

CONSTRAINTS TO MARKETING OF WATERMELON IN AWKA SOUTH LOCAL GOVERNMENT AREA OF ANAMBRA STATE.

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ABSTRACT

The study investigated the constraints to watermelon marketing in Awka south local government area, of Anambra State. The specific objectives of the study were to; identified the socioeconomic characteristics of the watermelon marketers, describe the market structure; estimated the cost and returns of water melon marketing, as well as identified the constraints to watermelon marketing in the study area. Data for the study were collected with a well-structured questionnaire from a cross-section of randomly selected 100 watermelon marketers. The data were analysed with a combination of analytical tools such as descriptive statistics, budgetary technique, and mean threshold from a 5-points Likert scale were used. The study revealed female watermelon marketers (56.0%) who are still in their active age of 45 years dominated the market. Many (38.0%) of which are single and attended secondary school (36.0%). The respondent has gained 10 years of marketing experience; whose household size was 7 people. Their primary occupation was trading (55.0%) and they have to finance their trading through personal savings (58.0%). The study found that majority (66.0%) of the respondents are retailers, who purchase their watermelon from wholesalers (62. 0%). The Gini coefficient value was 0.469. The marketing of watermelon generated a profit of ₦144,311.82k. The constraints to watermelon marketing are high cost of transportation, seasonality of watermelon, poor storage facility, and high market fees among others. The study therefore recommend that watermelon marketers should engage in cooperative societies for financial aid and for the provision storage facilities for their products to avoid spoilage and loss.

Key Words: Constraints, Watermelon, Marketing, Marketers.

1. INTRODUCTION

Watermelon production has been an ongoing production and a source of livelihood for many people in Nigeria. The cultivation plays significant role in the attainment of food security and providing employment for the country (Olubunmi, Olatomide, Oladele , & Osuji, 2019). They are transported from the farm to the nearest assembly market for the consumers who assemble them to a city market and sell to other wholesalers, retailers. The unique characteristics of agricultural products including watermelon pose some problems both to the farmers, marketers and final consumers. Its seasonality, bulkiness, storage and perish ability exerts pressure on handling, packaging, transportation and sales with an attendant effect on the market price (Olumide, 2015). Watermelon from the farm reaches the consumers through adequate transportation and marketing system. Marketing involves all processes in the movement of products that consumers need from the point of production to the point of purchase. Marketing is concerned with all stages of operation which facilitate the movement of commodities from the farm to the consumers (Osondu & Ijeoma, 2014). Efficient marketing plays a crucial role in an economy and becomes more evident in areas where there is high rate of urbanization. The marketing system enables producers as well as middlemen to earn income with which they purchase other useful goods and services (Nkamigbo & Isibor, 2018). Marketing gives form, time and profits to the producers and the marketer both for retailers and wholesalers (Ukwuaba, Agbo & Ihemezie, 2019). There have been growing activities in the marketing of watermelon due probably to increasing consumer and marketer's awareness of its economic, nutritional and medicinal values (Osondu, Nwadike, Udahs, Ijioma, & Ugboaja, 2014). Therefore, efficient marketing of watermelon is important to ensure its all-year-round availability and affordability. Meanwhile, the availability of watermelon throughout the year is affected by marketing problems. The marketing channel of watermelon is an important part, its cost and location to the market may shorten the path of the distribution from producers to consumers. Improper handling of watermelon after harvest lowers quality and cause losses. The high perish ability of watermelon also discourages many farmers from going into large scale production, and the present growers from increasing their scale of production (Ukwuaba, Agbo & Ihemezie, 2019). The cultivation plays significant role in the attainment of food security and providing employment for the country. In watermelon marketing as well as other food marketing

enterprises, very large number of marketers at each end of the marketing channel is suggestive of competitive conditions (Tuffour & Dokuruga, 2015). Therefore, the focus in analyzing market structure is on the numbers and sizes of enterprises within the system, and the potential access of additional participants to it. A high number of buyers and sellers along the marketing chain, ease of entry into all functions, and widely available market information, together carry a strong presumption of competitive conditions. The structure of a market determined the efficiency of its marketing system (Agbugba, 2014). Market efficiency was higher in a competitive market than in a less competitive one. He concluded that the ideal market structure for optimal marketing efficiency, all things being equal was pure competition. Earlier studies on the structure of agricultural commodities showed that the market structure tends toward pure competition. Constraints to Marketing of watermelon are, high cost of transportation facilities, Lack of storage facilities, Lack of soft loan by government to marketers and farmers of watermelons, Source of water melon is from distance state, high perish ability of watermelon, nonexistence of central market for watermelon marketers, lack of land for cultivation, absence of a common trade language, bad road network Chamo, Karate and Rabu (2016).

Statement of the Problem

Watermelon production has been an ongoing production and a source of livelihood for many people in Nigeria. Many studies conducted in Nigeria focused on technical efficiency of watermelon production which measures how farms and farmers use physical resources and production technologies (Otitoju and Arene, 2014). Despite the nutritional value and economic benefits of watermelon to its consumers and producers, yet there are few researches on the constraints of watermelon production in Awka South Local Government Area of Anambra State. Ukwuaba, Agbo & Ihemezie, (2019) in their work performance of watermelon marketing in Enugu State, Nigeria using descriptive statistics, Gini coefficient, net marketing income, percentage marketing margin marketing efficiency index and multiple regression model. They reported that watermelon marketing was dominated by the married (76.25%), literates (97.5%) and females (78.13%) with the mean age 47 and marketing experience of seven years with high values of Gini coefficient for wholesalers (0.658) and retailers (0.729). The result of net marketing income per month in kilogram showed that watermelon wholesalers on the average received ₦1,668,292.13 while the retailers received ₦28,701.87. Njoku & Offor, (2016) studied the cost and returns

analysis of catfish marketing in Aba South Local Government Area of Abia State, Nigeria. The problems faced by the catfish producers were identified and ranked, capital was the most critical constraint as majority (80%) of the respondents reported that capital was the major constraint affecting production of catfish in the area. It was followed by transportation (70%).

The increasing demand for watermelon is an incentive to increase investment in the sub- sector. Hence, the focus of this study is to examine the constraints confronting water melon marketers in Awka South Local Government Area of Anambra state. This is the gap that the study intends to fill. In order to improve and increase the marketing efficiency of watermelon in the study area, one may want to know the following: What are the socio-economic characteristics of water melon marketers? What is the marketing structure of watermelon? What are the costs and returns of watermelon marketing? What are the constraints faced by watermelon marketers in the study area?

Objectives of the Study

The broad objective of the study is to analyze the economics of watermelon marketing in Awka south Local government area of Anambra State, Nigeria. In this regard, the specific objectives of the study were to: describe the socio- economic characteristics of water melon marketers; determine the marketing structure of watermelon; ascertain the cost and returns of watermelon marketing and identity the constraints faced by the watermelon marketers in the study area.

2. LITERATURE REVIEW

Agricultural marketing consists of two major concepts viz., “agriculture” and “marketing”. The first concept agriculture aims at producing the agro food products with the use of natural factors for the welfare of human. It is fully depending on natural processing. The second concept marketing refers to the activities that are done by the business organizations to promote their products and services to their targeted customers (Kiruthiga, Karthi & Asha, 2015). In marketing the targeted customers can be attracted and maintained by creating strong customer values for them in the organization. It is possible through, effective market survey, market trending, better customer service and satisfaction, customer focus and continuous follow up. The concept agricultural marketing includes many activities starts from production process till its retailing. The activities involved are production planning, cropping and harvesting, warehousing, grading, transportation and final distribution. There are varieties of agro products which are produced with

dual purpose of domestic consumption as well as exporting. In the chain of agricultural marketing number connecting links such as farmers, suppliers, functionaries, importers, exporters, external beneficiaries and customers are involved Ukwuaba, Agbo & Ihemezie, (2019). Agricultural marketing involves all those physical, legal and economic services, which are necessary to make products from the producers available to the consumers in the form desired by the consumers, at the place desired by the consumer and at the price agreeable to the producers and consumers for effecting a change of possession (Arene 2016). Agricultural marketing is the performance of all activities which direct the flow of goods and services to the consumer from the producers so as to accomplish the objectives of the producer (Arene 2016).

Concept of Marketing Structure

There is an established relationship between a direct, casual and deterministic market structure, and conducts (Anuebunwa, Lemchi & Njoku, 2006). Market structure may be defined as the characteristics of the organization of a market which seem to influence strategically the nature of the competition and pricing within the environment in which a firm operates. Market structure consists of characteristics of a market and determines the conducts of that market. It therefore influences the nature of competition as well as the pricing mechanisms within the market and thereby determining the level of market performance (Agbugba, 2014). Market structure is thus the physical dimensions involved in market organization, that is, the approximate definitions of industry and markets, the number of firms in the market, distribution of firms by various measures such as size and concentration, the description of products and product differentiation, and entry conditions. Market structure can thus be studied in terms of the degree of sellers and buyer concentration, the degree of product differentiation, the existence of entry and exit barriers, and the control of the distribution (Varmudy, 2012). Market structure is most commonly evaluated by examining trends in the numbers and sizes of firms relative to each other, and to number of consumers and producers, in particular times and places. Estimating the numbers, size and spatial distributions of each category of intermediary provides an indication of both the local structure of the market, and the range of alternatives faced by participants in the marketing chain in their buying, selling and hiring functions (Egesi & Ebe, 2021). Perfect competition, monopolistic competition, oligopoly, oligopoly and monopoly are the major market structures. Perfect competition, oligopolistic competition and monopolistic competition were the three basic

theoretical market models often used in analyzing market structure (Varmudy, 2012). Among the major structural characteristics of a market is the degree of concentration, that is, the number of market participants and their size distribution and the relative ease or difficulty for market participants to secure an entry into the market.

3. METHODOLOGY

3.1 The Study Area

Anambra State is one of the 36 States of Nigeria, located in the south Eastern region of the country. Formed in 1976 from the former East Central State, the state is named after the Anambra River. The state capital is Awka, a rapidly growing city that increased in population from approximately 300,000 to 2.5 million between 2006-2018. Anambra State consists of twenty-one (21) Local Government Areas which are: Aguata, Awka North, Awka south, Anambra East, Anambra West, Anaocha, Ayamelum, Dunukofia, Ekwusigo, Idemili North, Idemili South, Ihiala, Njikoka, Nnewi North, Nnewi South, Orumba South, Orumba South and Oyi. Anambra is rich in natural gas, crude oil, bauxite, and ceramic. It has almost 100 percent arable soil. This study was carried out in Awka south local government area, Anambra State. Awka South is made up of 9 (nine) communities which are Awka, which is the capital city, Amawbia, Ezinato, Isiagu, Nibo, Nise, Okpuno, Mbaukwu and Umuawulu. It has a population of 189,049 (NPC 2006) and a landmass of 175.14 sqm. The rainfall and temperature vary; rainfall reaches an average of 2000 per annum. The main occupation of the people is farming, trading and civil servants. Their cropping system is mainly mixed farming, inter-cropping, the people of Awka south are known for blacksmithing.

3.2 Population of study

The study comprised of all the registered (1,085) watermelon marketers in the study area.

3.3 Sampling technique and Sampling Size

In the first stage, five markets were purposively selected due to high concentration of watermelon marketers. The markets were (Eze Oyinbo market Amawbia, Ngeneoka market Nise, Eke Nibo and Nodu market Okpunua).

In the second stage, from each of the selected four markets, twenty -five marketers were randomly selected, giving a total of 100 marketers for the study.

3.4 Method of Data Collection

Data for this study were derived from primary sources which include the use of structured questionnaire. All the copies of the questionnaires were administered on the watermelon marketers. In collecting such data, marketers were asked relevant questions pertaining to watermelon marketing.

3.5 Method of data analysis

Objective (i) was achieved using descriptive statistics, such as; tables, means, frequency distribution. Objective (ii) was achieved with gini coefficient model, Objective (iii) was achieved through the use of gross margin analysis and objective (iv) were realized with Likert scale rating technique was used to achieve objective iii.

3.6 Model Specification

3.6.1 Descriptive Statistics

Model for descriptive statistics as follow:

$$X = \dots\dots\dots (\text{equ. 1})$$

Where

X=mean

X=variable

F=frequency

N=Number of observations

3.6.2. Gini coefficient model

The value of the Gini coefficient lies between 0 and 1; where zero implies a perfect market with perfect equality and 1 implies a perfect inequality in the distribution of income, signifying an imperfect market. The closer the Gini coefficient is to zero, the greater the degree of equality and the lower the level of concentration and the more competitive are the markets (Anuebunwa, 2008). That is, the closer the value to unity, the greater the degree of inequality and therefore, the higher the level of concentration and vice versa. It is effective in determining the degree of concentration in agricultural commodity markets.

Mathematically, Gini coefficient (GC) is expressed as follow:

$$GC = 1 - \sum XY. \quad (3.1)$$

Where:

X = the proportion of watermelon marketers,

Y = the cumulative proportion of total sales (income)

Σ = Summation sign.

3.6.3 Enterprise Budget Analysis Model

$$NP = (TR - TVC) - TFC$$

Where;

NP = Net Income or Net Returns in Naira (₦)

TR = Total Revenue in Naira (₦)

TVC = Total Variable Cost in Naira (₦)

TR –TVC = Gross Margin in Naira (₦)

TFC = Total Fixed Cost

3.6.4 Likert scale rating technique

A modified Likert scale is a psychometric scale in survey research. When responding to a likert questionnaire item, respondents specify their levels of agreement or disagreement on a symmetric agree - disagree scale for a series of item statement. The scale captures intensity of their feelings. A 4 - point rating scale was employed in this study. This was regarded as strongly agree (SA),

agree (A), disagree (DA), and strongly disagree (SD), with corresponding values of 4, 3, 2, and 1 respectively. The mean score (MS) of the respondents based on the 4-point rating scale was computed as 2.50 cut off point. Based on this, any score below 2.50 ($MS < 2.50$) was taken as a weak factor and may not be considered while those with mean score of above 2.50 ($MS > 2.50$) were taken as strong factors and thus be considered.

4.0 RESULTS AND DISCUSSIONS

4.1 Socioeconomic Characteristics

The socioeconomic characteristics of the watermelon marketers in the study area is presented in table 1. The variables of the socioeconomic characteristics are discussed as:

Gender: Majority (56.0%) of the marketers are female, while the rest 44.0% are male. This finding indicate that female watermelon marketers dominates the market in the study area. The result agreed with the findings of Owombo (2012) who reported that female farmers dominated food/fruit crop production and marketing in South-Western Nigeria. **Age:** The study showed that fair proportion (26.0%) of the respondents are less than 26 years, while the remaining 25.0% are within the age bracket of 36 – 45 years, 21.0% are within the age of 46 – 55 years, 15.0% are within the age of 56 – 65 years old. The average age of the respondents was found as 45 years. This finding is in line with the findings of Umaru, (2021) who stated that the age of watermelon marketers are 31 years at average. **Marital status:** The result showed that fair proportion (38.0%) of the respondents were single, 33.0% are married, 15.0% are widow/widower, and 14.0% are divorced/separated. This finding indicates that watermelon marketing is dominated with single marketers in the study area. This result contradicts with the report of Olubunmi, et al., (2019) who stated that married marketers dominated the watermelon venture. **Level of education:** The study revealed that greater proportion (36.0%) of the respondents had secondary education. The indication is that watermelon marketers are fairly educated. This is in line with the findings of Umaru, et al (2021) who stated that educated watermelon marketer perform better than the illiterate marketers. **Marketing experience:** The result showed that the greater proportion (35.0%) of the respondents has 6 – 10 years marketing experience, (26.0%) has 1 – 5 years marketing experience. The average marketing experience was 10 years, which means that the marketers are well experienced and have gathered the necessary skills in marketing of watermelon in the study area.

This is in line with the findings of Olubunmi, et al., (2019) who stated that the average marketing experience of watermelon marketers are 7 years. **Household size:** the study revealed that majority (64.0%) of the respondents have a household size of 5 – 8 people, (22.0%) have a household size of above 8 people. The average household size was found as 7 people. The number of people per marketer's household is large enough to supply cheap family labour during the marketing operation as well as to reduce the cost incurred in hired labour. This agrees with the report of Chamu, et al., (2016) who stated that average household size of fruit and vegetable marketer were 8 persons. **Primary occupation:** the study revealed that majority (55.0%) of the respondents are primarily traders, 15.0% of them are engaged in art and craft, 14.0% are farmers, 9.0% are artisans, and 7.0% are civil servants. **Source of fund:** the study revealed that majority (58.0%) of the respondents fund their marketing business through personal savings, 11.0% fund their marketing expenses through friends and relations, 9.0% fund through cooperative/issues, 8.0% sourced from microfinance bank, 8.0% sourced from commercial bank, and 6.0% sourced form bank of agriculture. **Table .1: Socioeconomic characteristics**

Variables	Frequency	Percentage	Mean
Gender:			
Female	56	56.0	
Male	44	44.0	
Age:			
Less than 26 years	26	26.0	
26 - 35 years	13	13.0	
36 - 45 years	25	25.0	45
46 - 55 years	21	21.0	
56 - 65 years	15	15.0	
Marital status:			
Single	38	38.0	
Married	33	33.0	
Divorced	14	14.0	
Widow/widower	15	15.0	
Level of education:			
Primary	6	6.0	
Secondary	36	36.0	
OND	23	23.0	
HND/BSC	19	15.0	
Vocational training	9	9.0	
No education	7	7.0	
Marketing experience:			
1 - 5 years	26	26.0	
6 - 10 years	35	35.0	10
11 - 15 years	22	22.0	
16 - 20 years	17	17.0	
Household size:			
1 - 4 people	14	14.0	
5 - 8 people	64	64.0	7
above 8 people	22	22.0	
Primary occupation:			
Trading	55	55.0	
Farming	14	14.0	

Civil service	7	7.0
Artisan	9	9.0
Art and craft	15	15.0
Source of fund:		
personal savings	58	58.0
Friends and relations	11	11.0
Cooperatives/issues	9	9.0
Microfinance bank	8	8.0
Commercial bank	8	8.0
Bank of agriculture	6	6.0

Source: Field survey Data, 2022.

4.2 Market structure

The market structure of watermelon marketing is presented in table 1. Gini coefficient technique was used to achieve this objective of investigating the market structure of watermelon in the study area. The market structure of watermelon is an important framework that gives crucial insight on how the market operates especially with regards to achieving a healthy competition among actors in the market Umaru, Jongur, Girei, & Onu, (2021). This concept of market structure is a tool used to investigate market situations, this will help to show the conditions of market entering and exit. The study used Gini coefficient to evaluate this market structure and conduct of watermelon, as adopted in Ukwuaba, Agbo, & Ihemezie, (2019). Gini coefficient is a measure of statistical dispersion intended to represent the income distribution, and it is the most commonly used measure of inequality derived from 45° of Lorez curve. The Gini coefficient close to one is an indication of imperfect market condition or a condition of monopolistic market. The result of the Gini coefficient shows that Gini coefficient value of 0.469 for watermelon indicates that there is low concentration ratios and market for watermelon is highly competitive in the study area. The implication of this result is that; there is sufficient competition among the watermelon marketers, and that no single individual or organization has a perceptible influence in the market.

Table 2. Market structure

Sn.	Pi	Xi	Cum pi	% cum pi	xi*pi	Relative xi*pi	inequality	Gini Coeff.
1	10	4434000	10	0.1	44340000	0.026	0.074	
2	10	3054000	20	0.2	30540000	0.018	0.182	
3	13	5559000	33	0.33	72267000	0.042	0.288	0.469
4	17	10896733	50	0.5	185244461	0.108	0.392	

5	50	27524023	100	1	1376201150	0.805	0.195
	Total				1708592611		

Source: Field Survey Data, 2022. Key: Pi (population of marketers), xi (sales revenue).

4.3 Costs and Returns of Watermelon marketing

The profitability of watermelon marketing in the study area is presented in Table 4.4. The result of the analysis revealed that the business generated ₦494,170.35 revenue from the sales of 514 bags/100kg of watermelon. The variable cost (VC) which is the amount spent in marketing activities was found as ₦343,917.01. On the other hand, the fixed cost spent was ₦5,941.52. It is important to note that every cost becomes variable in a long run. With this, the study submit that the total cost spent in marketing of watermelon was ₦349,858.53. To this, it becomes evident to present that gross margin (revenue less variable cost) which is the same as the profit from the marketing activity was ₦150,253.34. Equally, the net return (gross margin less fixed cost) was found as ₦144,311.82. It is interesting to note that the profitability ratio (PR) and return on investment (ROI) ratio are 0.44 (PR) and 0.41 (ROI) respectively. The implication is that the profit realized from the marketing of watermelon can finance the operational expenses by 44.0%, whereas the ROI value of 0.40 implies that the business earns ₦0.41 for every ₦1 investment made in the business. This agrees with Oyewo, *et al.* (2020) in cost and returns analysis of okra marketing in Ijebu North Local Government Area of Ogun State, Nigeria who found that okro marketing is a profitable venture.

Table 3: Profitability of watermelon marketing

Items	Quantity	Price	Amount (N)
Revenue			
Sales	514.07	961.29	494,170.35
Variable cost (VC):			
Purchase	514.07	599.91	308,395.73
Cost of loading	424.87	27.95	11,875.12
Cost of offloading	514.07	40.2	20,665.61
Cost of transport	-	-	1,380.55
Cost of storage	-	-	600.00
Miscellaneous	-	-	1,000.00
TVC			343,917.01
Fixed cost (FC)			
Rent			1,260.39
WB			1,337.31
Nylons			453.05
Table			1,814.15
Chair			672.44

Others	404.18
TFC	5,941.52
Total cost (TC)	349,858.53
Gross margin	150,253.34
Net returns	144,311.82
Profitability ratio	0.74
Return on investment (ROI)	0.61

Source: Field Survey Data, 2022.

4.4 Constraints faced by Watermelon Marketer

The constraints to watermelon marketing are presented in table 2. Data for the objective were capture with a 4-points Likert type scale. Mean threshold of 2.5 was set for decision making process. Variables with a mean score of 2.5 and above agrees with the statement, while those below the threshold of 2.5 disagree with the selected constraints. The study had a grand mean of 2.73 and a standard deviation value of 1.07. This standard deviation value is high enough to accept the existence of variability of the respondent's decision. Based on the nine items of constraints to watermelon marketing selected, eight had a threshold of 2.5, this means that the accepted constraints are high cost of transportation (2.78), seasonality of watermelon (2.91), poor storage facility (3.03), and high market fees (1.99). inadequate capital (2.58%), no access to credit facility (2.78), long distance to market (2.85), non-existence of centralized market (2.91), and perishability nature of watermelon (2.76). this is in line with the study of Agbugba, (2014) who stated that poor storage facility, lack of capital and poor transportation are the major constraints faced by the watermelon marketers in Nigeria.

Table 4. Constraints to watermelon marketing

Sn.	Constraint	Mean	Std. Dev.	Decision
1	High cost of transportation	2.78	1.114	Agree
2	Seasonality of watermelon	2.91	1.049	Agree
3	Poor storage facility	3.03	1.006	Agree
4	High market fees	1.99	1.063	Disagree
5	Inadequate capital	2.58	1.007	Agree
6	No access to credit facility	2.78	1.245	Agree
7	Long distance to market	2.85	1.094	Agree
8	Non-existence of centralized market	2.91	0.894	Agree
9	Perishability nature of watermelon	2.76	1.156	Agree
	Grand mean	2.73	1.07	Agree

Source: Field Survey Data, 2022.

4.0 Conclusion

The study investigated the economics of watermelon marketing in Awka south LGA of Anambra State. The study had four specific objectives which identified the socioeconomic characteristics of the watermelon marketers, examined the market structure, estimated the profitability, as well as identified the constraints to watermelon marketing in the study area. The study interestingly found that female watermelon marketers (56.0%) who are still in their active age of 45 years dominated the market. Many (38.0%) of which are single, and attended secondary school (36.0%). The respondent has gained 10 years of marketing experience; whose household size was 7 people. Their primary occupation was trading (55.0%) and they have to finance their trading through personal savings (58.0%). This study revealed some interesting findings about the marketing of watermelon in the study area. Due to the activities different actors in the market, as well as resulting from the traders' orientation on market structure, the value of the Gini coefficient was 0.469 which implies that there is low concentration ratios and high competitiveness for watermelon in the study area. The accepted constraints identified by the study were high cost of transportation (2.78), seasonality of watermelon (2.91), poor storage facility (3.03), and high market fees (1.99). inadequate capital (2.58%), no access to credit facility (2.78), long distance to market (2.85), non-existence of centralized market (2.91), and perishability nature of watermelon (2.76).

5.0 Recommendations

- i. Watermelon marketers' cooperatives should ensure credit facilities to members to enable effective marketing activities
- ii. Storage facilities should be made available by the marketers and should be trained on the best way to store their watermelon till they are fully sold out.
- iii. Storage facilities should be made available by the government; traders should be trained on the best way to store their watermelon till they are fully sold out.

REFERENCES

- Agbugba, I. K. (2014). Marketing of dry season vegetables in South-East Nigeria. A Ph.D Thesis submitted to the Department of Agricultural Economics; University of Nigeria, Nsukka. Anuebunwa, F. (2002). A structural analysis of yam trade flows into Abia State of Nigeria. *Nigeria Agricultural Journal*, 33(5), 17–22
- Adakaren, B. (2014). Raphia palm wine marketing in south south, Nigeria. A Ph.D Thesis submitted to the Department of Agricultural Economics; University of Nigeria, Nsukka
- Anuebunwa, F., Lemechi, J., & Njoku, J. (2008). Gari marketing system in Abia State of Nigeria: An assessment of garri marketing margins. *Journal of Sustainable Tropical Agriculture Research*, 17(6), 21–25.
- Chamo, A.M.B. Karate, A.K and Rabu, A.M (2016). Factors Affecting watermelon production among farmers of Gada community, Kazaure Local Govt. Area, Jigawa state. *Global Advanced Research Journal of Agricultural science* 5(12):432_439.
- Osondu, C. K. & Ijioma, J. C. (2014). Analysis of profitability and production determinants of fish farming in capital territory of Abia State, Nigeria. *World Journal of Agricultural Sciences*, 2 (7): 168-176
- Olubunmil Balogun, Olatomide S Akinboro, Oladele T. Akinwale and Emeka E. Osiji (2018). An economic analysis of watermelon marketing Lagos State Nigeria. *International Journal of vegetable Science*. ISSN: 1931_5260 ROSEMARY CARLSON (2020)
- Olubunmi L. B., Olatomide, S. A., Oladele, T. A & Osuji, E.E (2019). An economic analysis of watermelon marketing. *International Journal of Vegetable Science Volume 25, 2019 - Issue 4 (148) Pages 355-361 | Published online: 10 Sep 2018* <https://doi.org/10.1080/19315260.2018.1519625>.
- Olumide, J. (2015). An appraisal of the structure and conduct of watermelon marketing in Akure metropolis, Ondo State, Nigeria. *Sky Journal of Agricultural Research*, 4(4), 80–89.
- Njoku, M.E. and Offor E.I. (2016). cost and returns analysis of catfish marketing in abia south local government area of abia state, nigeria. *Agro-Science Journal of Tropical Agriculture, Food, Environment and Extension* Volume 15 Number 2 May 2016 pp. 9 – 14.
- Nkamigbo D.C and Isibor A.C (2018) Inter-market price spread and determinants of net farm income in watermelon marketing in Anambra State
- Tuffour, M., & Dokuruga, M. T. (2015). Margins and efficiency analysis of watermelon Marketing in Rural Northern Ghana. *IOSR Journal of Business and Management*, 17(2), 58–63.
- Umaru, S. W., Jongur, A. A. U., Girei, A. A., & Onu, J.I (2021). Analysis of Costs and Return on Watermelon Marketing in Selected Markets in Adamawa State, Nigeria. *Direct Research Journal of Agriculture and Food Science*. Vol. 9, 2021, Vol. 9, Pp. 420-424, 2021 ISSN 2354-4147. DOI: <https://doi.org/10.26765/DRJAFS165327564>.
- Ukwuaba, I. C., Agbo, F.U & IHEMEZIE, E. J (2019). Performance of Watermelon Marketing in Enugu State, Nigeria. *Journal of Marketing and Consumer Research*. ISSN 2422-8451 An International Peer-reviewed Journal Vol.62, 2019 PP.54