency in their maximization of utility (Ndanitsa, 2014). They also represent a very compact way of summarizing information about demand/ supply conditions for efficient communication.

Assured markets have implication on producer decision with regards to choose of inputs as well as on the choice of marketing channel for the output (Ndanitsa, 1994). A market exchange involves transaction costs which can be fixed or variable. These transaction costs are related to limited market produce difficulty in enforcing contracts, reliability on middlemen, location in remote area and inability to meet stringent food safety norms (Granovetter, 2015 and Ndanitsa, 2021). Considering that agriculture remains a major sector in most economies in Africa, especially the rural economics, whose main occupation is farming (Baba, 2004), commercialization of the sector necessitates improving the ability of smallholder famers to participate in markets. More so, Barrett (2008) asserted that smallholder farmers who engage in subsistence agriculture have low marketable surplus, causing them to be in low equilibrium poverty trap. The smallholder farmers, who constitute the bulk of the rural poor have also not fully benefited from agriculture’s multiple functions because they predominately practice consumption-oriented subsistence agriculture which excludes them from formal market system and the related income-mediated benefits (World Bank, 2008). Thus, it is not possible for farmers to integrate with the market and enjoy the full benefits of commercialization unless the already existing hurdles are better environment created (Okoye *et al.*, 2016).

The importance of market participation is based on the premise that incomes and hence, the livelihoods of smallholder farmers are likely to improve if they gain greater access to markets for the commodities they produce. Markets and improved market access for poor rural household are a pre-requisite for enhancing agriculture- based economic growth and increasing rural incomes. Intensification of agricultural production systems and increased commercialization must be built upon the establishment of efficient and well-functioning



markets and trade systems that keep transaction costs low, minimize risk and extend information to all actors, particularly those living in areas of marginal productivity and weak infrastructure (World Bank, 2018).

Many countries and international development agencies give due concern to intensification and commercialization of smallholder farming as a means of achieving poverty reduction and then have reflected it in their official policies (Poulton and Leavy, 2007). In line with these policies thrust, the Federal Government of Nigeria, for example in recent times has consistently promoted the increasing commercialization of agricultural production through its different schemes, policies and programmer. For example, the focus of the Agricultural Transformation Agenda (ATA), is to create a favorable policy and regulatory framework that will lead to enhanced quality compliance with local, regional and international standards; facilitate measures that will promote private sector investment into the sector and create room for strengthened public private partnership (Ajani and Igbokwe, 2014).

Consistent with this, and in order to enhance productivity and commercialization in agriculture, and reduces transaction costs in Agriculture, the Niger State government is deliberately taking advantage of the diverse agricultural resource endowments to develop an agricultural sector that will guarantee food security, reduce rural poverty and accelerate economic development of the state (Niger State Vision 3:2020, 2008).

The Niger State Vision 3:2020 plan to revitalize and regenerate the agriculture sector in partnership with the private sector to emerge on the major pillar of economic growth. Furthermore, the new Agriculture Regeneration Program will be undertaken, aimed at greater orientation towards increasing agricultural production and commercialization of smallholder agriculture. The Niger State investment consortium project was established to promote smallholder commercialization of agriculture production and changing the mindset of the farmers towards viewing agriculture as business (Ministry of Agriculture and Rural Development, 2014).

As parts of the efforts to enhance productivity and commercialization in agriculture, as well as bridge the widening nutritional gap and persistent food insecurity in Nigeria and Bida Local Government Area (LGA) in particular, the government develop policies to commercialize agriculture with the overarching objectives of improving the efficiency of agricultural production systems, as well as improving access to markets for targeted value chains among small and medium scale commercial farms (Nwachukwu and Ezech, 2007). Consistent with these policy thrusts and in the urge for transforming the subsistence-oriented production the Commercial.

Agriculture Development Program (CADP) encourage smallholder farmers to become market oriented (National Bureau of Statistics [NBS], 2010). Similarly, the Growth Enhancement Programme (GES) and the Anchor Borrowers Programme (ABP) seek to increase the competitiveness and enhance integration of farmers into domestic and international markets and create economic linkage between smallholder farmers and reputable large scale processors (Federal Ministry of Agriculture and Rural Development, FMAR, 2011; Central Bank of Nigeria Anchor Borrowers Programme [ABP], 2016). The aim is to enhance Nigeria's comparative advantage and translate it into competitive advantage in producing the needed volumes and quality of commodities on a timely basis, reduce transaction cost in marketing, reduce the level of poverty among smallholder farmers and assist rural smallholder farmers to graduate from subsistence to commercial production levels.

In Niger State of Nigeria, legume farmers (especially melon '*egusi*' growers) depend on Financial Intermediaries and Microfinance Institutions (Ndanitsa, 2013). Despite these, a



large population of this grain is consumed and only a mirror portion is sold, implying the persistence of barriers to remunerative options.

As far as Nigeria is concerned, few studies have also been conducted with respect to transaction costs and market participation. These include; Okoye *et al*; (2010) on cassava farmers in South Eastern Nigeria, Alhassan (2018) on rice farmers in Niger State and Ohajanya and Ugochukwu (2011), on Sweet potato farmers in South Eastern Nigeria. In addition, in Niger State, since the establishment of Niger State Agricultural Development Project (now known as Niger State Agricultural and Mechanization Project, NAMDA), no empirical research work has been conducted to explicitly assess its effect on the commercialization levels of smallholder melon '*egusi*' farmers in the study area. In addition, the justification for smallholder commercialization assessment is an attempt to fill the research gap and hinges on the importance of providing feedback to policy markets, State Ministry of Agriculture and Rural Development, non-state actors, and the NAMDA project, who in synergy, promote commercialization as a development strategy, whereby market is expected to provide increased incomes to rural household who are able to maximize the returns to land and labor through market opportunities in ways that are more efficient than subsistence production. Researchers will also find the outcome of the study relevant in a bid to expand frontiers of knowledge that can enrich the stock of existing but limited knowledge and literature whose focal point is commercialization of smallholder, especially of melon '*egusi*' marketing actors.

Consequently, the need to accelerate the transformation of sub-sector to market oriented agriculture requires not only access to input and output markets but also understanding of transaction cost incurred by the small-scale farmers when marketing the produce. This study attempted to fill this gap. It is based on this backdrop that this study intends to provide answers to the following research questions;

- i. What are the socio-economic/demographic characteristics of melon '*egusi*' markets?
- ii. What are the factors that affect the final (retail) prices of melon '*egusi*'?
- iii. What is the cost and returns among the various marketers involved in melon '*egusi*' marketing?
- iv. What are the constraints to effective and efficient transaction of melon among the marketers?

MATERIALS AND METHODS

The Study Area

The study was conducted in Bida Local Government Area (LGA) of Niger State, Nigeria. Bida is the headquarters of Bida LGA, and also doubles as the headquarters of zone 1 Agricultural division, in line with the Agricultural Development Project Zoning arrangement of the state. The State lies between latitude $9^{\circ}36'$ North and longitude $6^{\circ}22'$ East of the equator. The State lies in the Guinea Savannah agro-ecological zone of the country with favourable climatic condition for crops and livestock production. The state is bordered to the North by Sokoto State, West by Kebbi State, South by Kogi State, Kaduna State and the Federal Capital Territory share common boundaries with the state to the North and East respectively. The state also has an International boundary with the Republic of Benin along Agwara and Borgu Local Government Areas to the North-West. The State has a population of 3,950,249 (NPC, 2006) and a projected value of 4,702,376 at the end of 2013 (CBN, 2.38% annual projection). Similarly, the state is ranked 8th out of 36 in terms of population density. About 55% of Niger State populations are farmers while the remaining 45% engage in other vocations such as business, artisans, white collar jobs, etc. Niger State experiences distinct dry and wet seasons with annual rainfall varying from 1,100mm in the Northern parts to 1,600 mm in the southern



parts of the state, respectively (NSADP, 1997). The minimum temperature range is of between 21°C-37°C, the rainy season lasts for about 80 days in the Northern parts and about 120 days in the southern parts of the State. The average sunshine hours are about 6 – 9. Generally, the climate, soil and hydrology of the state permits the cultivation of Nigerians staple food crops such as yam, maize, millet, sorghum, melon ‘*egusi*’ cassava, rice, vegetables, etc. and still allows sufficient opportunity for grazing, fresh water fishing and forestry development. The Gross Domestic Product (GDP) of Niger State, as of 2011 was \$11.63 billion (NSBS, 2013). The inhabitants of the state are mostly peasant farmers.

Sampling Techniques and Sampling Size

A two-stage sampling technique was adopted in this study. The first stage involves the purposive selection of four districts (Usman Zaki, Masaba, Umaru Majigi and Maliki) out of the seven (7) districts in Bida LGA. The second stage involved the random selection of three (3) villages from each of the districts selected. The final stage involved the random selection of five (5) melon ‘*egusi*’ marketers from each of the selected villages, making a total of 60 respondents that were used for the study. Data and information for the study were finally obtained using primary sources through well-structured questionnaire, which were administered to the selected fish marketers.

Method of Data Analysis

Descriptive statistics and inferential statistics were used for the analysis of data. Descriptive statistical tools were used to analyze the socio-economic/demographic characteristics of the marketers in the area (objective i), in the study area; and the constraints to effective transaction of melon among marketers in the study area (objective iv). The tools of the descriptive statistics include frequency distribution tables, means/averages, percentages, etc. Multiple linear regression models were used to analyze (objective ii), i.e., the factors affecting final prices of melon in the study area. The budgetary analysis will be applied in the determination of the cost and returns associated with melon ‘*egusi*’ marketing in the study area (objective iii). The Farm Budgeting tool is widely used in Farm Management and Production economic studies. The farm budget tool is an operation leading to the determination of costs and revenue for a given Production period (Olayide and Heady, 1982).

1. Multiple regressions were used to identify the factors that affect farm households in deciding whether to sell their product (Melon ‘*egusi*’) at the farm gate or at the market place. The model is implicitly specified as:

$$Y = b_0 + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5 + b_6X_6 + U \quad \dots(1)$$

where;

Y = Retail price of Melon ‘*egusi*’ (₦)

X₁ = Cost of transportation (₦)

X₂ = Cost of loading (₦)

X₃ = Cost of Off-loading (₦)

X₄ = Cost of Security (₦)

X₅ = Distance covered from farm to market (km)

X₆ = Quantity of melon transportation (kg)

B₀ – B₆ = Regression parameters to be estimated

U = Error term

2. Gross Margin is used when fixed cost (FC) is negligible, and for this study, it is negligible. It is expressed as:

$$GM = TR - TVC \quad \dots(2)$$

where;



GM = Gross Margin
TR = Total Revenue
TVC = Total variable cost

RESULTS AND DISCUSSION

Socio-Economic Characteristics of the Respondents

The distribution of respondents according to their socio-economic characteristics, covering gender, age, marital status, household size marketing experience, educational level is presented in Table 1. The results of the analysis revealed that majority (57%) of the sampled marketers were males while 43% were females. This implies that more male marketers were involved in melon marketing in the study area. The reasons might be that melon marketing requires physical strength that female marketers may not possess. In other words, it may be as a result of the physical exertion of energy required in the business. Besides, the women have no access to productive resources like the men in the study area. Also, Olaleye (2009) revealed that the dominance of men in agricultural business or production is because male folks are the bread winners in most households, in line with the Nigerian tradition. However, the result validates the findings of Ng'ero *et al.* (2011) who revealed that women were mostly engaged in agricultural production than men because of their involvement in processing and marketing activities, but, the result of the analysis are in consonance with that of Olubumi *et al.* (2018), who in their study of economic analysis of melon marketing in Lagos state, Nigeria, observed that more males were involved in melon marketing than female folks.

Table 1 revealed that the mean age of the marketers was approximately 38 years. This implies that most of the melon marketers in the study area were in their economic active and productive age and therefore, can participate activity in various agricultural production activities, including marketing. However, the age of marketers revealed that 23.0% of the marketers were between the age of 36 and 40 years, 22.0% were within the age range of 41 – 45 years. Similarly, the implication of the mean age (38 years) for the melon marketers in the area is that they will also be able to covey the bulky agricultural produce within the market. This supports the findings of Isibor and Ugwumba (2014) who also reported that melon marketers in Nnewi metropolis of Anambra State, Nigeria, were young and within their active age with a mean of 39 years.

Marital Status of respondents may become an important factor in agricultural production especially in traditional agriculture when farm labour is in short supply. Marital status refers to the state of being married or unmarried. Results in Table 1 further showed that majority (77%) of the marketers were married, while only 10% were single. This is an indication that married people were more involved in agricultural marketing in the study area, and this may also be related to the fact that marriage comes with more responsibilities, and hence, the need for household head to engage in multiple livelihoods such as melon marketing that could provide sufficient income for the family up keep. More so, the high percentage of married respondents could be attributed to the active age bracket range of the majority of the marketers. The implication of this finding similarly, is that they make use of family members (as opposed to hired labour) to provide cheap source of labour. The act increased their productivity to favour high marketable surplus (agricultural commercialization) and to reduce their labour costs. This finding is in agreement with Oparinde and Daramola (2014) who reported that being married affords the farmers (including marketers) the opportunity of getting cheap source of family labour to be used by them, thereby leading to enhancement of market participation and increased profitability. Ndanitsa (2005) had earlier reported that, among the variable costs, the cost of labour input alone constituted between 25% to 35% for the



enterprises. The findings in Table 1 is also in line with findings of Muhammad (2014), who reported that melon marketers in Ifelodun LGA, of Kwara State, Nigeria were married.

Household size is the total number of people in the same dwelling unit or feeding from the same pot (NPC, 2007). The importance of large family size in a household especially in traditional agriculture was expressed by in his study of resource productivity in food crop production in Kwara State, Nigeria. According to the Study, family labour accounted for a significant proportion of total labour force used in traditional agriculture, thereby enabling the cultivation of large hectares of farmlands and reducing the cost of hiring labour for farm operations. A relatively large household size was found in the area with an average size of approximately 11 persons. The results on household size indicated that larger proportion (33.0%) of the respondents had between 6 and 10 persons, 27.0% had between 11 – 15 persons, and 22.0% had between 1 – 5 persons. Preponderance of large family size is a characteristic of the poor rural area (Eboh, 1995). The result of the large household size in this study is in agreement with Isibor and Ugwumba (2014) who stated that in the presence of constraints to labour availability, large households tend to use family members as sources of labour in the marketing of agricultural commodities. For example, traditional agriculture is highly labour intensive, much of the labour is needed in post-harvest activities, such as processing, distribution and marketing. Meanwhile, Baba and Etuk (1991) and Baba and Wando (1998), explained that the implication of large household is that household expenditure tends to draw more on family income, so that only a meager sum is saved and invested eventually on agribusiness, and for the borrowed capital, this is likely to affect the repayment capacity of the respondent. Large households with more dependents are likely to have a lower level of commercialization due to increased household consumption (Alhassan, 2017). This is evident in the observation of Agwu *et al.* (2013) that the decision to sell is preceded by a decision to consume.

Education raise the skills and technical competence of farmers/marketers, narrow down their information gap and also increases their management abilities, thereby leading to productive performance (Asogwa, 1987). Oladeebo and Oladeebo (2008) opined that literate agricultural entrepreneurs will repay more of the loans obtained than the illiterate ones, having understood the importance of prompt repayment. Similarly, Olagunju and Adeyemo (2008), shared this view, stating that borrowers with higher level of education would have a better repayment performance on the basis of the fact that such farmers/marketers would readily respond to improve technologies and innovations that would enhance better returns from farm investment. Also, Simoniyan and Balogun (2010), submitted that education increases farmers' ability to make correct and meaningful choice of farm and marketing operations, while Ogbe (2009) established that the level of education raises human capital and increase their level of managerial ability. The educational status of melon marketers in the study area showed that larger proportion (43.0%) had attended primary education, 20.0% had secondary education, and 18.0% had tertiary education.



Table 1: Socio-economic/Demographic Characteristics of the Respondents

Variable	Frequency (n = 60)	Percentage	Mean (x)
Sex			
Male	34	57	
Female	26	43	
Total	60	100	
Age (Years):			
25 – 30	10	17	37.9
31 – 35	12	20	
36 – 40	14	23	
46 – 50	13	22	
Total	60	100	
Marital status:			
Married	46	77	
Single	6	10	
Divorced	3	5	
Widow	5	8	
Total	60	100	
Educational level:			
Primary	26	43	
Secondary	12	20	
Tertiary	11	18	
Adult Education	1	2	
No formal education	10	17	
Total	60	100	
Marketing experience (Years):			
1 – 5	8	13	12.6
6 – 10	18	30	
11 – 15	17	28	
16 – 20	11	18	
<20	6	10	
Total	60	100	
Household size:			
1 – 5	13	22	10.5
6 – 10	20	33	
11 – 15	16	27	
16 – 20	11	18	
Total	60	100	

Source: Field Survey, 2019

It was generally observed (Table 1) that majority (81.0%) had attended one form of education or the other. This result implies that the marketers in the study area were educated and can read or write, i.e., literacy level in the area was high. It is expected that majority of these respondents will be articulate enough in their decision-making processes, managerial skills and high level of awareness on market information, for increased, sustainable and profitable marketing. The farmers' level of education is very important in agricultural productivity and market participation, as it enhances farmers' access to information and agricultural technology adoption, such as access to market information and proper use of inputs leading to high marketable surplus, and hence increased household commercialization



consistent with the findings of Boniface *et al.* (2015); Oparinde and Daramola (2014) and Alhassan (2017).

Experience in yam marketing by the respondents shows that business activities requires both time on the process and training in the activities. A sizeable number of marketers learn by doing. The marketing experience as shown in Table 1 revealed that larger proportion (30.0%) had marketing experience between 6 and 10 years, 28.0% had experience of 11 – 15 years, and 18.0% had between years of 16 and 20 experience. This implies that melon marketers in the study area are fairly experienced in their business, can therefore, be able to identify possible problems and are likely to proffer solutions where needed. This is in line with Muhammad (2014) who observed that melon marketers in selected LGAs of Kano State, Nigeria were experienced, with a mean marketing experience of 16.3 years. Osuntogun (2000), noted that several factors are known to affect the credit needs of farmers/agripreneurs; prominent among these is their past experience.

Factors Affecting Melon ‘egusi’ Prices

Prices are an important feature of a market. Webster’s define price as: “the price of a good or service is what it costs the buyer to acquire it from the seller; the same price is what the seller rewards for giving up its property rights on the good or service”. In the modern world, prices represent acceptable exchange values or ratios for goods. The effects of marketing cost on final price of melon in the study area are presented in Table 2. The R^2 value which measures the proportion of the variation of the dependent variable (Y) that is explained by the independent variables included in the model was 0.685. This indicates that the model explained 68.5% of the variation in dependent variables. However, the variables included in the model are cost of loading, cost of security, distance from farm to market, quantity of melon transported and cost of transportation. Furthermore, the significant variables that influence retail prices are; cost of loading, cost of offloading, and distance from farm to market.

Table 2: Factors affecting melon price in the study area

Variable	Coefficients	Standard Error	t-value	Sig.
Constants	28176.585	899.080	31.339	.000
Cost of loading (₦)	5.275	1.195	4.415	.000*
Cost of security (₦)	-1.086	4.589	-0.237	0.814 ^{NS}
Cost of offloading (₦)	9.769	5.217	1.872	0.067**
Distant to Market (₦)	98.799	16.661	5.930	0.000*
Quality transported (kg)	4.625	18.280	0.253	0.801 ^{NS}
Cost of transportation (₦)	2.026	2.061	0.983	0.330 ^{NS}
$R^2 = 0.68$				
Adjusted $R^2 = 0.65$				

*significant at 1%; **significant at 5%; NS=Non-significant

Source: Field Survey, 2019

Cost of loading was positive and significant at 1%, which implied that an increase in the cost of loading will result in a corresponding increase in the final prices of melon in the study area. Similarly, the coefficient for cost of offloading was positive and significant at 10%, implying that an increase in offloading cost will result to a corresponding increase in the final prices of commodity (goods and services). More often than not, the coefficient of distance from farm to market was positive and significant at 1%, which also shows an increase in the distance to the market will lead to a corresponding increase in the final price of melon in the study area.



However, the cost of security was observed to be negatively related to the final marketers' prices get in the marketing of melon, implying that increasing this variable would decrease the final prices of marketing melon in the study area. This result corroborates with the findings of Ukwuaba (2017), who observed that the prices of marketed melon in Enugu State were strongly related to the cost of loading and offloading, tax by government agencies, and total cost of transportation.

Cost and Returns associated with Melon Marketing

The results in Table 3 indicated that the total revenue (TR) realized from the sales of a 50kg melon was ₦35,093.00, whereas the total costs incurred in marketing of a ₦50kg melon was computed at ₦32,645.00. This result showed that there is a positive Net Income (NI) of ₦2,448.30. This implies that, though the margin is low, but melon marketing business is a profitable venture in the study area. This finding corroborated with that of Mohammed (2011), who reported that melon marketing was profitable in Ifelodun Local Government Area of Kwara State, Nigeria. In a related study, Abdullahi (2021) reported that Melon production (including marketing) is profitable under both sole and mixed cropping system in Niger State, Nigeria.

Table 3: Costs and Returns Analysis in Melon Marketing

Items	Costs (₦)	%VC
A: Revenue		
Revenue from melon sales (50kg)	35,093.33	
B: Variable costs (50 kg of melon)		
Purchase of melon (50kg)	31,418.33	96.24
Storage cost	207.50	0.64
Tax paid	252.50	0.77
Handling cost	99.20	0.30
Transportation cost	250.80	0.77
Loading cost	226.70	0.70
Security cost	64.20	0.20
Off-loading cost	125.80	0.38
Total variable cost (TVC)	32,645.03	100.00
Net Returns (Revenue – TC)	2,448.30	
RNI = TR/TC	1.075	

Source: Field Survey, 2019

Constraints Faced by Melon Marketers

Table 4 presented the result of the constraints faced by melon Marketers in the study area. It was revealed that major constraints affecting melon marketing were poor feeder roads (68.3%), price instability (66.7%), and low ineffective demand/supply (31.7%). The above results support the findings of Olubunmi (2018), who revealed in his economic analysis of melon marketing that the respondents were faced with constraints such as poor transportation system and variability in prices of the commodity. Similarly, Girei *et al.* (2013) in their study identified Insect-pest infestation, inadequate storage facilities, poor credit facilities, inadequate market infrastructure and lack of uniform measures, as well as long chain of distributors. In addition, Alhassan (2017) in his study on commercialization levels of smallholder farmers in Niger State, Nigeria, identified problems of marketing agricultural products to include; poor access roads to marketing centres, inadequate market infrastructure, distance to market, unfavourable market prices, buyers dictating prices, seasonal fluctuation of prices, inadequate



storage facilities, lack of government policy/inconsistency in government policies, inadequate access to means of transportation and inadequate market information.

Table 4: Marketing Constraints faced by Melon Marketers

Constraints	*Frequency	Percentage
Tax paid	6	10.0
Storage facilities	7	11.7
Bor feeder roads	41	68.3
Price instability	40	66.7
Low Demand/supply	19	31.7
Lack of Government policy/inconsistency in Government policy	6	10.0
Inadequate information	8	13.3
Total	127	

*Multiple responses

Source: Field Survey, 2019.

CONCLUSION AND RECOMMENDATIONS

Melon '*egusi*' Marketing in the study area is mostly dominated by men and is a highly profitable venture by all the actors in the business. With the experience and modernization of these actors, the level of profitability will improve if adequate measures can be taken to redress some of the identified constraints. For example, government, and other relevant stakeholders should assist in the provision of marketing infrastructure for efficient marketing. This will help to link the major producing centres with the consuming centres. Channels of marketing information should be encouraged so as to get adequate price negotiations that will help in reducing transaction costs at all the chains, and this can be facilitated by supporting farmers to invest in mobile phones and radio/TV sets to have access to real-time market information.

REFERENCES

- Abdullahi, Z. (2021). *Profitability and Technical efficiency of Melon 'egusi' production under sole and mixed cropping system in Niger State, Nigeria*. Unpublished M.Tech. Thesis submitted to the Department of Agricultural Economics and Farm Management, Federal University of Technology, Minna, Nigeria.
- Achigan-Dako, G. E., Fagbemisi, R., Ahanchade, A. and Avohou, H. T. (2006). Agronomic evaluation of three *egusi* species (*Cucurbitaceae*) used as food in Benin and development of a predictive model performance. *Biotechnology agronomy and social environment*, 10(2), 121-129.
- Agwu, N. M., Anyanwu, C. I. and Mendie, E. I. (2013). *Socio-Economic determinants of commercialization among smallholder farmers in Abia State, Nigeria*. Invited paper presented at the 4th International Conference of the African Association of Agricultural Economists, September, 22 – 25, 2013, Hammamet, Tunisia.
- Ajani, E. N. and Egbowe, E. M. (2014). A review of Agricultural Transformation Agenda (ATA) in Nigeria: The case Public and Private sector participation. *Research Journal of Agriculture and Environmental Management*, 3(5): 238-245.
- Alhassan, H. A. (2018). *Effect of Niger State Rice Investment Consortium Project on Commercialization levels of smallholder farmers in Niger State*. Unpublished M. Tech. Thesis; Dept of Agric. Economics and Farm Management, FUTM.



- Asogwa, S. S. (1987). "Institutional credit strategies for increased food production in Sierra Leone". *West African Journal of Agricultural Economics*, 20: 21-26.
- Baba, K. M. (2004). Economic and Institutional Consideration for reforming Agricultural Extension services in Nigeria. *Journal of Agricultural Management and Rural Development*, 1:85-102.
- Baba, K. M. and Etuk, E. G. (1991). "Resources use efficiency and constraints in irrigated agriculture: Empirical evidence from Bauchi State, Nigeria". *Journal of Agricultural Technology*, 3(10): 1-6.
- Baba, K. M. and Wamdo, M. A. (1998). "Impact of membership of *Fadama* users Associations on incomes: a case study from two Local Government Areas of Niger State. Nigeria". *Nigerian Journal of Basic and Applied Sciences*, 7:31-41.
- Barrett, C. B. (2008). Smallholder Market participation. Concepts and Evidence from Eastern and Southern Africa. *Journal of Food Policy*, 34: 299-317.
- Boniface, N. S., Fengying, N. and Fang, C. (2015). An analysis of actors affecting smallholder rice farmers' level of sales and market participation in Tanzania; Evidence from National Panel survey Data, 2010 – 2011. *Journal of Economics and Sustainable Development*, 5(23): 185-206.
- Central Bank of Nigeria (2016). *Anchor Borrowers' Programme Guidelines*.
- Eboh, E. C. (1995). *Constraints to increasing agricultural Productivity in Nigeria*. International Food Policy Research Institute (IFPRI), 49pp.
- Federal Ministry of Agriculture and Rural Development (2011). *Agricultural Transformation Agenda: we will grow Nigeria's Agricultural Sector*. Draft for Discussion, FMA and RD, Abuja.
- Girei, A. A., Dire, B. Salihu, M. and Iliya M. M. (2013), Assessment of Problems Affecting the Structure, Conduct and Performance of Cowpea Marketing in Yola North and Yola South Local Government areas in Adamawa State, Nigeria. *British Journal of Marketing Studies*, 1(4): 41-50.
- Gorski, S. F. (2015). Melons. In: Detecting mineral nutrient deficiencies in Tropical and temperate crops. *Journal of Plant Nutrition*, 8: 283-291.
- Granovetter, M. (2015). Economic Action and Social Structure: The problem of embeddedness. *American Journal of Sociology*, 91: 481-510.
- Isibor, A. C. and Ugwumba, C. O. A. (2014). *Analysis of Watermelon (Citrullus lanatus) Marketing in Nnewi Metropolis of Anambra State, Nigeria*.
- Macharia, M. A., Mshenga, P. M., Ngigi, M., Gido, O. E. and Kiprop, K. J. (2014). Effect of transaction cost on smallholder maize market participation: case of Kwanza District Trans Nzoia County, Kenya, *International Journal of Development and Sustainability*, 3(4): 715-725.
- Mohammed, B. T. (2011). Socio-economic analysis of melon production in Ifelodun Local Government Area, Kwara State, Nigeria. *Journal of Development and Agricultural Economics*, 3(8): 362-367.
- Muhammad, B. A. (2014). *Economic Analysis of Watermelon (Citrillus lanatus) Production in Selected local Government Areas of Kano State, Nigeria*. An M. Sc. thesis submitted to the School of Postgraduate Studies, Ahmadu Bello University, Zaria, Nigeria [kubanni.abu.edu.ng/jspui/bitstream/123456789/6660/1/ECONOMIC ANALYSIS OF WATERMELON \(Citrillus lanatus\).pdf](http://kubanni.abu.edu.ng/jspui/bitstream/123456789/6660/1/ECONOMIC_ANALYSIS_OF_WATERMELON_(Citrillus_lanatus).pdf).
- National Agricultural Extension Research and Liason Services [NAERLS] (2005). *Field situation Assessment of 2005 Wet season Agricultural Production in Nigeria*. Ahmadu



- Bello University, Zaria and Federal Ministry of Agriculture and Rural Development, Abuja, Nigeria. 12Pp.
- National Bureau of Statistics (2010): *NBS/CADP Baseline survey Report*. www.nigerianstat.gov.ng.
- National Population Commission [NPC] (2006). *Human Population figures of 2006 census in Nigeria*.
- National Population Commission [NPC] (2007). *Provisional Census Figure of Nigeria: How many we are*. NPC (FGN), Abuja 18Pp.
- Ndanitsa, M. A. (1994). *Problems of Marketing Agricultural Products in Nigeria: a case study of Fish marketing in Niger State, Nigeria*. B. Sc. project (Unpublished). Department of Agricultural Economics and Extension, Usmanu Danfodiyo University, Sokoto, Nigeria.
- Ndanitsa, M. A. (2005). *Economics of Fadama crop production in Niger State, Nigeria*. Unpublished M. Sc. thesis, submitted to the Department of Agricultural Economics and Farm Management, University of Ilorin, Ilorin, Niger State.
- Ndanitsa, M. A. (2014). *Impact of Microfinance Providers on Poverty alleviation of Farm households in North-Central Nigeria*. Unpublished Ph. D. Thesis, Department of Agricultural Economics and Extension, Bayero University, Kano, Nigeria.
- Ng'ero, V., Muiriri, E. J., Nyangweso, P. M; Langat, B. K. and Kipsat, M. J. (2011). Farmers' inaccessibility to Agricultural credit in Nyandarua district, Kenya. *Asian Journal of Agriculture and Rural Development*, 1(2): 64-68.
- Niger State Bureau of Statistics (2013). *Socio-economic survey*.
- Niger State Vision 3:2020 Report (2008). *Niger State Vision 3:2020 Report*.
- Nwachukwu, I. N. and Ezeh, C. I. (2007). Impact of Selected Rural Development Programmes on Poverty Alleviation in Ikwuano LGA of Abia State, Nigeria. *African Journal of Food, Agriculture, Nutrition and Development*, 7(5): 1-17.
- Ogbe, A. (2009). *The Tragedy of Nigeria*. Opening remark by the Honourable Minister of Agriculture and Rural Development in a symposium organized for Food Security in Nigeria. Federal Ministry of Agriculture and Rural Development, Abuja.
- Ohajianya, D. O. and Ugochukwu, A. I. (2011). *An ordered probit model analysis of transaction costs and market participation by sweet potato farmers in South Eastern Nigeria*. 85th Annual Conference of the Agricultural Economic Society Warwick University.
- Okoye, B. C., Abass, A., Bachwenkizi, A., Asumugha, G., Alenkhe, B., Ranaivoson, R., Randrainarivelo, R., Rabementantsoa, N. and Ralimanana, I. (2016). Effect of transaction costs on market participation among smallholder cassava farmers in central Madagascar, *Cogent Economics and Finance*, 4(11): 1-20.
- Oladeebo, J. O. and Oladeebo, O. E. (2008). Determinants of Loan Repayment among smallholder farmers in Ogbomoso Agricultural Zone of Oyo State. *Journal of Social Sciences*, 17(1): 59-62.
- Olagunju, F. I. and Adeyemo, R. (2008). Evaluation of the operational performance of Nigerian Agricultural cooperative and Rural Development Bank (NACRDB) in South-Western Nigeria. *International Journal of Agricultural Economics and Rural Development*, 1(1): 53-67.
- Olaleye, R. S. (2009). *Effectiveness of Development Intervention for Economic Empowerment*. An Unpublished Ph. D. Thesis submitted to the Department of Agricultural Extension and Rural Development, University of Ibadan, Nigeria.



- Olaniyi, J. O. (2008). Growth and seed yield of 'Egusi' melon to Nitrogen and phosphorus Fertilizer application. *American-Euroasian Journal of Sustainable Agriculture*, 2(3): 255-260.
- Olayide, S. O. and Heady, E. O. (1982). *Introduction to Agricultural Production Economics*. University of Ibadan Press, Nigeria. 319Pp.
- Olubumi, L. B., Olatomide, S. A., Oladele, T. A. and Emeka, E. O. (2018). An economic analysis of melon marketing, *International Journal of Vegetable Science*, 5(4): 1931-5260.
- Oparinde, L. O. and Daramola, A. G. (2014). Determinants of Market participation by Maize Farmers in Ondo State, Nigeria. *Journal of Economics and Sustainable Development*, 5(1): 69-76.
- Osuntogun, A. (2000). *Some aspect of farm level credit use in Nigeria: Savings and Development*. Quarterly review, No. 1 Pp. 360.
- Poulton, C. and Leavy, J. (2007). Commercialization in Agriculture, *Ethiopian Journal of Economics*, 16(1): 3-42.
- Schippers, R. R. (2000). *African Indigenous Vegetables: An Overview of Cultivated Species*. Natural Resources Institute, University of Greenwich: 24 – 27.
- Simoniyan, J. B. and Balogun, O. S. (2010). Economic Analysis of Sesame (*Sesamum indicum* L.) Production in Okene Local Government Area of Kogi State, Nigeria. *The Nigerian Agricultural Journal*, 41(2): 19-20.
- Ukwuaba, I. C. (2017). *Performance of watermelon marketing in Enugu State, Nigeria. Nsukka, Nigeria, Department of Agricultural Economics, University of Nigeria*. M. Sc. Thesis.
- Van dar Vossen, H. A. M., Denton, O. A. E. and Tahir, I. M. (2004). *Catullus lanatus*. In GDH Grubben, O. A. Denton (Eds); *About Resources of Tropical Africa Vegetables*, Wageningen, Netherlands CTA, Pp. 165-181.
- World Bank (2008). *Project Appraisal Document (Draft) Commercial Agriculture Development Project for the Federal Republic of Nigeria*.
- World Bank (2018). *World development report: Agriculture for development*. The World Bank, Washington DC.
- Yusuf, O. (2005). *Economic Analysis of 'Egusi' melon Production in Okehi Local Government Area of Kogi State*. M. Sc. Thesis, Department of Agricultural Economics and Rural Sociology, Ahmadu Bello University, Zaria, 41 Pp.