ANALYSIS OF FRESH FISH MARKETING IN IKPOBA OKHA LOCAL GOVERNMENT AREA OF EDO STATE, NIGERIA

BY

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BENIN CITY

MAY, 2024

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A PROJECT SUBMITTED TO THE DEPARTMENT OF AGRICULTURAL ECONOMICS AND EXTENSION SERVICES, FACULTY OF AGRICULTURE, UNIVERSITY OF BENIN, BENIN CITY IN PARTIAL FULFILLMENT FOR THE REQUIREMENTS FOR THE AWARD OF BACHELOR'S DEGREE IN AGRICULTURE (OPTION: AGRICULTURAL ECONOMICS AND EXTENSION SERVICES)

MAY, 2024

CERTIFICATION

This is to certify that the research work on the ANALYSIS OF FRESH FISH MARKETING IN IKPOBA OKHUA LOCAL GOVERNMENT AREA OF EDO STATE NIGERIA was carried out by Blessing EGHOMAN with the Mat. No: AGR1800015 under the supervision of the department of Agricultural Economics and Extension Services, Faculty of Agriculture, University of Benin, Edo State, Nigeria.

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Date	**Date**

DEDICATION

This research work is dedicated to the Almighty God who in his infinite mercy, sustained, favoured and strengthened me all through this period.

ACKNOWLEDGEMENTS

I sincerely appreciate the ever-great God for seeing me through my undergraduate degree in this ever-green Faculty of Agriculture, University of Benin and also for his sustaining grace during the cause of this research.

With a heart filled with immense joy, I also thank my supervisor Dr. O. Igbinidu for his sustaining contributions through his immense teachings, errors correction and guidance towards achieving an excellent work. I also appreciate the Head of Department, Prof. (Mrs.) M. J. Koyenikan, Dean of Faculty of Agriculture (Prof. D. N. Izekor), Asst. Dean of Faculty of Agriculture (Dr. O. Ojogho), course adviser, Mr. Alex Ehigie. My profound appreciation goes to the following lecturers: Prof. F. E. Omoregbe, Prof. C.O. Emokaro, Prof. C.I. Ada-Okungbowa, Prof. P. O. Erhabor, Prof. J. Ahmadu, Prof. D. U. Okoedo-Okojie, Dr. O. Ojogho, Dr. J. A Egbodion, Dr. J. I. Osabuohien, Dr. (Mrs.) O. B Izekor, Dr. S. O. Konkwo, Dr. G. E. Uwana, Dr O. Anozie, Mr. E. W. Edobor, Mrs. I. Eromwon, Mrs. L. T. Osazuwa, as well as the non-academic staffs of the faculty for their contribution towards the success of this programme who had imparted me with knowledge as concerning this profession.

My special appreciation goes to my parents, Mr. and Mrs. Humphrey Eghoman for their constant prayers and advice. To my wonderful siblings; Faith and Greatness, I want to appreciate you for the love and support, my gratitude also goes to my uncle Mr. Joel Okoh for his immense financial and moral support.

I appreciate greatly my friends; Igbinoba Seroma, Osakue Katherine, Darah Chisom, Oluwabamiwo Emma and Kingsley for their constant love, support, and care. Special thanks to my course rep; Adogamhe Alexander and Enofe Treasure and Edudje A. Wisdom for their continuous support and friendship.

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ABSTRACT

This study was carried out to analyse fresh fish marketing in Benin Metropolis. The specific objectives are to; describe the socio-economic characteristics of fresh fish marketers in the study area; ascertain the marketing Chanel for fresh fish in Benin Metropolis; estimate the profitability of fresh fish marketing in the study area and identify the challenges confronting fresh fish marketing in the study area.

A three-stage sampling procedure was used in the study. The final stage involved the use of simple random sampling technique in the selection of 72 respondents. Both primary and secondary data were used in the study. Primary data was collected using a structured questionnaire through field survey and interview schedule. The collected data were measured and analyzed using descriptive statistics such as frequency counts, percentages, mean and standard deviation. Profitability was analyzed using Gini coefficient and market margin while the hypothesis was analyzed using multiple regression.

The results showed that majority (73.6%) of the marketers were female and 42 years old. The results also indicated that most (77.8%) of the marketers were married, with Primary School living certificate and 5 persons within household. The results indicated that 84.93% of the marketers had marketing experience of 2 to 11 years, majority (55.6%) of marketers are not member of cooperative society and 77.8% are full time marketer. The total margin was 178519.1781 and marketing margin was ₦154741.54. The results showed that there was a negative and significant relationship between marketing experience and fresh fish marketing at 10% level of probability. The results also showed that contact with extension agent has a positive and significant influence on fresh fish marketing in the study area. The challenges confronting fresh fish marketing is shown in Table 4.5. The results showed that Inadequate finance 1st challenges confronting fresh fish marketing, High cost of transportation 2nd, Price fluctuations 3rd, Inadequate marketing experience 4th. Based on the findings in this study, it be concluded that the fresh fish marketing has good structure, performance and market margin. Marketing

experience and extension agent services influence fresh fish marketing. It is therefore recommended that government should enhance financial access, implement initiatives to improve access to finance for fresh fish marketers, such as providing microfinance options, grants, or low-interest loans tailored to their needs. Explore strategies to mitigate the high cost of transportation by improving infrastructure, facilitating bulk transportation arrangements, and incentivizing collective transportation solutions among fish marketers. Develop risk management strategies to help fresh fish marketers mitigate the impact of price fluctuations, such as establishing price stabilization mechanisms, diversifying product offerings, and implementing forward contracts or hedging strategies.

CHAPTER ONE

INTRODUCTION

1.1 Background of the study

Fish is one of the most important sources of food and income to many people in developing countries. The demand for fish globally and particularly in Nigeria has been on the increase with supplies not meeting up the demand (Ewepu 2019). Nigeria's annual fish demand is 2.7 million tonnes with local production standing at 0.8 million metric tonnes and a 1.9 million metric tonnes deficit supplied through imports and worth about $1.2 billion (Ewepu 2019). Fresh fish is an essential source of food and relatively cheap source of animal protein to many people across developing nations, especially Nigeria. People in some communities in various regions and states in Nigeria derived their livelihood from fishing and related activities as a result of their closeness to oceans and seas. Fish is an important part of the diets of people in these regions. It has been reported that fish consumption accounts for about 35% of animal protein consumption in Nigeria and this could mean that fish farming is a vibrant and dynamic commercial sector in Nigeria, ripe with investment and employment opportunities (United States Agency for International Development (Larson, *et al*., 2021).

According to Girei *et al*., (2021), marketing is a process that involves the identification of wants and need of consumers and the supply of foods and services that are acceptable, and which satisfy the need and wants of consumers and the entrepreneur/manager at a profit. It involves the transportation of the products in the form most acceptable by the

consumers thereby creating various forms of utilities through such economic activities as processing, storage, preservation, transportation, wholesaling and retailing among others. The marketing process of handling and marketing of fresh fish is very delicate if quality and nutritional value are to be maintained due to its short shelf life. Efficiency in marketing system is essential for growth and development of the fishery subsector.

Edo State is a fish production and marketing location; diverse actors are involved in fish marketing. They all relate and interact through value chains that are now called links and networks; however, the kind of links and networks as well as the roles played by various actors is not well defined and not properly ascertained. Channels and innovation system study thus helps to identify the actors involved in fish marketing, determines their roles and gives an understanding of how they (actors) interact to generate, share, transfer knowledge and adopt new ideas so as to improve marketing performance (Madugu, *et al* 2019). Improvement in fish marketing has the potentials of stimulating fish production in the country in view of the huge deficit between local production and consumption. This will have a downward effect on the price of fresh fish and thereby induce more consumption of fish by consumers.

The major gaols for fish marketing are to established profitability and marketing margins of the various participants (i.e. wholesalers and retailers). Research has shown that there is continuous increase in the number of participant in fish marketing as a result of growing population of the country (Girei *et al*., 2021). This is an inkling of the

profitability of the enterprise as only profitable activities could be attracting increasing number of participants. The middlemen are accused of earning higher profits in the marketing system (Emaziye and Ovharhe 2021). The economy and the marketing system of Nigeria are still undergoing development. This has imposed a lot of challenges on marketing of catfish in the country.

1.2 Statement of problem

One of the greatest problems confronting millions of Nigerian today is lack of adequate protein intake both in quality and quantity to feed the nations ever-growing population (World Health Organisation WHO, 2020). According to Osundare and Adedeji (2018), the per capita consumption of animal protein in Nigeria is only 9.3g/day as against 34/day recommended by the Food and Agriculture Organization (FAO) to be the minimum requirement for the growth and development of the body. This inadequacy results in problem of malnutrition. The resultant effect of serious deficiency in the amount of protein intake is that people's health is adversely affected; particularly the mental capability, working productivity and eventually, the overall national economic growth (Osundare and Adedeji, 2018). Fish, when readily available and affordable can alleviate the problem of malnutrition as its supply of animal protein is usually of higher quality than that of plant protein.

Gbigbi and Achoja (2019) constraints to the growth of catfish value chain were inadequate credit access and high expenditure on inputs. It has been argued that lack of

innovation agricultural marketing would result in high rate of spoilage, poverty and unaffordable food prices by consumers. However, not many studies have empirically evaluated the validity of these hypotheses in fish marketing. Marketing of food in Nigeria is characterized by multitudes of deficiencies such as lack of innovations. These deficiencies cut across processing, preservation, packaging, distribution and transportation in fish marketing (Baba *et al.,* 2015). In fish marketing, problems of shortage of supply, price fluctuations, low availability of water, and spoilage in transit, lack of innovation have been identified in the country (Agbebi and Adetuwo, 2018). Ogundari and Ojo, (2019), identified inadequate processing skills, produce deterioration and lack of storage facilities as the major constraints perceived by women marketers.

Fish supply and marketing suffer so many obstacles ranging from shortage of supply, price fluctuation and spoilage in transit. Despite these, the people involved in the marketing of the fresh fish appear to be on the increase because of increase in the population and therefore, the demand tends to be high and increase in concentration implies more scope for the middlemen to exploit either the consumers by charging high or the producers by paying them lower price.

Omotosho (2017) observed that there is the basic problem of the unequal bargaining power between marketers and various links in the marketing chain. There has been a continuous problem of price and sales volume fluctuation over the years as a result of marketing structure inefficiencies (Erhabor, *et al.,* 2018). It is known that most

agricultural produce are bulky, perishable and highly prone to microbial attack which leads to deterioration in quality and finally results in the spoilage and wastage of these products.

There is every reason to worry about this situation and role of marketers in fresh fish marketing in Nigeria because the level of animal protein consumption is rated very low compared with recommended levels. It is against this background this study therefore seeks to obtain answers to the following research questions.

i. what are the socio-economic characteristics of fresh fish marketers in the study area?
ii. what is the marketing Chanel for fresh fish in Benin Metropolis?
iii. what is the structure and performance of the fresh fish market?
iv. Is the fresh fish marketing profitable in the study area?
v. what are the challenges confronting fresh fish marketing in the study area?

1.6 Objective of the Study

The major objective of the study was to analyse fresh fish marketing in Benin Metropolis. The specific objectives of the study was to:

i. describe the socio-economic characteristics of fresh fish marketers in the study area
ii. ascertain the marketing Chanel for fresh fish in Benin Metropolis
iii. determine the structure and performance of the fresh fish marketing

iv. estimate the profitability of fresh fish marketing in the study area

v. identify the challenges confronting fresh fish marketing in the study area

1.7 Research Hypotheses

The study was guided with the following hypotheses

Ho_1: Socio-economic factors have no significant influence on fresh fish marketing

1.5 Justification of the study

Knowledge of management and system brings about social interaction where different actors collectively introduce a new idea or improve on an existing idea. However, in Edo State, such collective interaction among actors particularly in the fisheries sub-sector has not been identified, rather, focus on previous studies has been on the economic aspect of fish productivity.

As important as marketing is, most of the studies on fish have concentrated on production (Johnson *et al.,* 2020). Available information shows that few of the studies on fish marketing did not investigate the evidence of its profitability, marketing channels, structure, conduct and performance fresh fish marketing (Kaleem and Bio 2020). Achoja *et al*., 2020) reported that availability of fish to consumers at the right time and place requires an effective and innovative marketing system, Bennett *et al*., (2019) studied the determinants of Fresh Fish Marketing and Profitability among Captured Fish Traders in South-South Nigeria but fail to examine the marketing channel and market structure, Girei *et al*., (2021) concentrated on comparative analysis of Smoked and fresh fish

marketing and fail to include the quantity fresh fish marketed every month, Emaziye and Ovharhe (2021) study concentrated on the profitability of the fish selling business. To the best of my knowledge no research has been conducted on fresh fish marketing analysing profitability, marketing channels, structure, conduct and performance especially in Benin Metropolis hence the significance of this study.

It is hoped that the findings of this work will provide the necessary framework that would improve the capacity of producers and middlemen to be more efficient in all aspects of fish distribution in Edo State. The result of this study will not only be useful to students, the private sector and policy makers but also to all participants in production, processing, marketing of fish and will provide basis for more studies in the area.

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Aquaculture

Aquaculture is the farming and husbandry of aquatic organisms under controlled or semi-controlled conditions. Aquaculture is the practice of rearing, growing or producing products in water or in managed water systems. Mires (2017), also defined aquaculture as the commercial rearing of fish in conditions where all the basic means of production can be controlled within their respective limitations and from which producers aim to obtain optimal economic results. These organisms may be plants, fish or shellfish, oysters, mussels, clams, shrimp, crabs and crawfish. Aquaculture is employed for a variety of ends: fish may be raised to stock public waters for sport fishing and for commercial fishing; it may be to save an endangered species; or it may be to harvest a commercially viable in ponds or coastal waters (Okonkwo *et al.,* 2020). In simple terms, aquaculture is agriculture: the farmer farms the water instead of the land; depending on the species, the water may be fresh or brackish or salty. Although aquaculture is a generic term, it generally refers to the culture of plants and animals in freshwater, while culture in saltwater is commonly known as mariculture (Okonkwo *et al.,* 2020).

Fish farming involves raising fish commercially in tanks or enclosures such as fish pond, usually for food. It is the principal form of aquaculture, while other methods may fall under mariculture. Worldwide, the most important fish species produced in fish farming are carp, tilapia, salmon and catfish (FAO, 2018).

Fish farming may range from large scale industrial enterprises to 'backyard' subsistence ponds. Farming systems can be distinguished in terms of input levels.

1. Extensive system: In extensive fish farming, (economic) inputs are usually low. Natural food production plays a very important role, and ponds productivity is relatively low. Fertilizer may be used to increase pond fertility and thus fish production.

2. Semi-intensive system: a moderate level of inputs is used and fish production is increase by the use of fertilizer and/or supplementary feeding. This means higher labour and food costs but higher fish yields more than compensate for this usually.

3. Intensive system: a high level of inputs is used and the ponds are stocked with as many fish as possible. The fish are fed supplementary food, and natural food production play a minor role (FAO, 2018). In this system, the high feeding costs and risks, due to high fish stocking densities and thus increased susceptibility to diseases and dissolved oxygen shortage, can become difficult management problems. Because of the high production costs you are forced to fetch a high market price in order to make the fish farming economically feasible. The cost of input used in fish production can be refers to price of various input used in production of catfish to obtain a benefit.

2.2 Importance of Fish

Nigeria as a maritime nation with a vast population of over 160 million people and a coastline measuring approximately 853 kilometres, fish production as an enterprise possesses the capacity to contribute significantly to the agricultural sector (Johnson *et al.,* 2020). With an annual fish demand in the country of about 2.66 million tonnes, and a

paltry domestic production of about 780,000 tonnes, the gap between demand and supply stands at about 1.8 million tonnes. Despite the popularity of farming in Nigeria, the fish farming industry can best be described as being at the infant stage when compared to the large market potential for its production and marketing (Johnson *et al.,* 2020). Fish supply is from four major sources viz., artisanal fisheries, industrial trawlers, aquaculture and imported frozen fish. Gammone *et al.,* (2019) also posited that the Nigerian fishing industry comprises of three major sub sectors namely the artisanal, industrial and aquaculture of which awareness on the potential of aquaculture to contribute to domestic fish production has continued to increase in the country.

The Niger Delta contributes more than 50% of the entire domestic Nigerian fish supply, being blessed with abundance of both fresh, brackish and marine water bodies that are inhabited by a wide array of both fin fish and non-fish fauna that supports artisanal fisheries. A right step towards arresting the demand-supply deficit for fish is aquaculture, which involves raising fish under controlled environment where their feeding, growth, reproduction and health can be closely monitored (Akinrotimi *et al.,* 2019). Aquaculture practices as a business venture is capable of bringing significant development in the rural and urban areas by improving family income, providing employment opportunities and reducing problems of food supply and security (Akinrotimi *et al.,* 2019). The vast Nigerian aquatic medium of numerous water bodies like rivers, streams, lakes, reservoirs, flood plains, irrigation canals, coastal swamps offer great potentials for fish farming as the least exploited fishery sub-sector with the vast brackish water fishing grounds almost

unexploited (Akinrotimi *et al.,* 2019). Less than 1.0% of the fresh water grounds and about 0.05% of the brackish water grounds are under aquaculture to produce a current average yield of 20,500 tonnes of fish per annum. This represents only 3.12% of the estimated fish culture potential of 656,815 tonnes per annum. Although the contribution of fisheries to the GDP is small (3-4%), it occupies a very significant position in the primary sector providing employment for over five hundred thousand people and contributing to over 40% of the animal protein intake of the people particularly the poor (Gbɪgbɪ, 2022). An estimation of 10 million Nigerians actively engaged in the upstream and downstream areas of fisheries operations in Nigeria, the contribution of the fisheries sub-sector to the nation's economy is significant, ranging from employment creation to the provision of raw materials for the animal feed industry (Sanni, *et al*., 2019).

2.3 Problem of Fish Production

Despite the increase of fish production in Nigeria, production level is still very low and this has been attributed to high cost of input, lack of credit to fish farmers at low interest rate, lack of skill among these are: poor management skills, inadequate supply of good quality seed, lack of capital, high cost of feed, faulty data collection, lack of led manpower and an ineffective aquaculture extension service system (Caetano and de Castro, 2023). Also, Gbigbi and Achoja (2019) found out that a number of problems confront the production of catfish; being a major specie in Nigeria. If the associated problems of production, especially the twin issue of feed production and fingerling supply are tackled, then Nigeria will soon become an exporter of catfish in no distant

time. According to Ababouch and George, (2020), the major problem hindering the promotion and development of the aquaculture industry in Nigeria has been high cost of feed, the scarcity of fish fingerlings and that the major factors militating against the production of high quantity of fish seed are energy and water quality related problems arising from skills gap in the industry. It was also reported that inadequate supply of fingerlings as a constraint to fishery subsector amongst other factors such as inadequate information and feed supply (Ababouch and George, 2020).

Fish Marketing

Marketing is a process of exchanging goods and services from one person to another with reference to price. A fish market is a place used for marketing of fish and fish products. However, fish marketing essentially consists of all the activities involved in delivering fish from one producer to the consumer, while distribution provides channels that link the marketing institutions and producers together. The market mechanisms have to be efficient to be able to play the role of propelling yield. An efficient market system therefore is the one that provides satisfactory and cheap services to consumers or one that maximize the ratio of input and output of marketing. In Nigeria, fish system varies depending on type of fish product and the distance between producer and source of supply of fish product and retailer and ultimately to consumer. Fish supply and marketing suffer from various sets backs, ranging from shortage of supply, price fluctuation due to drying up of the source and spoilage in transit amongst others. Despite these, the agencies involved in the marketing of the commodity appear to be on the increase as a result of

increase in the population and therefore, the demand tends to be high. Also despite the nutritional and commercial values of fish and fish products, its production and marketing remains low in Nigeria when compared to other nations of the world (Bennett *et al*., 2019). Fish is consumed in all parts of the country and has a good market price. Often times, marketers are compelled if not forced to sell their product at a very low price to avoid huge wastage or total loss and this reduces their marketing margins and marketing efficiency. Although, a number of studies have been carried out on fish and fish products in Nigeria, most of such studies dwelled on its production and consumption. Agricultural marketing is central to agricultural development and the overall growth and development of the economy. Previous studies have shown that efficient marketing system stimulates agricultural production (Awoyinka and Ikpi, 2015).

Efficiency in fish marketing has the potentials of stimulating fish production in the country in view of the huge deficit between local consumption and production. This will have a downward effect on the price of fish and thereby induce more consumption of fish by consumers. The importance of this development cannot be over-emphasized in country like Nigeria whose economy, life and wellbeing are immersed in agriculture, and fish alone constituted more than 40% of total protein intake in the country. Major components of fish marketing efficiency are profitability and marketing margins of the various participants (i.e. wholesalers and retailers). Research has shown that there is continuous increase in the number of people involved in fish marketing as a result of growing population of the country (Ali *et al.,* 2018). This is an inkling of the profitability

of the enterprise as only profitable activities could be attracting increasing number of participants. Furthermore, the economy of Nigeria, just like other sub-Saharan African countries, is still developing. This has imposed a lot of challenges on marketing of goods and services in the country, especially agricultural products like fish. It has been argued that agricultural marketing is inefficient resulting in high rate of food spoilage, poverty and unaffordable food prices by consumers. However, not many studies have empirically evaluated the validity of these hypotheses in fish marketing. According to Adekanye (2018) marketing of food in Nigeria is characterized by multitudes of deficiencies and problems. These problems cut across processing, preservation, packaging, distribution and transportation. Short *et al*. (2021), identified inadequate processing skills, produce deterioration and lack of storage facilities as the major constraints perceived by women marketers.

However, this may not be exhaustive bearing in mind the paucity of research in fish marketing, and also the rural nature of participants in fish marketing. According to (Adekanye, 2018), marketing is a method used to bring the interpersonal forces of demand and supply together irrespective of the location of the market. Application of various pricing criteria on sales of fish depend on efficiency with which the marketing system transmits information among the fish mongers or marketers and consequently, prices of fish changers as it passes through middlemen such that by the time it reaches consumers, it becomes expensive. Olagunju, (2019) observed that middlemen are marketing intermediaries that do not add title to the products, but receives fee for

expediting the exchange. Fish supply and marketing suffer from various setbacks ranging from shortage of supply, price fluctuation due to drying up of the source, spoilage in transit etc. Despite these, the individuals involved in the marketing of the commodity appear to be on the increase as a result of increase in the population and therefore, the demand tends to be high. Olagunju, (2019) indicated that increase in concentration implies more scope for the middleman to exploit either the consumers by charging high or the producer by paying them lower price. Nigeria offers the largest market for fisheries products in Africa. Fish production from capture fisheries in spite of its being expensive and risky in the coastal line regions of Nigeria has been erratic and on the decline in recent years, resulting in increase in poverty and nutritional deficiency. Fish production and marketing remains the best option to bridge the gap between the total fish demand and total domestic production in the face of high cost of production input and unstable government policy.

2.4 Profitability

Profitability of fish Production and marketing.

Profitability Analysis involves estimation of costs and returns of production. Gomez (1975) and Utobo, *et al.* (2017) developed a farm level model to evaluate alternative cropping mixtures and patterns. These involves as follows: (i) profitability: this is measured as the differences between value of yield and cost of production, and (ii) Net return: this involves the difference between value of yield and cost of inputs, including hired labour in choosing economic indicators on the basis of production factors affected

by potentials innovation. Utobo, *et al.* (2017) suggested the use of the following: (i) the gross margin and returns to variable cost, where only capital is affected. (ii) Yield/labour ratio, where only labour is affected, and (iii) Gross margin and returns to variable cost, where only capital is affected. (ii) Yield/labour ratio, where only labour is affected, and (iii) Gross margin, return to variable costs and monetary return to labour, where capital and labour are affected. The major problems associated with cost-return analysis as basis for profitability assessment are: (i) It does not indicate the relative importance of each of the resources in production and (ii) It is location bound and specific in applicability due to use of money as the common unit of measurement and the prevailing price for estimates. Gomez (1975) said that in spite of the limitations, Cost and return analysis is a useful tool for enterprises comparison and indicating a profitability pattern of aggregate input use.

The profitability of an investment is based on a comparison of the returns and cost of the investment. Another way to add value on the production side would be to reduce processing costs by increasing the efficiency (and thus the profitability) of production (Utobo, *et al.* 2017). Hence, the profitability of crop production depends on reducing the farming cost as much as possible, and at the same time maximizing the income from the sale of crop. Profitability in some farm business exists because they are managed more efficiently than others. The reward for doing the job better is usually profit. The prospect of earning and maintaining profitability serves as the incentives for creativity and efficiently among farmers. Profitability stimulates risky ventures and drives farmers to

develop ways of cutting cost and improving technology always in an effort to satisfy consumer interest. Profitable agriculture is dependent on productive soil and catfish production is not an exception.

Net farm income is the difference between gross income (revenue) and total cost of production. It is used to show the levels of costs, returns and net profit that accrue to farmers involved in production. The technique emphasizes the costs (fixed and variable cost) and returns of any production enterprise. Aminu *et al.,* (2017) have examined two major categories of costs involved in crop production. These are fixed and variable cost. Fixed costs (FC) refer to those costs that do not vary with the level of production or output while variable cost (VC) refers to those costs that vary with output. The total cost (TC) is the sum of total fixed cost (TFC) and total variable cost (TVC)

2.5 Theoretical Framework

2.5.1 Utility theory

Utility is a measure of relative satisfaction. It refers to the total satisfaction derived from the consumption of a good(s) and/or service(s). Utilities are created through production activities which involve the making of goods and services useful and available, and marketing is a major part of the production process. There are various forms of utilities that can be created through the production processes. These include utility of form, utility of place, utility of time and utility of possession (Utobo, *et al.* 2017).

Ogbe *et al*., (2018) Form utility is created through the process of transformation of products, goods and services from one form to another. Catfish are not normally

consumed when it attained table size. Their original forms are changed to forms which can give maximum satisfaction to different classes of consumers. Most times they have to be transported to places where there is effective demand for them. This is made possible through marketing activities. Furthermore, catfish is usually not consumed when they are harvested or produced.

According to Aminu *et al.,* (2017), fish abundance is only experienced in the rainy season (natural production from river); however, their consumption is year round. Time utility is created in the process of making catfish available to consumers all the year. Time utility is created through processing and storage activities. Through marketing activities, catfish may be stored and processed. This helps to preserve the catfish and make it fit for consumption throughout the year. In the same vein, according to marketing activities help in the creation of possession utility. By so doing, marketing activities assist the consumers in acquiring and taking title to desired products. The processes that bring about these utilities are carried out by middlemen; as such they perform very important roles in marketing activities.

2.5.2 Consumer Theory

Consumer Behaviour

Consumer decision making is concerned with the decisions of individual consumers (in some cases assumed to be representative of the wider population). The outcome of consumer decisions is the quantity of goods and services consumed at given prices and income levels. In a conceptual sense consumers act to maximize utility (their satisfaction

level) subject to a budget constraint. One complexity of consumer theory is that it implies that every individual's actual preferences for unlimited goods can be known. In fact that is an impossible task so theorists assumed only that consumers are able to rank their preferences (ordinal utility) or recognize that a particular bundle of goods and services is preferred to another bundle with different combinations of goods and services. Assuming that consumers are rational and that they can rank goods and services in order of preferences then the consumer choice problem can be expressed as:

Maximize $U = U (q_1, q_2., \ldots. q_n)$

Subject to: $Y = p_1 q_1 + p_2 q_2 + p_3 q_3 + \ldots p_n q_n$,

where U represents consumer utility, q1, q1…qn represent quantities of goods and services consumed, p1, p2 … pn represent prices of goods and services. In agricultural economics, this theory is used to explain consumer purchases of unprocessed and processed foods (smoked catfish and barbecue), and other agricultural outputs.

2.6 Empirical Review

Aminu *et al.,* (2017) study was carried out to appraise the socioeconomic characteristics, market structure and profitability of fresh fish marketers as well as determinants of income generated from fresh fish marketing in Lagos State. A multi-stage sampling technique was used to select 80 fresh fish marketers in the study area and structured questionnaire administered on them. Data collected were analyzed using descriptive statistics, Gini-coefficient analysis, gross margin analysis and regression analysis. Aminu *et al.,* (2017) revealed that fresh fish market was dominated by female which accounted

for 85% of the sellers and 91% belong to the economically age group. The gross margin analysis revealed that a fresh fish marketer incurred an average total variable cost of ₦39,208.62 per month but earned average revenue of ₦63,439.45 and a gross margin of ₦24,230.83. The rate of return on investment value of ₦0.60 is an indication that fresh fish marketing is a profitable venture in the study area. A Gini-coefficient value of 0.4058 obtained in the study indicates a high level of unequal distribution of income in the fresh fish market. The result of the multiple regression analysis revealed that income from fresh fish marketing in the study area was determined by proportion of household members involved in marketing, experience of marketers, unit price of fresh fish, capital, number of sales outlets owned by marketers and cost of transportation. The study concluded that fresh fish marketing in the area was profitable. Aminu *et al.* (2017) recommended that government should provide more storage facilities to reduce wastage of leftovers in the study area. Osundare and Adedeji (2018) analysed the market performance of fresh fish marketing in Lagos state, Nigeria. It critically focused on ascertaining the market structure, determining the profitability of fish marketing and determining the marketing efficiency of fresh fish marketing in the study area. The data collected for the study were analysed using Gini coefficient, budgetary technique and shepherd efficiency model. Osundare and Adedeji (2018) revealed that there was inequality in the income distribution among the fresh fish marketers with Gini coefficient of 0.78, it further shows that fresh fish marketing is profitable with gross margin of ₦27,101.36 and that fish marketing activities among fish marketers is highly efficient

(517.5%). Thus, government should help in the provision of a soft loan to the marketers so as to promote fresh fish marketing being a profitable and efficient business.

Baba *et al.* (2015) examined the marketing of fresh fish in Ngaski Local Government Area of Kebbi State, Nigeria. With the aid of a sampling frame, proportionate random sampling technique was used to select fish marketers. Thus, a total of one hundred and ten (110) fish marketers constitute the sample size for the study. Structured questionnaire was used to collect data for the respondents. Data analysis was carried out using descriptive statistics, marketing efficiency, marketing margin and T-test statistics. Baba *et al.* (2015) revealed that about 26% of fresh fish marketers in the study area were within the age range of 20 to 30 years, fresh fish marketing in the study area is dominated by males (71.9%). Furthermore, about 83% of fresh fish marketers in the study area were married; majority (85.4%) of fresh fish marketers in the study area were literate. About 72% of fresh fish marketers in the study area had their monthly income ranging from ₦2, 000 to ₦20, 000. Baba *et al.* (2015) also revealed from the result, 38.1% of fresh fish marketers in the study area had fresh fish marketing experience of 6 to 10 years. Result further showed that marketing margin of an average fresh fish marketer was ₦190 and the percentage marketing margin was 30%. The marketing efficiency of fresh fish in the study area was 0.582 and percentage marketing efficiency was 58%. Majority (63.64%) of fresh fish marketers buy fish directly from the fishermen and retailed it to consumers. On the problems faced by fresh fish marketers in the study area, 58.2% reported that fish spoilage was the major problem of fresh fish marketing. There was significant difference

between the retail price and the river bank price of fresh fish in the study area. It could be concluded that fresh fish marketing in the study area was profitable and that fresh fish marketing in the study area was inefficient. Baba *et al.* (2015) recommended that research institute such as national centre for agricultural mechanization should develop simple, affordable and easily adoptable equipment for fresh fish storage and preservation to avoid spoilage and loss.

Olagunju, (2019) study assessed the profitability of fish marketing in Ondo State, Nigeria. Structured interviews were used to collect information from a total of 50 marketers in each selected town across four local governments using a multi-stage sampling technique. Descriptive statistics, Gini coefficient, and regression analysis were used for data analysis. The profitability analysis showed that catfish marketing is profitable with an income of ₦2,998 ($8.3) for every marketing operation. The Gini Coefficient value of 0.74 showed a high level of inequality in income distribution among the fish marketers and also a high concentration of catfish marketers in the study area. The regression analysis showed that the total kilogram of catfish sold, the price per kilogram of fish, experience in years, transportation cost of fish, and age in years are determinants of income of fish marketers and accounted for 91.2% variation in income of the fish marketers. The problems militating against fish marketing in the study area include; high rate of spoilage and high cost of transportation in the study area. Olagunju, (2019) study recommended among others that the government should try as much as possible to organize seminars,

workshops, and necessary trainings for catfish marketers on how they can reduce their losses so as to have a required and sustainable income.

Agbebi and Adetuwo, (2018) study analyzed the socio-economic factors affecting fish marketing in Igbokoda fish market, Ondo State, Nigeria. A purposive sampling technique was used in selection of the respondents. Sample size comprised eighty fish marketing households. Questionnaire was used for data collection. Results revealed that fish marketing in the area is dominated by females (88.7%). Majority (91.3%) were married with an average household size of 7 persons. Marketers earned an average income of N60, 000 per month. Majority (71.3%) do not belong to cooperative societies, 46.3% of the marketers have an average of 16.5 years of experience. Findings also revealed that fish marketing is efficient and lucrative in the area. However, constraints faced by the marketers include; inadequate storage facilities, price instability, inadequate capital, lack of access to credit, distance to market among others. Agbebi and Adetuwo, (2018) therefore recommended that effective agricultural policies and programs should address marketers' easy access to credits, infrastructural facilities such as good storage and processing facilities, electrification, good feeder roads should be provided in the area to reduce spoilage and unprofitable sales.

Osuji, Anyanwu, Oshaji, and Onyemuwa, (2017) study aimed to analyze catfish entrepreneurship in Imo State with specific objectives to identify the socio-economic characteristics of catfish entrepreneurs, estimate the cost and returns of catfish

entrepreneurs and factors influencing their returns, Multi-stage random sampling technique was used to select 120 fish farmers. Primary data was collected with the aid of well- structured questionnaire. The data obtained was analyzed using descriptive statistical technique, cost and return model, multiple regression analysis, The result of the descriptive statistical technique showed that 37.50% of the cat fish entrepreneur's fall within the age bracket of 35–45years and mean age was 43 years, 58.33% of the cat fish entrepreneurs are men while only 41.67% of them are women, 50% of cat fish entrepreneurs have attended primary education, 40% of the cat fish entrepreneurs have between 2- 5 persons in their households and the mean household size was 7 persons. The result of the cost and return showed that total variable cost was estimated as ₦2573041.25 which is about 73.32% of the total cost. The total fixed cost was ₦937226.58 which is 26.70% of the total cost incurred. The total cost was 3510267.83 and the total revenue was 4673521.25.

Nwali *et al.* (2017) study was to assess fish marketing in Iwo local Government Area of Osun State. One hundred and twenty (120) fish marketers were used for the study. Well-structured questionnaires were used for data collection while descriptive statistics such as frequency, mean and percentages were used to achieve objective (i) the socio-economic characteristics of fish marketers in the study area, (ii) the types of fish products marketed in the study area and (iii) the marketing channels of fish adopted in the study area, while inferential statistics such as gross margin analysis was used to achieve objective (iv) the profitability of fish marketing in the study area and objective (v) the major constraints to

marketing of catfish in the study area was realized with factor analysis. The regression analysis was used to achieve the hypothesis of the study, while F-test was used to test the hypothesis at 0.05% significant level. The results showed that most (53.3%) of the respondents are male and within the active average age of 38years and 36.7% of them attained secondary school level, 82.5% are wholesalers with 9 years average marketing experience. Also, results revealed positive profitability, while fresh catfish was observed to be more marketable than other fish products. The major catfish marketing distribution channel adopted in the study area was Producer-Wholesaler-Retailer-Consumer. The regression analysis showed that adjusted R^2 was 0.888 and indicated that socioeconomic characteristics have influence on the profitability of catfish marketing in the study area. Major problems faced were that of Infrastructural, Institutional and Economic problems. Nwali et al., (2017) recommends among others that provision should be made to address the respondents' infrastructural, institutional and economic problems in the study area.

CHAPTER THREE

3.0 RESEARCH METHODOLOGY

3.1 Area and Scope of Study

The study was carried out in Benin Metropolis of Edo state. Edo state is one of the 36 states of Nigeria. As of 2006 Nation population census, Edo state was ranked as the 24th populated state (3,233,366) in Nigeria. The state's capital and city, Benin-city is the fourth largest city in Nigeria. The state lies approximately between Longitude 05° 04'and 06° 43'East and Latitude of 05°44 and 07°34'North. Edo state borders Kogi State to the northeast, Anambra state to the east, Delta State to the southeast, and Ondo state to the west.

Benin-city is the capital and the largest city of Edo state, Southern Nigeria. It is the fourth largest city in Nigeria after Lagos, Kano and Ibadan. The population of Benin-city is estimated at 1,782,000 as of 2021 with the area hosting several tribal groups such as the Esan, Igbo, Yoruba, Bini, and the Owan. The area is home to Christians, Muslims, and Traditionalists while the Bini, Owan and Esan languages are spoken in the area. Benin metropolis compromises of four (4) local government areas which are Oredo, Egor, Ikpoba-Okha , Ovia North-East and Urhumnode. The study was carried out in Ikpoba-

Okha Local Government Area. It enjoys an urban status and the occupation of the people includes small and medium scale businesses, farming, transportation and others.

3.2 Sampling Procedure

A three-stage sampling procedure was used in the study. The first stage was a purposive sampling of three communities in Ikpoba-Okha Local government area.This was based on the researcher's knowledge of the communities as centers to fresh fish marketing.The second stage involved a simple random sampling of 3 markets from the list of markets in Ikpoba-Okha Local government areas. The third stage involved a simple random sampling of 8 fresh fish marketers from each of the 3 markets to make the sampling size of 72 respondents.

3.3 Data Collection

Data for the study was collected from both primary and secondary sources. Secondary data was collected from journals, online publications, print media, while primary data was collected through the use of structured questionnaire and interview schedule conducted among fresh fish marketers in the study area.

3.4 Measurement of Variables

All measure of variables was taken in their local forms. Scale and ranges used in the study are described below;

1. Sex was measured on Male and Female basis.
2. Age was measured in years
3. Marital status was measured on single, married, separated and widowed basis.
4. Educational status was measured as; No formal education, primary, secondary, and tertiary education.

5. Household size was regarded as all persons living permanently in the home and feeding together, which was categorized into: Small (1 - 4 members), Medium (4 – 6 members), Large (>6 members)
6. Income level was measured on monthly family income basis categorized into three groups (Gbigbi and Achoja, 2019).
    - Low income group (< ₦20,000)
    - Middle income group (₦20,000 - ₦120,000)
    - High income group (₦120,000)
7. The prices per fish was at the average market price, at retail level in each market. This was done to ensure the perfect market scenario.
8. Marketing channels: producer, wholesaler and retailer.
9. Challenges in a likert scale.

3.5 Analytical techniques

Data collected was analyzed using simple descriptive statistics such as frequency counts, pe5rcentages, mean and standard deviation.

Objective 1: was analyzed using descriptive statistics such as frequency counts, percentages, mean and standard deviation.

Objective 2 :was analyzed using descriptive statistics such as frequency counts, percentages, mean and standard deviation.

Objective 3: Gini-Coefficient was used to analyse the market structure of fresh fish. Gini-Coefficient was used to measure inequality in income distribution among the

respondents. It varied from zero (where every person in the society has the same income indicating absence of inequality, which is a condition of perfect equality) to unity (where one gets all the income and the rest receive nothing indicating a presence of complete inequality) (World Bank, 1992). Mathematically, it is represented by equation below:

G.C = 1 – ΣXY ……..3.1

Where GC = Gini coefficient,

X = Proportion of sellers,

Y = Cumulative proportion of total sales.

The marketing performance was analysed using descriptive statistics such as frequency counts, percentages, mean and standard deviation

Objective 4: Budgetary Technique involved the cost and return analysis. It was used to determine the profitability (objective 4) of fish marketing in the study area.

Model Specification

TR= PQ ……..……...…. …….3.2

Where

π = Total Profit (N)

TR=Total revenue (N)

Total Variable

TC= total Cost (N)

P= Unit price of output (N)

Q= Total quantity of output (N)

TVC = Total Variable Cost

TFC = Total Fixed Cost

GM = Gross Margin

ROI = Return on Investment

TC = TVC+TFC ……3.3

GM = TR-TVC …….....3.4

π = TR- TC ……3.5

ROI = GM/TVC…….3.6

Objective 5: Linkart scale was used to examine the seriousness of the challenges faced by the fish farmers.

Very Serious constraint = 4

Serious constraint = 3

Not serious constraint = 2

Not very serious constraint = 1

This will be added to get 10 divided by 4 to get 2.5 as the cut-off point. Variable with mean score of 2.5 and above will be regarded as serious while less than 2.5 will be regarded as not serious.

The Regression Model

In order to determine the factors that influence fresh fish marketing (hypothesis 1) a regression analysis was estimated.

The implicit form of the model is specified as follows

π =f(X1, X2, X3, X4, X5, X6, X7)……3.7

The model was explicitly specified as followed

π =f(β0+ β 1X1+ β2X2+ β3X3+ β4X4+ β5X5 + β6X6 + β7X7, ei) …… 3.8

π = Total Profit (N)

β_0 = Constant

β_1 -β_6 = Parameters estimated

X1= age (years)

X2= sex

X3= Education (years spent in school)

X4= Quantity traded (kg)

X5 = Cost of transportation (naira)

X6 = Selling space (shop rent)

X7 = Trade union (naira)

e= Error term

CHAPTER FOUR
RESULTS AND DISCUSSION

Table 4.1 revealed the socioeconomic characteristics of fresh fish marketers.

4.1.1 Sex of Marketers

The results showed that majority (73.6%) of the marketers were female while 26.4% of the marketers were male.

The high percentage of female marketers in fresh fish marketing in Ikpoba Okha Local Government Area of Edo State, Nigeria, may be attributed to traditional gender roles where women often engage in small-scale trading activities. Additionally, it might reflect a trend of women dominating sectors that require meticulous attention to detail and marketing finesse, qualities often associated with successful fish marketing (Aminu *et al.,* 2017). Furthermore, cultural factors might play a role, with women being more actively involved in community marketplaces and having established networks within the industry. Economic opportunities and flexibility in the fresh fish trade could also attract women seeking income-generating activities that accommodate their domestic responsibilities (Aminu *et al.,* 2017). Moreover, historical precedence might have led to the perpetuation of women's involvement in fish marketing, with familial or community traditions shaping career choices. Lastly, societal expectations and norms regarding women's roles in the economy might influence their participation in the fresh fish market, steering them towards sectors perceived as suitable or traditional for women. The results in this study

agrees with the work of Aminu *et al.,* (2017) which revealed that fresh fish market was dominated by female which accounted for 85% of the sellers. However, the findings of this results contradicts Baba *et al.,* (2015) who revealed that fresh fish marketing is dominated by males (71.9%).

4.1.2 Age of the Marketers

The age distribution of the fresh fish marketers is presented in Table 4.1. The results indicated that majority (45.21%) of the Marketers were between 35-44 years old, 20.55% of the marketers were between 25-34 years, 23.29% of the marketers were between 45-54 years and 10.96% of the marketers were between 55 - 65 years old. The mean results showed that fresh fish marketer in the study area were 42 years old.

The highest percentage of fresh fish marketers falling within the age bracket of 35-44 years old suggests a demographic structure in a stage of life where they are likely to be actively engaged in economic activities. This age group typically represents individuals with a significant level of experience and maturity, potentially indicating that they have been involved in the fish marketing industry for a considerable period, gaining expertise and establishing networks (Osundare and Adedeji 2018). Additionally, this age may be in a phase where they have established themselves in their careers and are seeking opportunities for growth and stability, with fresh fish marketing offering a viable avenue for income generation. Moreover, individuals within this age range may have reached a stage where they have acquired sufficient capital or resources to invest in and sustain a

business in the fresh fish market (Osundare and Adedeji 2018). Furthermore, societal and cultural factors might influence the prevalence of this age group in the industry, with traditions or family involvement shaping career choices and fostering continuity within the market. Lastly, economic conditions and opportunities within the local area may favor individuals in this age bracket, providing them with the means and motivation to participate actively in the fresh fish marketing sector. The results , in this study however does not align with Baba *et al.,* (2015) who revealed that about 26% of fresh fish marketers in the study area were within the age range of 20 to 30 years

4.1.3 Marital status of Marketers

The results indicated that majority (77.8%) of the marketers were married, 15.3% of the marketers were single, 2.8% of the marketers were divorced and widowed while widower constituted 1.4%.

The highest percentage of fresh fish marketers being married suggests that marital status may influence involvement in the industry, with married individuals potentially motivated by the need to support their families financially. Moreover, marriage often signifies a level of stability and responsibility, driving individuals to seek steady sources of income such as fresh fish marketing (Agbebi and Adetuwo, 2018). Additionally, the support system provided by a spouse may enable married individuals to take on the challenges and risks associated with running a business in the fish market. Furthermore, cultural norms and expectations within the community may prioritize family livelihoods,

prompting married individuals to actively participate in economic activities like fish marketing to sustain their households. Moreover, married individuals may leverage their familial networks and resources to establish and expand their presence in the market, benefiting from shared responsibilities and collaborative efforts. Lastly, the desire to secure a stable future for their families could motivate married individuals to invest time and effort into building successful careers in the fresh fish industry. The study of Baba *et al.,* (2015) revealed that about 83% of fresh fish marketers in the study area they surveyed were married. The results agrees with Agbebi and Adetuwo, (2018) who revealed that majority (91.3%) of the marketers were married.

4.1.4 Educational Level of Marketers

The educational level of respondents is shown in Table 4.1. The results showed that majority (30.6%) of the marketers acquired Primary School living certificate, 20.8% of the marketers had no formal education, 11.1% of the marketers acquired junior secondary level of education, 12.5% of the marketers completed senior secondary level of education, 15.3% of the marketers acquired OND/NCE and 2.8% of the marketers acquired post graduate level of education .

The highest percentage of fresh fish marketers possessing a Primary School Leaving Certificate suggests that the industry may not necessarily require formal education for participation, but rather practical skills and experience (Johnson *et al.,* 2020). Many individuals in this category may have grown up in the trade, learning the intricacies of

fish marketing through hands-on experience within their communities. Additionally, the low barrier to entry in the fresh fish market, coupled with the availability of training within the industry itself, may attract individuals with limited formal education but ample practical knowledge. Moreover, economic constraints or family responsibilities may have limited opportunities for higher education, leading individuals to pursue careers in sectors like fresh fish marketing that value practical expertise over formal qualifications (Johnson *et al.,* 2020). Furthermore, the nature of the business, which often involves interpersonal skills and market knowledge, may favor individuals who have honed their abilities through real-world experiences rather than formal schooling. Lastly, cultural factors may also play a role, with traditional methods of learning and apprenticeship being valued over formal education within the context of the fish marketing industry. This results however does not align with the findings of Baba *et al.,* (2015) who revealed that majority (85.4%) of fresh fish marketers were literate.

4.1.5 Household Size of Marketers

The household size is shown in Table 4.1. The results indicated that majority of the marketers have 2 to 6 persons in the household while 23.29% of the marketers have 7 to 11 persons within the household. The mean household size results showed that there were 5 persons within households in the study area.

The majority of marketers having 2 to 6 persons in their household suggests a typical family size that aligns with the economic dynamics of the fresh fish marketing industry.

Smaller households may indicate a manageable scale of expenses, allowing individuals to allocate resources towards their businesses with relative ease (Osuji *et al*., 2017). Moreover, with fewer dependents, individuals may have more flexibility to invest time and effort into their careers in the fish market, potentially leading to greater success and stability. Additionally, smaller household sizes may correlate with higher levels of disposable income, enabling families to afford fresh fish products and contributing to the demand within the local market. Furthermore, smaller households may also signify a demography with greater mobility and adaptability, traits advantageous in the fast-paced and competitive environment of the fresh fish industry (Osuji *et al*., 2017). Lastly, cultural norms or economic factors within the community may influence household size, with families structuring their households in a way that optimizes their ability to engage in economic activities such as fish marketing. Agbebi and Adetuwo, (2018) revealed that majority of fish farmers had average household size of 7 persons.

4.1.6 Marketing Experience of Marketers

The results indicated that 84.93% of marketers had marketing experience of 2 to 11 years, 13.70% of marketers had 12 – 21 years marketing experience and 1.37% of marketers had 22 – 31 years of marketing experience. The mean marketing experience of marketers results showed that the marketers in the study area have spent 7 years in marketing of fresh fish.

The high percentage of marketers with marketing experience ranging from 2 to 11 years suggests a demography deeply rooted in the business of the fresh fish industry, yet still within a range that allows for continued adaptation and growth. This span of experience likely indicates a method that has weathered various market fluctuations and learned to navigate the challenges of the industry while honing their skills over time (Olagunju, 2019). Additionally, individuals with this level of experience may have established networks and relationships within the market, enhancing their ability to conduct business effectively and maintain a steady clientele. Moreover, the prevalence of this range in years of experience could signify a pool of talent within the community that serves as a valuable resource for knowledge sharing and mentorship, contributing to the sustainability of the fresh fish marketing sector (Olagunju, 2019). Furthermore, the relatively moderate duration of experience may suggest a dynamic industry where new entrants are continually joining the ranks, injecting fresh perspectives and ideas into the marketplace. Lastly, the consistency in marketing experience within this range may reflect the stability and resilience of the fresh fish industry in the local area, fostering longevity and continuity among its practitioners. Baba *et al.,* (2015) also revealed from their result, 38.1% of fresh fish marketers in the study area had fresh fish marketing experience of 6 to 10 years.

4.1.7 Membership of cooperative society and mode of operation

The results indicated that majority (55.6%) of the marketers are not member of cooperative society while 44.4% of the marketers are member of cooperative society. The results showed that 77.8% of the marketers are full time marketer while 22.2% of the marketers are part time marketers.

The highest percentage of marketers not being members of a cooperative society suggests a potential gap in collaborative efforts and resource-sharing within the fresh fish marketing community. Without the support and structure provided by cooperative societies, individual marketers may face challenges accessing capital, information, and market opportunities that could otherwise enhance their businesses. Furthermore, the predominance of non-membership may indicate a lack of awareness or perceived benefits among marketers, hindering the development of collective initiatives aimed at addressing common issues or pursuing shared goals. Additionally, the absence of cooperative membership may reflect a preference among marketers for independent operation, driven by factors such as autonomy, flexibility, or distrust of collective enterprises. Moreover, the local cooperative landscape and its effectiveness in supporting fresh fish marketers could influence individuals' decisions regarding membership, with perceived limitations or inefficiencies deterring participation. Lastly, the prevalence of full-time marketers among both cooperative and non-cooperative members may highlight the importance of fresh fish marketing as a primary source of livelihood within the local economy, shaping the modes of operation adopted by individuals based on their commitment to the trade.

4.1.8 Marketer's Source of income

The results showed that 5.6% of marketers source income from bank, 29.2% of marketers source from Cooperative society, 11.1% of marketers source from government, 27.8% of marketers from salary, 23.6% of marketers from fish selling and 2.8% of the marketers from family contribution.

The highest percentage of marketers deriving income from cooperative societies suggests a reliance on collective efforts and community support within the fresh fish marketing industry. Cooperative societies are likely to provide access to pooled resources, market information, and financial assistance, enabling members to strengthen their businesses and mitigate risks. Additionally, cooperative membership may offer a sense of belonging and solidarity among marketers, fostering collaboration and support to overcome the challenges of the industry. Furthermore, the prevalence of income from cooperative societies reflects the importance of cooperative structures in empowering individuals economically and promoting sustainable livelihoods within the local community (Ogbe *et al*., 2018). Moreover, the diverse sources of income, including salary and government support, alongside cooperative earnings, underscore the multifaceted nature of livelihood strategies adopted by fresh fish marketers, highlighting their resilience and adaptability in pursuit of financial stability. Lastly, the contribution from family members signifies the significance of family as a supplementary source of income, emphasizing the interconnectedness of households in supporting each other's economic endeavors within the community (Ogbe *et al*., 2018).

4.1.9 Contact with Extension Agent and Number of times of Extension Agent visit

The results showed that 75.0% of the marketers had no contact with extension agent while 25.0% of the marketers had contact with extension agent. The results also showed that 1.4% of the total marketers reported that extension agent visited every week, 6.9% of extension agent visits four times in a week, 8.3% of the 25% of extension agent visits thrice a week, 4.2% of extension agent visits twice a week, 1.4% of extension agent Once in a while, Once a week and Once in two weeks while 75.0% of marketers reported no visitation.

The highest percentage of marketers reporting no contact with extension agents indicates a potential gap in outreach and support services within the fresh fish marketing community. Without regular interaction with extension agents, marketers may lack access to valuable information, training, and resources that could enhance their productivity and competitiveness in the market (Osuji *et al.,* 2017). Additionally, the limited engagement with extension services may suggest a disconnect between the needs of fresh fish marketers and the outreach efforts of extension agents, highlighting the importance of improving communication channels and understanding the specific challenges faced by the marketers in the study area. Furthermore, the absence of contact with extension agents could hinder the dissemination of best practices and technological innovations that could benefit fresh fish marketers in improving their operations and product quality (Osuji *et al.,* 2017). Moreover, the low frequency of extension agent visitation, with the majority reporting no visits, underscores the need for more proactive and consistent

engagement from extension services to address the diverse needs of the fresh fish marketing sector. Lastly, enhancing collaboration between extension agents and local stakeholders could foster greater trust and participation among marketers, leading to more effective support mechanisms and sustainable development within the industry. Akinrotimi *et al.,* (2019) measured extension contact in terms of, frequency of visits of the extension agent to the farmer, vice-versa. Such visits according to them would enlighten the farmers and create a greater awareness for the potential gains of improved agricultural technology.

4.1.10 Marketing Activities

The results showed that majority of the marketers does not buy fish directly from fish farmer while 47.2% of the marketers buy directly from fish farmers. The results showed that 73.6% of the marketers buy from wholesalers, 25.0% of the marketers buy from larger retailer, 26.4% of the marketers buy from someone who sells in small quantities and 19.4% of marketers buy from fish farmer who sells fishes. The scale of operation showed that 76.4% of marketers were retailers and 23.6% of marketers were wholesaler.

The majority of marketers not buying fish directly from fish farmers suggests a potential reliance on intermediary channels for sourcing their fresh fish supplies. This could indicate a preference for convenience or a lack of direct access to fish farms, leading marketers to procure their stock from wholesalers or larger retailers instead. Additionally, the prevalence of buying from wholesalers may reflect the economies of scale and logistical advantages associated with purchasing in bulk, enabling retailers to meet the

demand of their customers more efficiently. Moreover, the scale of operation predominantly comprising retailers highlights the significance of local marketplaces in distributing fresh fish to consumers, underscoring the role of small-scale retailers as key intermediaries within the supply chain. Furthermore, the limited engagement with direct purchasing from fish farmers may suggest opportunities for enhancing direct marketing initiatives and fostering closer relationships between producers and marketers to streamline the distribution process and ensure product quality. Lastly, understanding the distribution dynamics and preferences of fresh fish marketers can inform targeted interventions and support programs aimed at optimizing the efficiency and sustainability of the marketing activities within the local area.

Table 4.1 Socioeconomic characteristics of fresh fish marketers

Variables	Frequency	Percent	Mean
Sex			
Male	19	26.4	
Female	53	73.6	
Total	72	100.0	
Age (years)			
25-34	15	20.55	
35-44	33	45.21	42
45-54	17	23.29	
55-65	8	10.96	
Total	73	100.0	
Marital status			
Single	11	15.3	
Married	56	77.8	
Divorced	2	2.8	
Widow	2	2.8	
Widower	1	1.4	
Total	72	100.0	
Educational level			
No formal education	15	20.8	
Primary School living certificate	22	30.6	
Junior Secondary school	8	11.1	
Senior Secondary school	9	12.5	
OND/NCE	11	15.3	
HND/B.Sc	5	6.9	
Post graduate	2	2.8	
Total	72	100.0	
Household size			
2-6	56	76.71	5
7-11	17	23.29	
Grand Total	73	100.00	
Marketing experience (Years)			
2-11	62	84.93%	
12-21	10	13.70%	7
22-31	1	1.37%	
Total	73	100.00	
Member of a co-operative society			
Yes	32	44.4	
No	40	55.6	
Total	72	100.0	
Mode of Operation			
Full time marketer	56	77.8	
Part time marketer	16	22.2	
Total	72	100.0	
Source of income			
Banks	4	5.6	
Cooperative society	21	29.2	

Government	8	11.1
Salary	20	27.8
Fish selling	17	23.6
Family contribution	2	2.8
Total	72	100.0
Contact with Ext agent		
Yes	18	25.0
No	54	75.0
Total	72	100.0
No of times Ext agent visits		
None	54	75.0
Once in a while	1	1.4
Once a week	1	1.4
Once in two weeks	1	1.4
Twice a week	3	4.2
Thrice a week	6	8.3
Four times in a week	5	6.9
Every week	1	1.4
Total	72	100.0
Buying directly frm a fish farmer		
Yes	34	47.2
No	38	52.8
Total	72	100.0
Buying frm a wholesaler		
Yes	53	73.6
No	19	26.4
Total	72	100.0
Buying from a large retailer		
Yes	18	25.0
No	54	75.0
Total	72	100.0
Buying frm someone who sells in small quantities		
Yes	19	26.4
No	53	73.6
Total	72	100.0
A fish farmer who sells fishes		
Yes	14	19.4
No	58	80.6
Total	72	100.0
Scale of operation		
Wholesaler	17	23.6
Retailer	55	76.4
Total	72	100.0

Source: Field survey, 2024

4.2 Market structure and performance

The results of the Gini-coefficient is presented in Table 4.2.The Gini-coefficient of 0.47 indicated a high level of imperfect market structure in the study area. This results agrees with Aminu *et al.,* (2017) who revealed that a Gini-coefficient value of 0.4058 in their study indicates a high level of imperfect market structure in the fresh fish market. Osundare and Adedeji (2018) revealed that there was imperfect market structure among fresh fish marketers with Gini coefficient of 0.78. However Olagunju, (2019) showed that Gini Coefficient value of 0.74 showed a high level of market structure among fish marketers and also a high concentration of catfish marketers) which is contraries to my own findings.

The marketing performance of fresh fish marketers is presented in Table 4.2,when the sales income is less than or equal to 10,000.00 ,the marketing performance indicates 16.63%,while sales income from 10001.00 - 12000.00 constituted 14.19% marketing performance, while sales income from 12001.00 - 14000.00 iindicates 8.99% marketing performances,such that when the sales income is 14001.00-16000,it constitutes 10.533% marketing performance, when the sales income is 16001-18000 it indicates 12.52% marketing performance , when the sales income is 18001-20000 ,it indicates 17.60% marketing performance and lastly when the sales income is 20001 and above, it indicates 19.52% marketing performance. These result is small than the result of Osundare and Adedeji (2018) who revealed that there was inequality in the income distribution among the fresh fish marketers and shows that fish marketing activities among fish marketers is highly efficient (517.5%).

Table 4.2 Market structure and performance

Sales income	No of sellers	Proportion of sellers (Pi)	Cumm. Proportion	Total yearly sales	Proportion of total sales (Xi)	Cumm. Prop. of total sales (Ci)	(PiCi)	Xi^2	Marketing performance (%)
<= 10000.00	14	0.1944	0.1944	259	0.166	0.166	0.023	2.77E-02	16.63
10001.00 - 12000.00	10	0.1389	0.3333	221	0.142	0.308	0.055	2.01E-02	14.19
12001.00 - 14000.00	10	0.1389	0.4722	140	0.09	0.398	0.048	8.08E-03	8.99
14001.00-16000	8	0.1111	0.5833	164	0.105	0.503	0.07	1.11E-02	10.533
16001-18000	10	0.1389	0.7222	195	0.125	0.628	0.1	1.56E-02	12.52
18001-20000	9	0.125	0.8472	274	0.176	0.804	0.113	3.09E-02	17.60
20001 and above	11	0.1528	1	304	0.195	0.999	0.12	3.82E-02	19.52
Total number of marketers	72			1557			0.530		

Source:Computed from field survey, 2024 GC = 1 – (∑PiCi) = 1- 0.530 = 0.47

4.3 Marketing margin of fresh fish (₦) per year

Table 4.3 revealed marketing margin of fresh fish per year. The result showed that transportation cost (2547.37) constituted 10.7%, packaging cost (₦6827.27) 28.7%, Labour cost (₦1225) 5.2%, Market dues (₦5250) 22.1%, Cost of nylon (₦3000) 12.6%, Shop rent and cost of knife (₦2464) constituted 10.4%. The total margin was ₦178519.1781 and marketing margin was ₦154741.54.

The total margin of ₦178519.1781 and marketing margin of ₦154741.54 signify the financial dynamics within the fresh fish marketing sector in Ikpoba Okha Local Government Area. This margin reflects the balance between revenue generated from selling fresh fish and the various costs incurred throughout the marketing process. While the total margin represents the gross earnings before accounting for expenses, the marketing margin indicates the net profit remaining after deducting operational costs. The disparity between the total and marketing margins underscores the significance of overhead expenses such as transportation, packaging, labor, market dues, nylon costs, and shop rent, which collectively impact the profitability of fresh fish marketing activities. Additionally, the difference between the total and marketing margins highlights the need for marketers to efficiently manage costs and optimize revenue streams to maximize profitability and ensure sustainability in the local fish market.

Aminu *et al.,* (2017) concluded that fresh fish marketing was profitable and recommended that government should provide more storage facilities to reduce wastage of leftovers in the study area. Osundare and Adedeji (2018) revealed that fresh fish marketing is profitable and that fish marketing activities among fish marketers is highly efficient. Baba *et al.,* (2015) also revealed that marketing margin of an average fresh fish marketer was ₦190, the percentage marketing

margin was 30% and the marketing efficiency of fresh fish was 0.582 and percentage marketing efficiency was 58%.

Table 4.3 Marketing margin of fresh fish (₦) per year

Items	Mean	percentage
Transportation cost	2547.37	10.7
Packaging cost	6827.27	28.7
Labour cost	1225	5.2
Market dues	5250	22.1
Cost of nylon	3000	12.6
Shop rent	2464	10.4
Cost of knife	2464	10.4
Total marketing cost	23777.64	
Tota margin	178519.1781	
Purchase price	1520.00	
Sale price	2081.92	
Marketing margin	154741.54	

Source: Computed From Field Survey, 2024

4.4 Effect of socio-economic factors on fresh fish marketing

Table 4.4 revealed the effect of socio-economic factors in fresh fish marketing. The results showed that sex (t = 0.03), age (t = -0.12), marital status (t = -1.22), educational level (t = -0.60), household size (t = 1.68), member of cooperative society (t = -0.78), mode of operation (t = -1.11) and source of income (t = 0.77) has no significant influence on fresh fish marketing. The results showed that there was a negative and significant effect of marketing experience on fresh fish marketing at 10% level of probability. The results also showed that contact with extension agent has a positive and significant influence on fresh fish marketing in the study area.

The negative and significant relationship between marketing experience and fresh fish marketing at a 10% level of probability suggests that as marketers gain more experience, they may encounter challenges or constraints that hinder their effectiveness or efficiency in the industry. This could stem from factors such as market saturation, increased competition, or changing consumer preferences, which may require adaptation and innovation to remain competitive (Olagunju, 2019). Conversely, the positive and significant influence of contact with extension agents on fresh fish marketing indicates the importance of access to information, training, and support services provided by extension agencies in enhancing marketing performance (Baba *et al.,* 2015). Such interactions likely facilitate knowledge dissemination, skill development, and capacity building among marketers, empowering them to overcome barriers and capitalize on opportunities within the local fish market. Aminu *et al.,* (2017) revealed that income from fresh fish marketing determined by proportion of household members involved in marketing, experience of marketers, unit price of fresh fish, capital, number of sales outlets owned by marketers and cost of transportation.

Table 4.4 Effects of socio-economic factors on fresh fish marketing

	Coefficients	*Standard Error*	*t Stat*	*P-value*
Intercept	174093.67	186588.64	0.93	0.35
Sex	1686.22	52763.48	0.03	0.97
Age	-381.66	3229.13	-0.12	0.91
Marital status	-48373.12	39594.39	-1.22	0.23
Educational level	-8157.43	13486.88	-0.60	0.55
Household size	20612.57	12267.63	1.68	0.10
Marketing exp	-11397.48	5690.10	-2.00	0.05*
Member of a co-perative society	-42476.44	54383.57	-0.78	0.44
Mode of Operation	-71821.93	64532.13	-1.11	0.27
Source of income	13527.97	17636.80	0.77	0.45
Contact with Ext agent	121646.45	59572.16	2.04	0.05*
R Square	0.190725862	* significant at 10%		
Adjusted R Square	0.060197775			

Source:computed from field survey 2024

4.5 Challenges confronting fresh fish marketing

The challenges confronting fresh fish marketing is shown in Table 4.5. The results showed that Inadequate finance was the foremost challenges confronting fresh fish marketing, High cost of transportation second(2^{nd}), Price fluctuations third(3^{rd}),Inadequate marketing experience fourth(4^{th}), Acquiring space (land) or processing of catfish fifth(5^{th}),Seasonality of consumption sixth (6^{th}),Small marketing size seventh (7^{th}),Inadequate equipment and machinery Eighth (8^{th}),Inadequate technical support from government/local authorities ninth (9^{th}),Environmental disaster tenth(10^{th}),High level of price of catfish from producer eleventh (11^{th}),and Inadequate numbers of off taker ranked twelfth (12^{th}),challenges confronting fresh fish marketing in the study area.

The ranking of Inadequate finance as the primary challenge confronting fresh fish marketing underscores the critical role of access to capital in sustaining and expanding business operations within the industry. Insufficient funds may impede marketers' ability to invest in essential resources such as inventory, equipment, and marketing initiatives, limiting their capacity to meet demand and compete effectively in the market. Moreover, the high cost of transportation ranks second, highlighting the logistical hurdles inherent in distributing fresh fish from production centers to consumer markets. These transportation expenses can significantly erode profit margins and pose barriers to accessing distant or lucrative markets, constraining the growth potential of fresh fish businesses. Furthermore, price fluctuations emerge as the third challenge, reflecting the inherent volatility in fish prices influenced by factors such as seasonality, weather conditions, and market demand. Such fluctuations can disrupt revenue projections, undermine profitability, and

exacerbate financial uncertainties for marketers, necessitating adaptive strategies to mitigate risks and maintain competitiveness in the face of market dynamics.

This study result is similar to Agbebi and Adetuwo, (2018) who revealed that constraints faced by the marketers include; inadequate storage facilities, price instability, inadequate capital, lack of access to credit, distance to market among others.

Table 4.5 Challenges confronting fresh fish marketing

Constraints	Mean	Std. Dev	Rank
Inadequate finance	2.40	1.15	1st
High cost of transportation	2.30	1.05	2nd
Price fluctuations	2.25	1.15	3rd
Inadequate marketing experience	2.20	1.10	4th
Acquiring space (land) for processing of catfish	2.19	1.18	5th
Seasonality of consumption	2.18	1.08	6th
Small marketing size	2.15	1.20	7th
Inadequate equipment and machinery	2.14	0.90	8th
Inadequate technical support from government/local authorities	2.13	1.02	9th
Environmental disaster	2.12	1.10	10th
High price of catfish from producer	1.87	0.79	11th
Low numbers of off taker	1.39	0.76	12th

Source; Computed from Field survey, 2024

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Summary

This study was carried out to analyse fresh fish marketing in Benin Metropolis. A purposive and random sampling technique was used to select 72 fresh fish marketers. Data for the study were collected through the use of well-structured questionnaire on fresh fish marketers in the study area. Mean, frequency, percentage, regression, gini coefficient and market margin were used to analyse data.

The results showed that majority (73.6%) of the marketers were female and 42 years old.

The results also indicated that majority (77.8%) of the marketers were married, with Primary School living certificate and 5 persons within household. The results indicated that 84.93% of the marketers had marketing experience of 2 to 11 years, majority (55.6%) of marketers are not member of cooperative society and 77.8% are full time marketer. The total margin was 178519.1781 and marketing margin was ₦154741.54.

The results showed that there was a negative and significant relationship between marketing experience and fresh fish marketing at 10% level of probability. The results also showed that contact with extension agent has a positive and significant influence on fresh fish marketing in the study area. The challenges confronting fresh fish marketing is shown in Table 4.5. The results showed that Inadequate finance 1st challenges

confronting fresh fish marketing, High cost of transportation 2nd, Price fluctuations 3rd, Inadequate marketing experience 4th,

5.2 Conclusion

Based on the findings in this study, it's been concluded that the study area is dominated by female marketers with Primary School living certificate and 5 persons within household. Fresh fish marketing has good structure, performance and market margin. Marketing experience and extension agent services influence fresh fish marketing

5.3 Recommendations

Based on the findings from the constraint in this study, the following recommendations were made:

1. **Inadequate finance was a major constraint. Government should enhance financial access:** Implement initiatives to improve access to finance for fresh fish marketers, such as providing microfinance options, grants, or low-interest loans tailored to their needs.
2. **Strengthen Extension Services:** Expand and strengthen extension services for fresh fish marketers by increasing outreach efforts, providing training programs, and disseminating relevant information and best practices.
3. **Mitigate Transportation Costs:** Explore strategies to mitigate the high cost of transportation by improving infrastructure, facilitating bulk transportation

arrangements, and incentivizing collective transportation solutions among fish marketers.

4. **Manage Price Fluctuations:** Develop risk management strategies to help fresh fish marketers mitigate the impact of price fluctuations, such as establishing price stabilization mechanisms, diversifying product offerings, and implementing forward contracts or hedging strategies.
5. **Build Marketing Expertise:** Invest in capacity building and skills development programs to address the lack of marketing experience among fresh fish marketers. Offer training workshops, mentorship programs, and networking opportunities to help marketers enhance their marketing skills, develop effective promotional strategies, and differentiate their products in the marketplace.

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RESEARCH QUESTIONNAIRE
DEPARTMENT OF AGRICULTURAL ECONOMICS
AND EXTENSION SERVICES
FACULTY OF AGRICULTURE
UNIVERSITY OF BENIN

Dear Sir/Madam

I am a final year student of the above named Department. The purpose of this study is to assess **ANALYSIS OF FRESH FISH MARKETING IN BENIN METROPOLIS EDO STATE.** Your response will be used purely for research purpose and will be treated as confidential.

Thanks for your anticipated cooperation.

SECTION A: SOCIO-ECONOMIC CHARACTERISTICS OF RESPONDENTS

Instruction: please tick (√) where necessary

1. Sex: Male [ ] Female [ ]
2. Age _____
3. Marital Status: (a) Single [ ] (b) Married [ ] (c) Divorced [ ] (d) Widow [ ] (e) Widower [ ]
4. Educational Level: (a) No formal education [ ] (b) Primary School living certificate [ ] (c) Junior Secondary school [ ] (d) Senior Secondary school [ ] (e) OND/NCE [ ] (f) HND/B.Sc. [ ] post graduate [ ]
5. Household Size: _____
6. Marketing experience: _____years
7. Are you a Member of a co-operative society/union: Yes [ ] No [ ]
8. Mode of operation: Full time marketer [ ] Part time marketer
9. Source of income: i. Banks [ ] iii. Cooperative society [ ] iv. Government [ ] v. Salary [ ] vi. Others (specify)…..
10. Do you have contact with extension agent? Yes ( ) No ( )
11. If yes, how many times does the extension agent visit you? _____

SECTION B: FRESH FISH MARKETING CHANNELS

12. Are you buying directly from a fish farmer? Yes [ ] No [ ]
13. Are you buying from a wholesaler? Yes [ ] No [ ]
14. Are you buying from a large retailer? Yes [ ] No [ ]
15. Are you buying from someone who sells in small quantities? Yes [ ] No [ ]
16. Are you a fish farmer who also sells fishes? Yes [ ] No [ ]
17. What is your scale of operation: Wholesaler [ ] Retailer [ ]
18. Identify the channels familiar to you

a. Producer –consumers
b. Producer –retailer----consumers
c. Producer –wholesaler----retailer----consumers
d. Producer----Hotels/Restaurants-----consumers
e. Producer ----supermarkets----consumers

SECTION C: STRUCTURE OF FRESH FISH MARKETING

1. Fresh fish similarity: similar and differentiated ( ) similar and homogenous ( )
2. Number of buyers of catfish: many buyers ( ) few buyers ( )
3. Number of sellers of fish: many sellers ( ) few sellers ( )
4. Who determine the price of fish? Buyers ( ) sellers ( )
5. Market days: every day ( ) every four days ( ) every week ( )

SECTION C: COST AND RETURN (PROFITABILITY)

1. How many fishes did you buy ₦_____
2. How much per one fish ₦ _____
3. Total amount sold ₦_____

Please fill in the table below

Variable Inputs	Amount (₦)
Transportation cost	
Packaging cost	
Labour cost	
Market dues	
Cost of nylon	
Fixed cost	
Shop rent	
Cost of knife	

SECTION D: CHALLENGES CONFRONTING FRESH FISH MARKETING

Problem	Not a problem	Minor problem	Some problem	Major problem
1. Inadequate finance				
2. High cost of transportation				
3. Price fluctuation				
4. Inadequate marketing experience				
5. Acquiring space(land) for processing catfish.				
6. Seasonality of consumption				
7. Small marketing size.				
8. Inadequate equipment and machinery				
9. Inadequate technical support from government /local authorities				
10. Environmental disaster				
11. High price of catfish from producer				
12. low numbers of off taker				