KWARA STATE UNIVERSITY, MALETE, NIGERIA

SCHOOL OF POSTGRADUATE STUDIES (SPGS)

ANALYSIS OF PRICING STRATEGIES IN CATFISH FARMING IN KWARA STATE.

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B.Agric (Agricultural Economics)

18/27/MAE002

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A MSC THESIS SUBMITTED

BY

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B.Agric (Agricultural Economics)

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DEPARTMENT OF AGRICULTURAL ECONOMICS AND EXTENSION SERVICES,

FACULTY OF AGRICULTURE,

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NIGERIA.

February, 2021

DECLARATION

I hereby declare that this thesis titled **ANALYSIS OF PRICING STRATEGIES IN CATFISH FARMING IN KWARA STATE** is a record of my research. It has neither been presented nor accepted in any previous application for higher degree.

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APPROVAL PAGE

This is to certify that this thesis by Airat Alaba Jimoh has been read and approved as meeting the requirements of the Department of Agricultural Economics and Extension Services for the award of the degree of Masters M.Sc. in Agricultural Economics

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DEDICATION.

This research work is dedicated to Almighty Allah for seeing me through the course of this study.

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All glory belongs to Almighty Allah for all His sufficient love and protection over me all through my journey in this school and the successful completion of my post-graduate programme.

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Table of Contents

LIST OF TABLES.

LIST OF FIGURES

Abstract.

*This study assessed pricing strategies in catfish farming in Kwara state. The specific objectives of the study were to, describe the structure of catfish market, estimate the profitability of catfish farming, determine the efficiency of catfish farmers, identify the common types of price discounts and discount pricing strategies adopted by farmers, , determine the factors influencing catfish production among farmers and identify the constraints hindering price discounting among catfish farmers in the study area. A two stage sampling technique was employed to sample 212 respondents for this study. Analysis of data was carried out using Herfindahl index, , percentage marketing margin, marketing efficiency and linear multiple regression were used to determine the structure, profitability, efficiency and factors influencing production among catfish farmers in Kwara state respectively while descriptive statistics, to determine the common types of price discounts, discount pricing strategies adopted by catfish marketers and the constraints hindering discount pricing in catfish marketing.. The results revealed that majority (95.8%) of the respondents were male and were moderately aged people (31-60) with an average household size of 5 persons. Herfindahl index value of 0.006 showed a highly competitive and non-concentrated catfish marketing industry. Marketing margin of28.62% obtained indicated that catfish farming in Kwara state was a profitable investment. The marketing efficiency (140.09%) was greater than 100%. Indicating an efficient marketing activities. Quantity discount was mostly (44.3%) used price discount by catfish farmers, while cash discount was least used. Furthermore, offering discount to new customer was mostly (79%) used discount pricing strategy by the catfish farmers, while offering free shipping to customers (7.1%) was the least frequently used strategy. The multiple regression analysis results showed that marketing service (*0.00069*), price discount (*0.00004*), marketing experience (*0.00001*), and distance of market to the nearest city (*0.00270*) were the important variables explaining catfish production among farmers in the study area. The most significant constraints hindering discount pricing strategies in catfish farming was the cost of production with mean value of 4.1368 and was ranked first. The constraints that posed least effect on discount pricing by catfish farmer are competition, demand and economic condition with mean values of 3.0991, 3.1509 and 3.1651 respectively. The study suggests that catfish farmers should adopt quantity discount and offering discount to new customers so as to reduce the rate of spoilage which in turn have long term effect on marketing margin. farmers are also encouraged to pool their resources together through the various associations to provide basic infrastructures in order to reduce the cost of production for increased marketing margin.*

CHAPTER ONE

INTRODUCTION

1.1 Background of Study

Fish is economically, socially and culturally important as a global dietary aspect of sustainable food security (Odebiyi, George, Odulate, Agbonlahor & Olaoye 2013). It provides more than 40% of animal protein consumed by average Nigerian, its contribution to the economy in terms of GDP and its income generation capacity cannot be overemphasized (Agbebi, 2010). Nigeria produces a large quantity of catfish but still relies heavily on importation to meet the local demand, indicating that a gap still exists in the demand and supply of catfish in Nigeria. According to Dauda et al (2016) Nigeria requires about 2.66 million mt of fish annually to satisfy the dietary requirement of its citizens. With a paltry domestic production of about 780,000 tonnes, fish demand-supply gap stands at a staggering 1.8 million tonnes (Oyinbo & Rekwot, 2013). This is attributed to poor trading and marketing systems.

Marketing is a process that involves the identification of wants and needs of consumers and the supply of goods 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. In marketing various agencies such as the intermediaries (middlemen) of different levels participate in the marketing activities. These agencies could be facilitators, brokers, transporters, wholesalers and retailers who perform different functions as the products move along the marketing chain from one point to another. Coughlan, Anderson, Stein and El-Ansery (2001) stated that the wholesalers and retailers improve marketing efficiency tremendously by reducing distribution cost. The

wholesalers and retailer purchase large quantities of goods from the manufacturers but sell only one or few at a time to different customers. They are also intermediaries who reduce the number of transactions by creating assortment and providing a wide range of products in one location so that customers can purchase different items from one seller at a time.

The marketing of catfish is very delicate if quality and nutritional value are to be maintained due to its short shelf life. Therefore, efficiency in marketing system is essential for growth and development of the fishery subsector. Marketing efficiency involves the movement of products from the producers to the consumers at the lowest cost consistent with the provision of the services of consumers' desire. Availability of fish to consumers at the right time and in the right place requires an effective marketing system (Department of Fisheries, 2012).

Fish marketing is beyond advertising, selling or making fish available to consumers. It is a key management that brings success to the business. Success of fish marketing largely depends on how efficiently the products and services are delivered to consumers and how differently do the consumers perceive the difference in delivery in comparison to the competitors. When catfish markets are efficient it will make it easier for marketers to adopt price discount strategies. Fish marketing becomes profitable only when the products are delivered in a wholesome condition and at a price acceptable to the consumers (Nwabunike, 2015). Fish marketing is almost entirely a function of the private sector and operates through a system of village markets, township markets, assembly centres, retail markets and urban wholesale (Department of Fisheries, 2012). It is not usually on the basis of farmer–consumer, therefore prices of fish change as it passes through middlemen such that by the time it reaches consumers it becomes expensive (Amin, Islam & Hossain 2012). Most of the time farmers are compelled to hand over their harvests to the middlemen at a price determined by the latter due to poor application of price discounting strategies.

A price discount is a very prevalent marketing strategy to attract consumers by providing an extra value or incentive, which encourages consumers to purchase the promoted products immediately (Yin & Huang 2014).Price discount is a reduction on the regular selling price of any goods and service. The motivation is to attract consumers and boost sales. Businesses use discount pricing to sell low-priced products in high volumes. With this strategy, it is important to decrease costs and stay competitive. Large retailers are able to demand price discounts from suppliers and make a discount pricing strategy effective as they buy in bulk

1.2 Statement of the research problem.

Catfish marketing is poorly developed in Nigeria. It is characterized mainly by the problem of storability, perishability, poor processing techniques amongst others (Eze, Ezeh & Onwubuya 2010). Furthermore, poor application of appropriate discount pricing strategies that can help them increase their sales, skills and knowledge in marketing had further complicated the situation leaving many fish farmers and marketers struggling to grow market share (Yin & Huang, 2014)

Worst still, in the past, the Nigerian government paid more attention to production with little attention to marketing of fish and its bye-products (Idachaba, 2000). Consequently, losses occur mainly due to spoilage, poor transportation, sorting, improper packaging and handling. Moreover, there is paucity of data in the literature on factors influencing price discount and how pricing strategies can be used to enhance marketing margin of catfish farmers in Nigeria. This study attempts to fill this research gap.

1.3 Research Questions

This research provides answers to the following research questions.

- What is the structure of catfish market?
- Is catfish farming profitable?
- What is the efficiency of catfish farming?
- What are the factors influencing catfish production among farmers?
- What are the most common types of price discounts and discount pricing strategies adopted by catfish farmers?
- What are the constraints hindering price discounting among farmers in the study area?

1.4 Objectives of the Study

The main objective is to analyse pricing strategies in catfish farming in Kwara state, Nigeria

Specifically, the study was designed to:

1. describe the structure of catfish market;
2. estimate the profitability of catfish farming;
3. determine the efficiency of catfish farming;
4. determine the factors influencing catfish production among catfish farmers and;
5. identify the common types of price discounts and discount pricing strategies adopted by catfish farmers;
6. identify the constraints hindering price discounting among catfish farmers in the study area.

1.5 Justification of Study

Fish and fish products are known worldwide as a very important diet because of their high nutritive, quality and significance in improving human health. Fish plays a vital role in feeding the world's population and contributing significantly to the dietary protein intake of

billions of people (Adeosun & Adebukola, 2012). Fish is the cheapest animal's protein source in Nigeria, and as a food plays an important role in our diet. The human body utilizes protein from fish better than the protein from milk, beef, pork, chicken etc (Dambatta, Sogbesan, Tafida, Haruna & Fagge 2016). It has well-balanced concentrations of all the essential amino acids with a particularly high concentration of lysine. Fresh fish contains higher proportions of protein, around 14-20 g/100 g raw, edible parts, than plant-source foods. Therefore, adding fish to a plant-based diet increases the total protein intake as well as enhances protein absorption due to the lysine content in the fish (Kawarazuka, 2010). It has essential long-chain omega-3 fatty acid docosahexaenoic acid (DHA) that is important for optimal brain and neurodevelopment in children and eicosapentaenoic acid (EPA) that improves cardio-vascular health (Thilsted, James, Toppe, Subasinghe & Karunasagar 2014). In addition, it has high content of Polyunsaturated (Omega III) fatty acids, which are important in lowering blood cholesterol level and high blood pressure (Coster & Otufale, 2010).

Furthermore, this study generates information on the possible research and policy interventions for enhancing catfish production, processing and marketing in Nigeria. The outcome of this research work could justify the need to encourage unemployed youth to go into marketing of catfish.

This study also reveals the extent and direction of relationship between price discounting strategies and other marketing related variables for policy intervention. This work could be referenced and also be of interest to would be researchers.

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 CONCEPTUAL FRAMEWORK

2.1.1 Fish production, Processing and Marketing

Fish Production

Fish production involves the harvesting of fish from water bodies and fish farms by capture fishermen and fish farmers (fish producers). The markets in this tier are located near the water bodies where the fish (product) comes from. For instance, commercial fishing companies maintain markets at wharfs and other facilities near the shoreline. The purpose of maintaining such locations that are close to the shoreline is to ensure ease and convenience of transporting the fish, shellfish and seafood from the shipping vessels to the place where buyers from the next tier typically go. Fish farmers typically use ponds, tanks and other artificial means of containing fish. The markets of fish farmers can have various locations including suburbs or even the city center. These markets are concerned mainly with the sale of fish in large amounts per buyer (Thompson, 2015).

Fish Processing

Fish processing provides diversified employment opportunities in fishing communities. Lem, Bjorndal, and Lappo (2014) asserted that processing is done either at the small-scale level using traditional techniques (usually only in developing countries) or at the industrial level as factory workers (common in both developing and developed countries). Fish are not normally consumed the way they are produced. Their original forms are changed to forms which can give maximum satisfaction to different classes of consumers (Umoinyang, 2014). In Nigeria, smoked fish products are the commonest form of fish products for consumption.

Out of the total 194,000 metric tons of dry fish produced in Nigeria, about 61% of it was smoked (Adeyeye, Oyewole, Obadina, Omemu, Oyedele & Adeogun 2015).

The processing node in the value chain therefore consists of farmers who integrate processing as part of the farm setup, retailers especially women who process fish using the traditional methods of smoking fish which not only preserves the shelf life of the fish but also attracts better price and farmers who specifically operate processing plants to process fish that are sold at the local markets and to restaurants. In this regard, processed fish could be frozen, smoked, dried, and spiced (Omonona & Ajani, 2014). In general, majority of women take part in the processing and marketing nodes of the fishery value chain owing largely to social and cultural norms, which have generally reduced women's access to resources and their decision-making power (Lem *et al*., 2014).

Marketing

Marketing is the management process responsible for identifying, anticipating and satisfying customer requirements profitably (Chartered Institute of Marketing, 2015). Marketing of fish could be regarded as the performance of all business activities involved in the flow of fish from the point of production (fisherman or fish farmer) to the final consumer (Olukosi, Isitor & Ode 2007). The fish marketing node in the value chain comprises those who sell fish at both retailing and wholesaling modes to the final consumers (Omonona & Ajani, 2014). These wholesalers/retailers either collect fish directly from landing points themselves or are supplied by other distributors. The use of wholesalers and retailers (intermediaries) between producers and consumers tremendously improve the marketing and distribution of agricultural products. The function of wholesalers and retailers is very crucial to efficient fish marketing. As asserted by Enete (2008), the efficiency of marketing system gets better

as the number of intermediaries increases and vertically differentiate with specialized functions like wholesale and retail.

2.1.2 Marketing mix

According to Max k. Adlei (1968) in his work on modern market research, marketing mix is a description of the various element of the marketing process that must be co-ordinate to make up the marketing effort. It's a well-known fact that the success of the product in the market depends on the four factors popularly known as the marketing mix. These include the price, the product, the promotion and the place. The price should be competitive and reasonable, the product should be of good quality, and promotion should be impressive and appealing whereas the place should be pleasant and easily accessible.

Pricing is considered as part of 4Ps of marketing mix. It is one of the most important elements and through it the company can determine how profitable the product will be. According to Haxthausen (2008) "the most fundamental principle of marketing is to meet and to exceed customer needs." .One of the customer's expectations is to buy a good product with a low price. Companies must strive, depending on the product and the market, to offer products that meet all customer requirements, however, to be offered with lower price than similar products from competitors.

2.1.3 Marketing Efficiency

Marketing efficiency may be defined as the degree of market performance (Bagchi & Raha 2011). The market mechanisms have to be efficient to be able to play the role of propelling yield. An efficient market system is one that provides satisfactory and cheap services to consumers or one that maximize the ratio of input and output of marketing (Esiobu & Onubuogu, 2014). An efficient marketing system apart from stimulating production also accelerates the pace of economic development and is an important way of raising farmers"

income levels as well as consumers‟ satisfaction levels (Bagchi & Raha, 2011). Increasing productivity and efficiency within the sub- sector of agriculture particularly among small-scale fish producers requires a good knowledge of the current efficiency or inefficiency inherent in the sector as well as factors responsible for this level of efficiency or inefficiency (Agom, Etim & Etuk 2012).

Nwaru, Nwosu and Agummuo (2011) stated that an efficient marketing system ensures that goods which are seasonal will be available all year round, with little variation in prices, which can be attributed to cost of marketing functions like storage, processing, transportation, etc. They further posited that the effectiveness of the marketing process is assessed by the ability of the market to add value to the marketed products by creating time, form, place and possession utility. Bassey, Okon, Ibok and Umoh (2013) reported marketing efficiency of 674.14% and 787.78% for wholesalers and retailers respectively in their study of fresh fish marketing and profitability in AkwaIbom state.

2.1.4 Market Structure, Conduct and Performance

Market structure conduct and performance (S-C-P) framework was derived from the neo-classical analysis of markets (Edwards, Allen & Shaik 2005). The structure, conduct and performance (S-C-P) are differentiated terms yet interrelated. The S-C-P paradigm is mainly focused on analysing competitive conditions of the prevailing market framework (Onyango, 2013). As a branch of applied price theory, the basic paradigm of Industrial organization (IO) which was popularized by Bain in late 1950s, holds that market structure influence the competitive conduct of firms in the market, which in turn influences market performance.

2.1.5 Fish Marketing Channel

Marketing channel is simply the path of a commodity from its raw form to the finished product or the path of a product as it moves from the production to consumption. Assessment of fish marketing channels is important in evaluating fish marketing system because they indicate how the various market participants are organized to accomplish the movement of a fish and fish products from the producer to the final consumers. Marketing channel is not only instrumental in facilitating the physical flow of goods, but it is also the structure through which much marketing effort is channelled to buyers (Ismail, Tijani, Abdulla & Mohammed 2014). Fish being a highly perishable substance needs to be transported to the consumer or final user in time (Ali, Gaya & Jampada 2008) through a coordinated marketing channel to avoid post-harvest spoilage.

Marketing channels are classified as either centralized or decentralized. A centralized marketing channel is one in which commodities are assembled in large central terminal market where they are purchased by wholesalers or processed or from farmer agent, while decentralized channel does not have such large assembly-marketing facilities and traders buy directly from farmer. Centralized channels deals with agents who serve as middleman between producers and consumers while decentralized is a kind of channel where both consumers and agents can buy, directly from the producers (Madugu & Edward, 2011). According to Adeosun and Adebukola (2012) marketing channels can be identified using the respondents and the route through which fish was transferred from producers or wholesalers to consumers. According to Ismail et al. (2014), analysis of marketing channel provides a systematic knowledge of the flow of goods and services from their origin (producer) to the final destination (consumer). Along the channel are agents who perform physical functions in order to obtain economic benefit.

2.1.6 Fish marketing margin

A marketing margin is the percentage of the final weighted average selling price taken by each stage of the marketing chain. The margin must cover the costs involved in transferring produce from one stage to the next and provide a reasonable return to those doing the marketing. “Margins” are often used in the analysis of the efficiency of marketing systems (Shepherd, 2007). As fish, like any other production moves closer and closer to the ultimate consumer, the selling price increases since the margins of the various intermediaries and functionaries are added to it. These market intermediaries are the wholesalers and retailers. Both play important roles in the marketing system. Market margin if not perfect and static is also measure of market performance. Marketing margin is the difference between buying and selling prices (Suleiman, 2007). In competitive markets, the margin achieved should be commensurate with the cost of services rendered (Suleiman, 2007). Every category of middlemen in fisheries value chain earns a sort of margin for the duties performed in the marketing channel.

According to Madugu and Edward (2011) marketing margin depicts the ratio that determines the gap between producer and consumer prices. In their study of the marketing and distribution channel of processed fish in Adamawa state, Nigeria, the market margin was found to be 39.8%. This margin is high, thus they concluded that marketers in the study area are making profit. Iliyasu, Onu, Midau and Fintan (2011) reported a market margin of 40%, which could be attributed to less marketing functions performed when they investigated the economics of smoked and dried fish marketing in Yola North and South Local Government areas of Adamawa State, Nigeria. Offor, Ibeagwa and Ikemefuna (2016) budgetary analysis for fresh fish marketers in Port Harcourt Municipal, Rivers State, Nigeria revealed that the weekly average profit made from fresh fish marketing was ₦11,053.00 and marketing margin was 28.6%.

2.1.7 Concept of price discount

A discount is a reduction on the regular selling price of any goods or service. The motivation is to attract customers and boost sales.

Types of Price Discounts

Quantity discounts

It is increasingly common to offer quantity discounts to customers who purchase in bulk and it generally rewards customer loyalty. These discounts can be cumulative, such as discounts given to customers who place multiple small orders that give a free item after a certain number is purchased. It's also a good idea when your supplier offers discounts for larger order volumes and you can purchase stock at a reduced price. For example, fish farmer can encourage buyer to buy one get-one-free, buy five and get-one-free, or buy one and get the second item at a reduced price.

Seasonal discounts

These are appropriate to reward customers who purchase during off-peak times and often serve to increase sales at the beginning of peak seasons. By analyzing your sales cycles and highlighting these periods, you can offer discounts for customers who buy merchandise or services out-of-season.

Value added offers

Most value added offers are a priceless item that's of benefit to the customer. It's important to remember that although some of these offers are free of cost, it may require your time to provide the service. These offers are a good way to identify any services you offer which your competitor doesn't. For example, a catfish farmer can be connecting wholesaler with the retailer so that they can sell fast.

Promotional discounts.

This is kind of discount that are given to the distributors effort to promote the manufacturers product through local advertising, special displays or other promotions. These allowances may take the form of a percentage reduction in the price or they may be an outright cash payment.

2.1.8 Discount Pricing Strategies

Generally, a business must develop a pricing strategy for a product after performing a marketing analysis. Product distribution, positioning and promotional decisions are made and demand is estimated. According to Monroe (2003), price decisions are one of the most important decisions of management because it affects profitability and the company's returns. A pricing strategy is formulated taking into consideration factors of cost, competition and profit objectives. Possible pricing strategies include a full price strategy, competitive pricing, discount pricing or a mix of these. We will focus on discounting pricing strategies for this research.

Common price discount strategies.

Discount strategy consists selling a given set of items at a reduced price for a limited period. Some examples are proposed in (Bolton, 1989), (Blattberg & Neslin, 1990), (Bemmaor & Mouchoux, 1991). This reduction should generate enough supplementary sales to compensate the reduction in income. The following are the discount pricing strategies commonly used by the catfish farmer;

- Reward loyal customers.
- Offer price discount for new customers.
- Offer price discount to all customers.
- Reward prepayment customers.

- Offer free shipping.

2.1.9 Benefits of discounting.

Along with increased order numbers and more money, discounting benefits include:

- Attracting new customers without a large marketing campaign.
- Encouraging undecided customers to purchase goods, especially if the discount has a limited time offer
- To reward customers who purchase in bulk in order to build customer loyalty
- Maximize sales, revenue and profit

2.1.10 limiting factors in price discount.

The factors affecting pricing discount are varied and multiple. Basically, the prices of products and services are determined by the interplay of five factors, viz., demand and supply conditions, production and associated costs, competition, buyer's bargaining power and the perceived value. The following are the factors hindering adoption of price discount.

1. Marketing Objectives: Marketing objectives may be profit objectives (return on sales investment and maximisation of profits), sales objectives (increasing sales volume and increasing market share) and maintenance objectives (price stabilisation and matching the competition). Lancioni and Gattorna (1993) suggest that an organization that develops pricing strategies with the goal of profit maximization never compromises on price. If the marketing objective is based on maximisation of profit, price discount strategy will be difficult to adopt

2. Costs of production: Cost of a product is the single most important factor to influence the final price. Cost of production is the main component of price. No farmer can sell its product or services at less than the cost of production. Thus, before price discount, it is necessary to compile data relating to the cost of production and keep that in mind. If the cost

of production is high, adoption of price discount strategy will be difficult because the farmer is left with limited profit.

3. Price war: Another one of the major disadvantages of discounts is that it prompts customers to compare prices. As a small business owner, when you discount your products or services, you are forced into competing with bigger companies that have a lower cost structure. Whichever price you set, someone can always do it cheaper. A simple internet search will lead your customers to lots of options, some of which might be cheaper than what you're offering. A strong competitive focus among the marketers can increase the risk of starting a price war among marketers (Heil & Helson, 2001)

4. Kills your profit margins.

Pricing reduction strategies based on competition, in which farmers may seek to increase the volume of sales can also encourage the competitors to lower their prices while contributing to a predatory competition and a price war, resulting in reduced profit margins (Diamantopoulos, 2005)Here is an example of one of the key disadvantages of discounts. If you have a 50% gross margin and you cut your price by 20%, you have to increase sales by 67% just to keep your starting profit margin. It's pretty rare to see a sales spike that will offset a margin hit like that. The only way to hold your profit margin is to reduce your cost of goods. How do you achieve that? By somehow cutting expenses or arm-twisting your suppliers to give you some kind of cost reduction. Unfortunately, these tactics aren't likely for small businesses.

5. Lower Perceived Value

Consider product positioning before choosing a discount pricing strategy. Consumers associate low price with low quality, particularly when the brand name is not familiar. Pursuing a discount pricing strategy increases the chance that your product will be perceived as lower in quality. While you may gain customers who make decisions on price alone,

other customers may choose competitor products because of perceived quality. Low prices may drive sales for a limited time, but do not build customer loyalty. When a lower priced alternative comes along, you may lose your hard-earned market share. Raghubir, Inman and Grande (2004) suggested a negative relationship between a price discount and perceived quality. Customer tend to infer that a discounted product is low in quality, especially when they receive an unexpectedly high price discount that other marketers typically do not offer.

Others challenges hindering discount pricing are; Demand, Competition, Economic condition, Government policy.

2.2 THEORITICAL FRAMEWORK

2.2.1 Theory of Demand and Supply

The theory of demand and supply plays very vital role in the marketing of fish. The level of marketing activity going on in a market is determined primarily by the interplay of the forces of demand and supply. In a perfectly competitive market, where there are many consumers (buyers) and farmers (producers), the price mechanism is fully operational. In other words, the prices of goods and services are determined by the forces of demand and supply. Put differently, prices guide consumers in the choice of goods and services, and the quantities of such goods and services that they buy (Umoinyang, 2014). Demand is often times differentiated from effective demand. While demand refers to willingness to buy, effective demand entails willingness backed with the ability to pay. As such, demand is described as the quantities of goods and services that consumers are willing and able to buy at various prices. Demand is a function of several variables, i.e., the quantities of goods and services demanded at any given point in time is a function of several factors. Four of such factors are often pronounced. These are the price of the good (service), the price of substitutes and complements, income of consumers, and tastes or preferences (Umoinyang,

2014). This theory was used in this research so as to fill the gap between demand and supply of catfish in Nigeria.

2.2.2 Price theory.

Price theory is concerned with explaining economic activity in terms of the creation and transfer of value, which includes the trade of goods and services between different economic agents (Tellis 1986). According to Friedman (1990), it is the explanation of how relative prices are determined and how prices function to coordinate economic activity. The author further outlined two reasons why we must understand pricing theories. The first reason to understand price theory is to understand how the society around you works. The second reason is that an understanding of how prices are determined is essential to an understanding of most controversial economic issues while a misunderstanding of how prices are determined is at the root of many, if not most, economic errors. According to Nagle and Holden (1995), a market economy is coordinated through the price system. Costs of production ultimately, the cost to a worker of working instead of taking a vacation or of working at one job instead of at another, or the cost of using land or some other resource for one purpose and so being unable to use it for another are reflected in the prices for which goods are sold. The value of goods to those who ultimately consume them is reflected in the prices purchasers are willing to pay. If a good is worth more to a consumer than it costs to produce, it gets produced; if not, it does not.

2.3 ANALYTICAL FRAMEWORK.

2.3.1 Herfindahl–Hirschman Index

The Herfindahl index (also known as Herfindahl–Hirschman Index, HHI, or sometimes HHI-score) is a measure of the size of firms in relation to the industry and an indicator of the amount of competition among them. Named after economists Orris C. Herfindahl and Albert O. Hirschman, it is an economic concept widely applied in competition law, antitrust and also

technology management. It is defined as the sum of the squares of the market shares of the firms within the industry (sometimes limited to the 50 largest firms), where the market shares are expressed as fractions. The result is proportional to the average market share, weighted by market share. As such, it can range from 0 to 1.0, moving from a huge number of very small firms to a single monopolistic producer. Increases in the Herfindahl index generally indicate a decrease in competition and an increase of market power, whereas decreases indicate the opposite. Alternatively, if whole percentages are used, the index ranges from 0 to 10,000 "points". For example, an index of .25 is the same as 2,500 points.

The major benefit of the Herfindahl index in relationship to such measures as the concentration ratiois that it gives more weight to larger firms.

The Herfindahl index (HI), $HI = \Sigma S_i^2$

Where Si = Market share for respondent i, calculated as: Si = Qi/Q,

The Herfindahl Index (*HI*) ranges from 1/*N* to one, where *N* is the number of firms in the market. Equivalently, if percents are used as whole numbers, as in 75 instead of 0.75, the index can range up to 100^2, or 10,000.

For the purpose of this study. Herfindahl Index was used to analyze the structure of catfish markets in Kwara state

2.3.2 Regression Analysis.

A **regression analysis** is a way to measure the relationship of one variable to another. This allows us to see what factors of our **marketing** efforts relate to others. Regression analysis is chosen for this study due to its ability to test the F ratio and fitness of R^2

Regression analysis has been used by so many researchers such as Okwuokenye (2011) who used it to find the influence of socio-economic characteristics of yam sellers on marketing

margin. His result showed that Marketers marital status (-0.436), age (0.088) and years of marketing experience (-0.239) were found to be significant in determining the marketing margin in the study area. Adeniji(2012) also used multiple linear regression to examine the effect of socio economic factors on the marketing margin of yam in Niger state. He chose the double log function due to the fitness of the R^2 and found out that 27.19% of variation in dependent variables was obtained by independent variables in the model. The F-value was significant at 5% level of probability while X5 (experience, years), X3 (age in years)and X4 (education)were significant at 1% level of probability.

Regression analysis has different functions which can be expressed explicitly

Linear: $Y= \beta_0 + \beta_1X_1 + \beta_2X_2 +\ldots\ldots\ldots\ldots\ldots\ldots\ldots+\beta_nX_n + e$

Semi-Log: $Y= \beta_0 + \beta_1 \log X_1 + \beta_2 \log X_2 +\ldots\ldots\ldots\ldots\ldots\ldots\beta_n \log X_n+e$

Double Log: $\log Y= \beta_0 + \beta_1 \log X_1 + \beta_2 \log X_2 + \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots.. + \beta_n \log X_n+ e$

For the purpose of this study, linear multiple regression model was employed. This was used to determine the factors influencing catfish production among catfish marketers in the study area.

2.4 EMPIRICAL REVIEW

2.4.1Origin of marketing

Drucker (1958) reported that marketing started in Japan in the 7th century by Mitsaw family of Tokyo. The west started marketing in the middle of the 19th century visible in the academics and business scenes. In America, it took another fifty years later. Marketing research surfaced in the early 20th century. It entered the consciousness of different organization at different times. According to the renowned marketing scholar Drucker (1958), Marketing is so basic that it cannot be considered separate functions. It is a whole

business seen from different view of its final result, that is, from consumers' point of view. Various definitions of marketing have been given over the time, some have called it business activity, a group of related business activities, others have seen it as a frame of mind, a process of buying and selling as a process of exchange or transferring of ownership of product and as many other things.

Marketing involves creating product, pricing of the product and putting them in the place of where they can be found and promoting the product which communicates the marketing message to a selected audience (Akinwusi, 1995) Marketing not only ensures that goods and services are produced but also make sure that the right kind of goods and services are produced in the right amount or quality. Fish marketing involves the performances of all business activities involve in the flow of fish from the one point of initials production until they arrived in the hand of the consumers in order to satisfy consumption and accomplish the company's objectives.

2.4.2 History of Marketing

The history of marketing parallels the civilization for it is both a cause and effect of the civilizing process man tend to build, culturally and technologically on the foundations laid by the other generations and other societies. According to Ames, (1970), marketing is affected by the process of civilization that is must constantly adopt new strategies and new techniques as society and its problem become more complex. Possibly, the first marketing transaction took place when caveman who enjoys making arrows but did not like to hunt, persuaded a fellow cave dweller who like to hunt but did not enjoy making arrows to accept some arrows in exchanged for some animal skin; we call this "barter". Since that time long ago, marketing has become very sophisticated.

As elementary civilization spreads, one tribe learned to trade good with another tribe. The invention and acceptance of money as medium of exchange was a giant step forward. Gradually, Man began to learn that he could live better if he specialize in the production of one good and traded his surplus of that good to the other man who specialized in producing something else.

2.4.3 Fish marketing.

A fish market is a market place used for marketing of fish and fish products. However, fish marketing essentially consists of all the activities involved in delivering fish from the producer to the consumer, while distribution provides channels that link the marketing institutions and producers together. Fish marketing may be broadly defined as all those functions involved from the point of catching of fish, to the point of final consumption. As the fish, like any other production moves closer and closer to the ultimate consumer, the selling price increases since the margins of the various intermediaries and functionaries are added to it. The price efficiency is concerned with improving the operation of buying, selling and other connected aspects of marketing process so that it will remain responsive to consumer direction (Ali et al, 2008).

Marketing strategies however, is all encompassing and involves identifies consumer's needs, effective channels to reach them, ensures consumer's satisfaction and ensures profit maximization. Fish marketing plays a vital role in the lives of much of the most population, both in terms of employment and nutrition. Babalola, Bamiji and Isitor (2015) indicated that fish marketing provided increased income to many Nigerians who distribute fresh and smoked fish across the country. Fish marketing is almost entirely a function of the private sector and operates through a system of village markets, township markets, assembly centers, retail markets and urban wholesale (Department of Fisheries, 2012). It is not usually on the basis of fishermen – consumer, therefore prices of fish change as it passes through

middlemen such that by the time it reaches consumers it becomes expensive (Amin, et al 2012). Most of the time fishermen are compelled to hand over their catches to the middlemen at a price determined by the latter. These middlemen are not just a trader in fish. Most of them are fishermen owning and operating ponds, boat, gear, employing other fishermen on a fixed wage as hired labourers and enjoying unearned income depriving the actual fishermen of the benefit of their labour and production (Rahman, Hossain Fatematuzzhura, Tasnoova Ahamed & Ohtomi 2012). Lack of appropriate marketing strategies, skills and knowledge in marketing had further complicated the situation leaving many fish farmers and fishers struggling to grow market share. As sustainability of fisheries production largely depends on the producers receiving sufficient income.

2.4.4 Determinants of catfish marketing.

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 (FAO, 2012). Nigeria's total annual fish demand is estimated at 2.7 million metric tonnes (mmt). Just 30% of this demand is met domestically, resulting in an annual spend of N125bn on fish imports. In Ghana total fish consumption is estimated at slightly over 1.0mmt, half of which is sourced

locally. In Cote d' Ivoir consumption is 300,000mt and 33% is sources locally (NBS 2016) Fish and fish products 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.

Determining the prices and margins that occur in the fish marketing channel will contribute to the determination of policies that will prevent the decrease in the producer income that should be applied in the sector (Aswathy, Narayanakumar & Harshan, 2014). Therefore, for the marketing of catfish activity to be profitable, a suitable distribution channel must be selected to ensure that the conditions under which catfish are to be handled are met on time and with minimal expense so that the marketers will be able to give price discount to customer without affecting the profit. From the perspective of the part of the consumer, fish accounts for 40% of protein dietary intake in Nigeria and to as high as 80% in inland and coastal communities (Ozigbo, Anyadike, Adegbite & Kolawole 2014; Adebayo, Anyanwu, Ikenwachukwu & Oniya 2014). Thus, fish market contributes significantly to the livelihoods and food/nutrition security in kwara state.

According to Adekanye (1988) and Abdullai (1983), marketing of food in Nigeria is characterized by multitudes of deficiencies and problems. These problems cut across processing, preservation, packaging, distribution and transportation Eze, et al (2010), identified inadequate processing skills, produce deterioration and lack of storage facilities as the major constraints perceived by women marketers. Agbebi and Fagbote (2012) observed that middlemen are marketing intermediaries that do not add title to the products, but receives fee for expediting the exchange.

2.4.5 Fish marketing nodes

Marketing of fish passes through various market participants and exchange points before they reach the final consumers (Ali et al., 2008). The marketing system operates through a set of intermediaries performing useful commercial functions in a chain formation all the way from the producers to the final consumers. A value chain node is a point in the value chain where a product is exchanged or goes through major transformation while a market segment is a "vertical chunk" of value chain between two nodes (Bolwig, Ponte, Toit, Riisgaard & Halberg 2010). There exists a great potential of fish resources in Nigeria whose distribution and value chain needs to be strengthened and developed to bridge the gap between demand and supply of fish in Nigeria.

A study carried out by Phiri, Dzanja, Kokota and Hara (2013) to examine the nodes that are along Oreochromis species (Chambo) value chain revealed a typical Chambo value chain node of production, wholesaling, retailing and consumption. Odebiyi, George, Odulate, Agbonlahor and Olaoye (2013) in their study to evaluate the coastal fisheries value chain identified three major marketing nodes including: fishermen, fish processors and the fish marketers, along the coastal area of Ogun Waterside Local Government Area (LGA), Nigeria.

2.4.6 Price Discount Rate and Marketing of catfish

In making purchase decisions, consumers pay significant attention to a price discount rate as well as whether a desired product is a part of a price discount. Prior studies on price discount rate commonly indicated that consumers highly focus on the discount rate (Chen, Marmorstein, Tsiros & Rao 2012; Coulter and Coulter 2007; Heath, hatterjee & France 1995) because the rate can closely address the gap between the perceived price and the internal reference price on a desired product.

Likewise, the consumers in the catfish market would perceive a desired product more valuable when it has a higher discount rate. Particularly, given that the catfish market is a highly competitive domain where multiple vendors provide similar product (Murphy 2015), a high level of price discount rate should be a competitive advantage that can increase the sales while attracting more consumers.

2.4.7 Price Discounts.

Price discounts are one of the most effective methods to increase sales according to several studies (Chen et al. 2012; Dawson & Kim 2009). The reason can be explained with two theoretical viewpoints: price fairness evaluation and utilitarian motivation of consumers. In the evaluation of fairness of a product price, consumers may use two types of price: perceived price and internal reference price (Sheng, Parker & Nakamoto 2007). Perceived price refers to the price recognized by a consumer, which is generally a listed price of a product, while internal reference price means a price that plays as a scale to evaluate the appropriateness of the perceived price. If the perceived price is lower than the internal reference price, consumers may believe it is inexpensive (Kalyanaram & Winer 1995; Maxwell 2002). Hence, the internal reference price has a significant influence to the purchase decision of consumers (Sheng et al. 2007). Price discounts are known to decrease the internal reference price of consumers. Due to the decreased internal reference price, consumers tend to perceive a product at a regular price more expensive than that of a discounted price. Therefore, consumers prefer a product offered at a discounted price to that of a regular price. Another explanation for the effectiveness of price discounts is a utilitarian motivation of consumers, which is a critical determinant of intention to purchase. Utilitarian motivation refers to a tendency to seek for a rational, efficient, and goal driven decision to complete a task (Batra and Ahtola 1991; Hirschman and Holbrook 1982). Therefore,

consumers with the motivation are more likely to purchase a desired product when it is offered at a discounted price because they can satisfy their need at a lower cost.

In the e-commerce environment, price discounts are found to increase the purchase intention of online shoppers (Chevalier and Goolsbee 2003; Earl and Potts 2000; To, Liao & Lin 2007) and actual sales and profits from products. According to the research conducted by Ghose and Han (2014), the sales and profit from mobile apps tend to increase when they are offered at a discounted price.

2.4.8 Demand and supply of fish in Nigeria

Fish supply in Nigeria is either through capture fisheries, fish farming or by importation (Anene, Eze & Oputa 2010), but half of the fish consumed in Nigeria is imported (Dauda, Ojoko & Fawole 2016). According to Dauda et al (2016) Nigeria requires about 2.66 million mt of fish annually to satisfy the dietary requirement of its citizens (160 million). With a paltry domestic production of about 780,000 tonnes, fish demand-supply gap stands at a staggering 1.8 million tonnes (Oyinbo & Rekwot, 2013).

2.4.9 Fish consumption in Nigeria.

The population of Nigeria according to World Bank (2014) estimate is 168.8 million. In Nigeria, almost 50% of the total animal protein intake is from fish, it occupies this unique position being the cheapest source of animal protein (FDF, 2009). Protein is an essential part of human diet and it is sourced from either plant or animal. Food and Agriculture Organization recommended that a person takes 35 grams per caput of animal protein per day for sustainable growth and development (Tanko, Nabil & Maikasuwa 2014). Most households consume minimum level of calorie but unable to satisfy the protein requirements (Dauda et al., 2016). Average fish consumption in Nigeria is 9.8 kg/caput (USAID, 2010). According to Onyeneke and Nwaiwu (2012), food is not distributed equally among the

households in Nigeria and this may be attributed to high level of poverty in some region of the country. In addition, fish consumption is also affected by location, seasonality, time and household socio-economic status (Lem et al 2014). Seasonal fluctuation in food availability and household responses to this insecurity has been observed to influence individual consumption patterns (Fregene & Bolorunduro, 2009).

2.4.10 Nutritional benefits of fish

Fish and fish products are known worldwide as a very important diet because of their high nutritive quality and significance in improving human health. Fish plays a vital role in feeding the world's population and contributing significantly to the dietary protein intake of billions of people (Adeosun & Adebukola, 2012). Fish is the most important animal protein food available in the tropics (Ali et al., 2008). The nutritional benefits derived from consuming fish are as follows:

Fish is the cheapest animal's protein source in Nigeria, and as a food plays an important role in our diet. And the human body utilizes protein from fish better than the protein from milk, beef, pork, chicken etc (Dambatta et al., 2016).

It has well-balanced concentrations of all the essential amino acids with a particularly high concentration of lysine. Fresh fish contains higher proportions of protein, around 14-20 g/100 g raw, edible parts, than plant-source foods. Therefore, adding fish to a plant-based diet increases the total protein intake as well as enhances protein absorption due to the lysine content in the fish (Kawarazuka, 2010).

Fish is an integral component of a balanced diet, providing a healthy source of dietary high-quality protein, minerals and trace elements, fat-soluble vitamins and essential fatty acids (FAO/WHO, 2011).

It has essential long-chain omega-3 fatty acid docosahexaenoic acid (DHA) that is important for optimal brain and neurodevelopment in children and eicosapentaenoic acid (EPA) that improves cardio-vascular health (Thilsted et al., 2014).

There is strong evidence that fish, in particular oily fish, lowers the risk of coronary heart disease (CHD) mortality by up to 36 percent due to a combination of EPA and DHA (FAO/WHO 2011).

It has high content of Polyunsaturated (Omega III) fatty acids, which are important in lowering blood cholesterol level and high blood pressure (Coaster & Otufale, 2010).

Fisheries products are important sources of micronutrients such as vitamins and minerals. This is in particularly true for small sized species consumed whole with heads and bones, which can be an excellent source of many essential minerals such as iodine, selenium, zinc, iron, calcium, phosphorus, potassium, vitamins A and D, and several B vitamins (Thilsted et al., 2014).

Due to the nutritional importance of fish, venturing into its enterprise holistically holds promising potentials to investors (Osarenren & Ojor, 2014). Apart from these benefits derived from human consumption, fish is important for animal feed, a source of raw materials in allied industries and a source of employment for many Nigerians (Esu, Asa & Iniedu., 2009)

CHAPTER THREE

METHODOLOGY

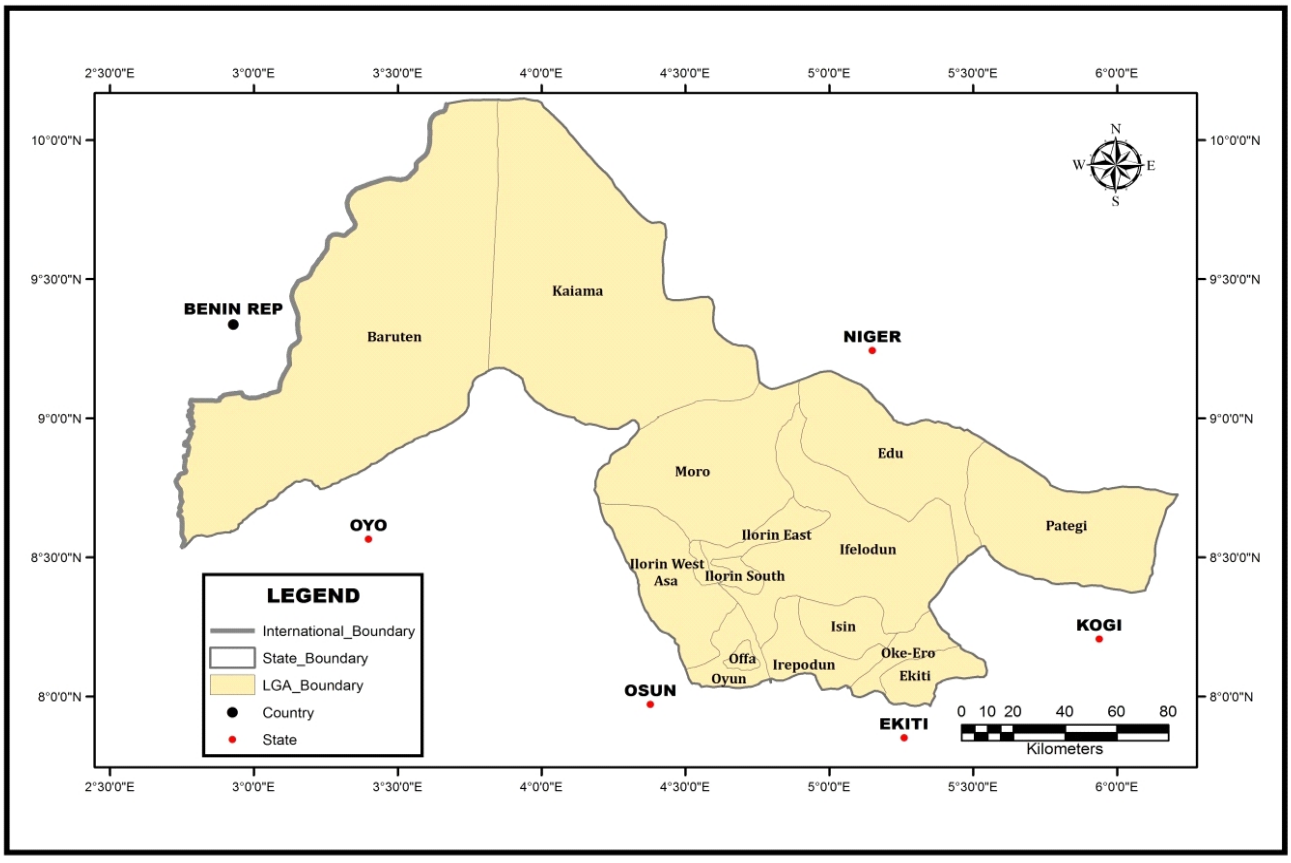
3.1 Study Area

This study was carried out in Kwara State Nigeria. Kwara is located within the North Central geopolitical zone. Kwara State is situated between parallels 8Â° and 10Â° north latitudes and 3Â° and 6Â° east longitudes, with Niger State in the north, Kogi State in the east, Oyo, Ekiti and Osun States in the south and an international boundary with the Republic of Benin in the west. Agriculture is the main source of the economy. The average temperature ranges between 27ºC and 35ºC with a mean annual rainfall of 1,000-1,500mm. It has two main seasons- wet and dry. The wet season is between early April and late October while the dry season is between November and late March. The State is an inland water state naturally blessed with large volumes of water where fishermen provide food for an estimated population of about 168.8 million (World Bank 2014). The fishermen are predominantly in the fishing settlements/villages which are scattered along the River Niger area of the State with narrow inlets of stream, reservoir, dams and rivers such as River Niger in Patigi, Lafiagi, Jebba and their inlets (Oladimeji, Abdulsalam, Damisa & Omokore 2013)

Ilorin is mainly drained by Asa River which flows in a South-North direction (Ajibade and Ojelola, 2004). The pattern of the drainage system of Ilorin is dendritic. Asa River occupies a fairly wide valley and goes a long way to divide Ilorin into two parts; namely the eastern and the western part. The eastern part covers those areas where the GRA is located while the core indigenous area of Ilorin falls under the western part. Other rivers in Ilorin that drains into Asariver are river Agba, river Alalubosa, river Okun, river Osere, river Aluko, river Yalu, river Odota and river Loma. Based on ecological characteristics, cultural practices and project administrative convenience, the state is categorized into four zones by Kwara state Agricultural Development Project (KWADP). These are: Zone A: Baruteen and Kaima

Local Government Areas (LGAs); Zone B: Edu and Patigi LGAs; Zone C: Asa, Ilorin East, Ilorin South, Ilorin West and Moro LGAs and Zone D: Ekiti, Ifelodun, Irepodun, Offa, Oyun, Isin and Oke-Ero LGAs (KWADPs, 2010). According to Catfsh Association of Nigeria (CAFAN), there are 784 registered catfish farmers in Kwara State. Asa 32, Baruten 27, Edu 18, Ekiti 27, Ielodun 62, Ilorin East 43, Ilorin South 39, Ilorin West 53, Irepodun 67, Kaiama 68, Moro 14, Offa 184, Oke Ero 25, Isin 48, Oyun 36 and Pategi 41.

Fig 1. Map of Kwara state showing the Local Government Areas



3.2 Method of data collection and Sampling techniques

Primary data was used to generate information for this study. The data were collected on catfish farming with the use of structured interview schedule. There are 4 ADPs zone in Kwara State, out of which Zone D was purposively selected because it has the highest (449)

population of registered catfish farmers in the state. The second stage involves proportional selection of 212 catfish farmers from all the 7 LGAs in Zone D using Taro Yamane Formula as shown below:

Taro Yamane Formula

$n = N/1+N(e)^2$

where n= sample size

N = target population

e = 0.05

$n=449/1+449(0.05)^2$

n=212 respondents

Calculation of sample proportion.

$$\text{Proportion} = \frac{\text{sample size}}{\text{Population}} \times 100$$

$$\text{Proportion} = \frac{212}{449} \times 100$$

Proportion= 47%

47% of the number of catfish farmers in each local government area in Zone D was sampled.

Table 1: Sampled respondents

	LGAs	Number of fish farmer in each LGA	Sampled proportion
1	Ekiti	27	13
2	Ifelodun	62	29
3	Irepodun	67	31
4	Offa	184	87
5	Oyun	36	17
6	Isin	48	23
7	Oke-ero	25	12
	Total	449	212

Source: field survey, 2020.

3.3. Analytical techniques

3.3.1 Descriptive statistics:

Tools such as frequency, percentage, mean, mode and range were used to identify the common types of price discounts and discount pricing strategies adopted by catfish farmers and to describe the factors hindering price discounting strategies in the area, a 5 point Likert-type scale was used. The response options and values assigned were as follows: strongly disagree (SD)=5; disagree (D) =4; agree (A)=3; moderately agree (MA) =2; and strongly agree (SA) =1. These values were added and divided by 5 to obtain the mean (3.0). Factors with mean scores greater and lower than 3.0 will be regarded as important and unimportant variables respectively.

3.3.2 Herfindahl–Hirschman Index:

The structure of catfish market was analysed using the Herfindahl–Hirschman Index

The Herfindahl index model

(HI), $H = \Sigma S_i^2$ ..... (1)

$S_i = Qi/Q$ ..... (2)

Where Si = Market share for respondent i,

Qi = Total number of kg of catfish sold per cycle (6 months) by respondent i, and

Q = Total number of kg of catfish sold per cycle (6 months) by all respondents

NOTE

An *H* below 0.01 (or 100) indicates a highly competitive and non- concentrated industry.

An *H* between 0.01- 0.14 (or 1,400) indicates a competitive and non-concentrated industry.

An *H* between 0.15 to 0.25 (or 1,500 to 2,500) indicates moderately concentrated and less

competitive industry

An *H* above 0.25 (above 2,500) indicates highly concentrated and non-competitive market

3.3.3 Marketing margin.

The profitability of catfish farmers was determined using the marketing margin analysis. This is the difference between the retail or consumer price (CP) and the farm gate or supply price (SP). It is calculated mathematically as

$$MM=\frac{CP- SP}{CP}*100 \quad \text{..... (3)}$$

Where:

MM= Marketing margin

CP=Consumer or selling price (₦)

Sp=Farm-gate or supply price (₦)

3.3.4 Market efficiency (ME):

The efficiency of catfish farming was determined by calculating the ratio of value added to the catfish produce to the costs of marketing services expressed in percentage, as depicted below.

$$\text{Market Efficiency (ME)} = \frac{\text{Revenue generated through marketing}}{\text{Cost of marketing service}} X100 \text{..... (4)}$$

Where:

Revenue generated = Price X Quantity sold.

Costs of Marketing services = Costs of transport, wheel-barrow services and other marketing charges or the 10% commission paid to Commissioned Agents by the retailers.

Expressed in monetary term as:

Marketing Efficiency (ME) = $\frac{\text{Value of output}}{\text{Value of input}}$ ..... (5)

The higher the ratio or percentage, the more efficient the market is considered to be.

3.3.5 Linear multiple regression analysis:

Linear multiple regression analysis was used to identify factors influencing catfish production among farmers in the study area.

The model is stated as:

$$Y=B_0 + B_1X_1 +B_2X_2 +B_3X_3 +B_4X_4 +B_5X_5 +B_6X_6 +B_7X+B_8X_8+B_9X_9+ei \text{ .....} \quad (6)$$

Where

Y= catfish produced (kg)

X_1= distance to nearest city (km)

X_2= household size (number)

X_3=cost of marketing service (₦)

X_4=price discount (₦)

X_5=marketing experience (years)

X_6=size of pond (m^2)

X_7=education(number of years spent in school)

ei = Error term

b_0 = intercept (or constant)

B_1, B_2 … B_{12} = ith coefficient corresponding to X_1, X_2 … X_{12}

LIMITATIONS OF THE STUDY.

1. Lack of previous research studies on the topic because there is paucity of data in the literature on pricing strategies adopted by farmers.
2. Difficulty in estimating cost of pond per cycle because some of the farmers rent pond while some of them own there ponds.
3. Limited access to data from respondents. Some respondents may be affected by factors such as suspicion; however the researcher will have to assure them of the confidentiality of the study. Some respondents would want to give pleasing responses to avoid offending the researcher; although this would be solved by enlightening them that the research is purely objective and not subjective.
4. Problem of getting accurate pond size because most of the respondent found it difficult to give the actual size of their ponds in meter square.

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1 Socio economic characteristics of respondents

The result presented in table 4.1 represents the socio economic characteristics of catfish farmers in Kwara state.

Table 4.1 Socio economic characteristics of respondents

S/N	VARIABLE	CLASSES	FREQUENCY	PERCENTAGE
1	Gender	Male Female	203 9	95.8 4.2
2	Age (years)	1-30 31-60 61-90 Average	21 185 6 41	9.90 87.27 2.83
3	Education (years)	Non- formal Primary(1-6) Secondary(7-12) Tertiary(13-18) Average	10 33 46 123 13	4.7 15.6 21.7 58
4	Household size(number)	1-5 6-10 Average	178 34 5	84 16
5	Years of experience	1-5 6-10 11-15 Average	192 19 1 3	90.5 9 0.5
6	Types of price discount	Quantity discount Geographical discount Seasonal discount Trade discount Cash discount	94 54 42 12 10	44.3 25.5 19.8 5.7 4.7
7	Price discount strategies	Offer discount to new customers Customer value discount Pre payment Offer discounts to all customers Offer free shipping	79 67 26 25 15	37.3 31.6 12.3 11.8 7.1

Source: field survey, 2020.

4.1.1 Gender of respondents.

The result revealed that 95.8% of the respondents were males while 4.2% of the respondents were females. Gender sensitivity of catfish farmer is inclined towards men than women such that more men were involved in the marketing activity of catfish in the study area.

4.1.2 Age of respondents

Table 4.1 shows that 87.27% of the respondents were between the ages of 31-60 years with an average age of 41 years. This implies that most of the farmers are in their active economic years and they could withstand the rigours associated with the activities of marketing. This gives an indication that the youth were becoming gainfully employed and that they are now realizing their potentials, instead of solely depending on "white collar" jobs as in the past. According to Alabi and Aruna (2006) trader's age may influence his resources allocation, reasoning and management ability. The minimum age is 27 while the maximum is 60.

4.1.3 Education of respondents

This is represented by the number of years a person spent in formal school. Majority (58%) of the respondents spent (13-18) years in school while only 4.7% have a non-formal education. This indicates that most catfish farmers have tertiary education. Education is important in the management of risks associated with marketing operation and adoption of new technology in the catfish farming in the study area. The observation is in line with that of Onoja et al (2012) that individuals with educational attainments are usually being faster adopters of innovations.

4.1.4 Household size of respondents

Household size refers to the total number of individuals (wives, children, grandchildren and extended family members) that live with and feed from the household. Most (84%) of the

catfish farmers in Kwara state have household sizes between 1-5 members while 16% have household sizes between 6-10 members. Furthermore, the average household size for the respondents is 5 members.

4.1.5 Years of experience of respondents

Experience is measured in years which an individual has had in engaging in such activity. Majority (90.5%) of the respondents have between 1-5 years of catfish farming experience, while only 0.5% of them have between 11-15 years of farming experience. Furthermore, the minimum, maximum, and average farming experiences of the respondents are 1, 12 and 3 years respectively. This implied that majority of the respondents may possess less farming skills and knowledge compared to respondents who have been in the business for years. Thus, their maturity in understanding the technicalities involved in catfish farming as well as understanding the market situation with regard to market intelligence and managing risks and uncertainties in marketing activities in an attempt to get more market share and more profits may be impaired. For example, experience can help to correct past errors and expand or contract the scale of the application of tested skills. Also, respondents with longer years of experience could be able to forecast market situation in which they sell their products at higher prices to make better profits.

4.1.6 Types of price discount

The common types of price discount adopted by catfish farmers in Kwara state are: quantity, geographical, seasonal, trade and cash discount.

The result in the table 4.1 shows that quantity discount is mostly (44.3%) used by the catfish marketers, which could be as a result of perishable nature of catfish. While cash discount is least used by the respondent in the study area.

4.1.7 Price discount strategies adopted by the catfish farmers.

The price discount strategies adopted by catfish farmers in Kwara state are: offering price discount to new customers, customer value discount, prepayment discount, offer discount to all customers and offering free shipping to customers. Furthermore, out of the five price discount strategies adopted by the catfish farmers in the study area, offering discount to new customer is mostly (79%) used by the catfish farmers so as to convince new customers to buy from them, while offering free shipping to customers is the least frequently used strategy which could be as a result of high cost incurred during transportation that can possibly affect their profit. (Table 4.1)

4.2 **Structure of catfish market.**

Herfindahl index was used to determine the concentration of the catfish marketers. The Herfindahl index value of 0.006 indicates a highly competitive and non-concentrated catfish market. This implies that there is large number of catfish farmers and buyers, and there is no barrier to entry or exit in the state. This explains why catfish marketers use price discount strategies to attract more sales and become more competitive in the industry (Table 4.2).

Table 4.2 Structure of catfish market in Kwara state.

Variables	**Values**
total number of catfish sold per cycle (6 months) by respondent i	1540kg…….2100kg
total number of catfish sold per cycle (6 months) by all respondents	532290kg
Market share for respondent i	0.002893…….0.003945
Square of market share(Si^2)	0.00000837……0.0000155
Herfindahl index (ΣS_i^2)	0.006

Source: field survey, 2020

4.3. Profitability of catfish farming per cycle (6 months)

The marketing margin analysis was used to determine the profitability of catfish farmers in Kwara state. The marketing margin value of 28.6% indicates that every ₦1 sale result to a price spread of 0.29k in catfish marketing in the study area (Table 4.3). This implies catfish farming is profitable and it is therefore worthwhile in the state. This result is consistent with the findings of Ashaolu, Akinyemi and Nzekwe (2006) who observed that fish farming is a profitable venture in Kwara state

Table 4.3: The marketing margin of catfish farming per cycle (6 months) is analysed as follows;

S/N	VARIABLE	AMOUNT
1	Average cost of pond	98,470.55
2	Average cost of juvenile	76,760.93
3	Average cost of feed	997,892.1
4	Average cost of fuel (pumping machine)	61,603.05
5	Average cost of labour	54,735.85
6	Average cost of transport	13,516.35
7	Average cost of spoiled fish	13,941.02
8	Average cost of marketing service	10,436.32
	Total cost	1,327,356.17
	Average revenue generated	1,859,610.849
	Profit	532,254.679
	Return per capital investment	0.40
	Percentage marketing margin	28.62

Source: field survey, 2020

4.4. Marketing efficiency of catfish farmers in Kwara state.

Marketing efficiency has to do with the relative performance of the operations or activities employed in getting a product to the final consumer. The calculated marketing efficiency value of 140.09% indicates that catfish trading is efficient in the state (Table 4.2)

Table 4.4 Marketing efficiency of catfish farmers per cycle

S/N	VARIABLE	AMOUNT
1	Average cost of pond	98,470.55
2	Average cost of juvenile	76,760.93
3	Average cost of feed	997,892.1
4	Average cost of fuel (pumping machine)	61,603.05
5	Average cost of labour	54,735.85
6	Average cost of transport	13,516.35
7	Average cost of spoiled fish	13,941.02
8	Average cost of marketing service	10,436.32
	Total cost	1,327,356.17
	Average revenue generated	1,859,610.849
	Market efficiency	140.09%

Source: field survey, 2020

4.5 Factors influencing catfish production among farmers.

The R square of 0.6781 implies that 67.81% of the dependent variable is being explained d by the explanatory variable. The remaining 32.29% is attributed to variables not included in the model but present in the error term. The distance to the nearest city, marketing services, marketing experience and amount of price discount were all significant. Other factors such as household size, pond size and education were not significant in determining the amount of catfish produced by the farmers

Table 4.5: Factors influencing catfish production among farmers.

Variable	Coefficient	Std. Error	t-statistic	p-value
Const	-874.427	566.364	-1.5439	0.12415
Marketing services	0.0526662	0.0152887	3.4448	0.00069***
Distance to the nearest city	14.048	4.62512	3.0373	0.00270***
Household	64.22	56.9911	1.1268	0.26113
Pond size	0.0343151	0.0354611	0.9677	0.33435
Marketing experience	268.703	44.6878	6.0129	<0.00001***
Education	-5.33115	15.2789	-0.3489	0.72751
Price discount	214.724	50.9132	4.2175	0.00004***

Source: field survey, 2020

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

The coefficient of cost of marketing service is positive and significant at 1 % level of probability. This shows that the higher the quantity of catfish produced the higher the cost of marketing services.

The coefficient of distance to the nearest city is positive and significant at 1% level of probability. This implies that the farther the distance to state capital, the higher the quantity of catfish produced per cycle.

The coefficient of years of experience is positive and significant at 1% level of significance. This shows that the higher the years of experience the higher the quantity of catfish produced. This suggests that as the marketers gained more experience they understand when, how and amount of price discount to be given to the consumer at different season. This is in line with the findings of Bassey, Okon, Umoh and Nyong (2015) who reported that experienced marketers are perceived to have learnt from the other marketer's experiences due to their prolonged fraternity with them.

The coefficient of price discount is positive and significant at 1% level of probability. This shows that price discount increases as quantity of catfish sold increases. This could be attributed to the fact that when the farmers produces large quantities of catfish, they tend to increase price discount for prompt sales of the fish.

4.6 Constraints hindering adoption of discount pricing strategies among farmers

The most important factor hindering discount pricing strategies in catfish farming is the cost of production (4.1368) and was ranked first. This could be probably because most commercial fish feeds are imported into the country and the problems associated with importation and distribution could be the main reasons for the hike in feed prices (Table 4.5)

Table 4.6: Constraints hindering pricing strategies in catfish farming.

CONSTRAINTS	SD	D	A	MA	SA	MEAN	SD	RANK
Cost of production	2(0.9)	9(4.2)	47(22.2)	54(25.5)	100(47.2)	4.1368	0.96634	1st
Discount pricing can lower perceived value	2(0.9)	8(3.8)	46(21.7)	64(30.2)	92(43.4)	4.1132	0.93708	2nd
Risk of losing profit from lower margin	2(0.9)	12(5.7)	65(30.7)	74(34.9)	59(27.8)	3.8302	0.93354	3rd
Marketing objectives	7(3.3)	29(13.7)	73(34.4)	73(34.4)	30(14.2)	3.4245	1.00188	4th
Government policy	11(5.2)	47(22.2)	66(31.1)	65(30.7)	23(10.8)	3.1981	1.06580	5th
Economic condition	4(1.9)	46(21.7)	92(43.4)	51(24.1)	19(9)	3.1651	0.93185	6th
Demand	7(3.3)	19(9)	134(63.2)	39(18.4)	13(6.1)	3.1509	0.79444	7th
Competition	6(2.8)	40(18.9)	108(50.9)	43(20.3)	15(7.1)	3.0991	0.88409	8th

Source: field survey, 2020.

These commercial feeds possess floating and high protein qualities and are therefore preferred by fish farmers to local feeds. Ugwumba and Nnabuife (2008) also identified high cost of feed as very serious drawback to profits realizable from catfish farming. This challenge was followed by lower perceived value and risk of losing profit from lower margin with mean value of 4.1132 and 3.8302 respectively. The constraints that posed least effect on discount pricing by catfish farmers are: competition, demand and economic condition with mean value of 3.0991, 3.1509 and 3.1651 respectively.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 SUMMARY

The study assessed pricing strategies in catfish farming in Kwara state, Nigeria. The specific objectives of the study were to describe the structure of catfish market, estimate the profitability catfish farming, determine the efficiency of catfish farming, identify the common types of price discounts and discount pricing strategies adopted by catfish farmers, determine factors influencing catfish production and identify the constraints hindering price discounting among catfish farmers in the study area.

Data were generated from 212 respondents with the aid of structured interview schedule. Analysis of data were carried out using Herfindahl index, percentage marketing margin, marketing efficiency and linear multiple regression were used to determine the structure, profitability, efficiency and factors influencing catfish production among farmers in Kwara state respectively while descriptive statistics (frequency, average , likert scale and weighted means) to determine the common types of price discounts, discount pricing strategies adopted by catfish marketers and the constraints hindering discount pricing in catfish farming.

Majority (95.8%) of the respondents were male and moderately aged people (31-60) with an average household size of 5 persons. Quantity discount is mostly (44.3%) used by the catfish farmers, while cash discount is least used in the study area. Of the different discount pricing strategies adopted by farmers, offering discount to new customer is mostly (79%) used by the catfish farmers, while offering free shipping to customers is the least frequently used strategy. The calculated Herfindahl index value of 0.006 shows a highly competitive and non-concentrated catfish market. The marketing margin was calculated to be 28.62%. This shows that catfish farming in Kwara state is profitable and it is therefore worthwhile.

Marketing efficiency value of (140.09%) indicates that catfish farmers are efficient. The multiple regression analysis shows that The distance to the nearest city, marketing services, marketing experience and amount of price discount were the important variables explaining catfish production among farmers in Kwara state. The most significant constraint hindering discount pricing strategies in catfish farming is the cost of production and was ranked first. The constraints that posed least effect on discount pricing by catfish farmers are: competition, demand and economic condition with mean value of 3.0991, 3.1509 and 3.1651 respectively.

5.2 Conclusion

The research work indicates that catfish farmers in Kwara state make use of price discount and price discounting strategies to enhance sales. This study clearly shows that catfish marketing is competitive and non-concentrated, profitable and efficient. The distance to the nearest city, marketing services, marketing experience and amount of price discount are the important variables explaining catfish production among farmers in Kwara state. Moreover, the most significant constraint hindering discount pricing strategies in catfish farming is the cost of production and was ranked first.

5.3 Recommendation.

1. It is recommended that catfish farmers should adopt price discount strategies during marketing to enhance sales.

2. The most significant constraint hindering discount pricing strategies is the high cost of production. It recommended that farmers should pool resources together and form cooperative societies. This will create an avenue to help members collectively through assistance such as loans, subsidized fishing inputs and other benefits from the cooperative society.

3. Farmers should be trained on efficient fish processing and storage techniques to reduce losses due to spoilage and raises profit thereby making it easier for adoption of price discount strategies.

4. The regression results showed that distance to the nearest city was significant, government should construct good roads to facilitate easy access to the nearest city for enhanced catfish marketing.

5. Catfish farming was found to have the potential of improving the living standard of farmers, unemployed youth should be encouraged to consider catfish farming as an enterprise.

REFERENCES.

Abdullai, A. (1983). The role of agriculture in reversing the present economic crisis in Nigeria. A public lecture organized by Nigerian Institute of Social and Economic Research (NISER) delivered at University of Calabar, November, 25.

Adebayo, E.F., Anyanwu, S.O., Ikenwachukwu, N and Onyia, L.U. (2014). Economics fish harvesting in Nigeria: a case study of Yola North Local Government Area of Adamawa State. IIFT Australia Conference Proceedings.

Adekanye, T. O. (1988). Readings in agricultural marketing. Lagos: Mexico Enterprises Ltd. Pp. 1, 2 and 12.

Adeniji, O. B., Adebayo, C. O., &Ajayi, O. P. (2012). Analysis of marketing margin of yam in selected rural areas of Niger State, Nigeria. *Basic Research Journal of Agricultural Science and Review*, *1*(3), 58-62.

Adeosun, O. and Adebukola, F. B. (2012): "Determinants of Income from Fish Marketing in Ibarapa Area of Oyo State, Nigeria" *Science Journal of Agricultural Research &Management*, 135 (6).

Adeyeye, S.A.O., Oyewole, O.B., Obadina, A.O, Omemu, A.M., Oyedele, H.A. and Adeogun, S.O. (2015).A survey on traditional fish smoking in Lagos State, Nigeria. *African Journal of Food Science* 9.2:59-64.

Agbebi, F. O., (2010). Salient Issues In Fish Marketing System In Nigeria. Department of Forestry, Wildlife and Fisheries Management University of Ado Ekiti, Ado-Ekiti,Ekiti State, Nigeria, *Journal of Environmental Issues and Agriculture in Developing Countries* V2(1);94-103

Agom, D.I., Etim, G.C. and Etuk, E.A. (2012).Analysis of Wholesale Frozen Fish Markets in Calabar, Cross River State, Nigeria. *Trends in Agricultural Economics*, 5: 61-69.

Ajibade, L. T., &Ojelola, A. O. (2004).Effects of Automobile Mechanics Activities on Soils in Ilorin, Nigeria. In *Geo-Studies Forum An International Journal of Environmental and Policy Issues* 2:18-27

Alabi, R. A and Aruna, M. B. (2006). Technical Efficiency of Family Poultry Production in Niger Delta, Nigeria. Journal Central European Agriculture 6(6):1281-1285

Ali, E. A, H. I. M., Gaya and T. N. Jampada (2008): Economic Analysis of fresh fish marketing in Maiduguri Gamboru Market and KachallariAlau Dam landing site of Northeastern Nigeria. J. Agri. Soc. Sci. 4:23-6

Akinwusi, F. (1995).EconomicsAssesement and the marketing system of smoked fish in Ibadan and its environs,M.sc.Dissertation, University of Ibadan.Pp12-32

Ames, C.O. (1970). Trapping versus substance in individual marketing. Harvard Business review:July-August.

Amin, M.A., Islam, M.R. and Hossain, M.B (2012).Marketing Channel of Dried Marine Fish in the South-eastern Coastal Belt of Bangladesh.Middle-East.*Journal of Scientific Research* 12 (3): 301-306 andIghoro, A (2017). Information needs of fish-feed entrepreneurs in Kainji Lake

Anene, A., Ezeh, C.I. and Oputa, C.O. (2010). Resources use and efficiency of artisanal fishing in Oguta, Imo State, Nigeria. *Journal of Development and Agricultural Economics* 2: 94-99.

Ashaolu, F.O., A.AAkinyemi, and L.S.O Nzekwe, (2006). Economic Viability of homestead Fish Production in Abeokuta Metropolis of Ogun State, Nigeria.*Asset series* A, 6 (2):209-220

Aswathy, N., Narayanakumar, R., &Harshan, N. K. (2014). Marketing costs, margins and efficiency of domestic marine fish marketing in Kerala. *Indian Journal of Fisheries*, *61*(2), 97-102.

Babalola, D.A, Bamiji, O and Isitor, S.U (2015).Economic potentials of fish marketing and women empowerment in Nigeria.Evidence from Oguns tate.Africa*Journal of Food, Agriculture, Nutrition and Development.* 15 (2); 27

Bagchi, M. and Raha, S.K. (2011).Post-Harvest Loss of Flower and its Impacts on Flower Marketing in Bangladesh.*Journal of Economic Affairs* 2.56: 205-211.

Bassey NE, Okon UE, Ibok OW, Umoh IU (2013): Comparative Analysis of the Economics of Aquacultural Fish Production in Some Parts of South South Nigeria. ARPN *Journal of Agriculture and Biological Science*.2013c; 8(8): 587-595.

Bassey Nsikan Edet, E. Okon Uwemedimo, Umoh Idaraesit Uwem and Nyong Eteyen Edet(2015) Analysis of the Determinants of Fresh Fish Marketing and Profitability among Captured Fish Traders in South-South Nigeria: The Case of Akwa Ibom State*British Journal of Economics, Management & Trade* 5(1): 35-45, 2015

Batra, R., and Ahtola, O. T. (1991). "Measuring the Hedonic and Utilitarian Sources of Consumer Attitudes," *Marketing letters* (2:2),159- 170.

Bemmaor, A.C., Mouchoux, D., (1991). Measuring the short-term effect of in-store promotion and retail advertising on brand sales: A factorial experiment.*Journal of Marketing Research* 28: 202 – 214.

Blattberg, R.C., Neslin, S.A., (1990). Sales Promotion: Concepts, Methods and Strategies. Prentice-Hall, Englewood Cliffs, NJ.

Bolton, R.N., (1989). The relationship between market characteristics and promotional price elasticities.Marketing Science 8: 153 – 169.

Bolwig, S., Ponte, S., du Toit, A., Riisgaard, I. and Halberg, N. (2010).Integrating poverty and environmental concerns into value chain analysis: A conceptual framework. Development Policy Review 28.2: 173-194.

Chartered Institute of Marketing. (2015). Marketing and the 7Ps: A brief summary of marketing and how it works. *The Chartered Institute of Marketing, Berkshire, United Kingdom* 1- 12.

Chen, H., Marmorstein, H., Tsiros, M., and Rao, A. R. (2012). "When More Is Less: The Impact of Base Value Neglect on Consumer Preferences for Bonus Packs over Price Discounts*," Journal of Marketing* 76:(4), 64-77.

Chevalier, J., and Goolsbee, A. (2003)."Measuring Prices and Price Competition Online: Amazon.Com and Barnesandnoble.Com," *Quantitative Marketing and Economics* 1(2):, 203-222.

Coughlan, S.A.T., Anderson, E., Stein, L.W. and El- Ansery, A.I. (2001).Marketing Channels.6th Edition. New Jerse, USA: Prentice Hall

Coulter, K. S., and Coulter, R. A. (2007). "Distortion of Price Discount Perceptions: The Right Digit Effect," *Journal of Consumer Research* 34(2): 162-173.

Coster, A.S. and Otufale, G.A. (2010).Economic Analysis of Frozen Fish Marketing in Ijebu Ode Local Government Area, Ogun State, Nigeria. Res. J. Soc. Sci. 1.5: 96-101.

Dambatta, M.A., Sogbesan, O.A., Tafida, A.A, Haruna, M.A and Fagge, A.U. (2016). Profitability and Constraints of Three Major Fisheries Enterprises in Kano State, Nigeria. Global *Journal of Science Frontier Research* (I) 16.1: 7-12.

Dauda, A.B, Ojoko, E.A. and Fawole, B.E. (2016).Economic Analysis of Frozen Fish demand in Katsina State, Nigeria.*Journal of Fisheries and Aquatic Science* 11: 93-99.

Dawson, S., and Kim, M. (2009). "External and Internal Trigger Cues of Impulse Buying Online*," Direct Marketing: An International Journal* 3(1): 20-34.

Department of Fisheries (2012).Fish Fortnight Compendium.Department of Fisheries, Ministry of Fisheries and Livestock. Government of Peoples Republic of Bangladesh,131

Diamantopoulos, A. (2005). Determinacao de precos in M. Baker (Org), Administracao de marketing, Rio de Jeneiro: Elsevier

Drucker P.F (1958) Marketing and economic development. *Jornal of marketing*, 252-259 (January)

Earl, P. E., and Potts, J. (2000). "Latent Demand and the Browsing Shopper," *Managerial and Decision Economics* 21(3-4), 111-122.

Edwards, S., Allen, A.J. and Shaik, S. (2005). Market Structure Conduct Performance (SCP) Hypothesis revisited using Stochastic Frontier Efficiency analysis. Selected paper for presentation at the American Agricultural Economics Association Annual Meeting, Long Beach, California, July 23-26, 2006. 4-5.

Enete, A. A. (2008). Vertical differentiation of cassava marketing channels in Africa. TROPICULTURA. 26 (4) 206-210.

Esiobu, N.S. and Onubuogu, G.C. (2014). Socio-economic Analysis of Frozen Fish Marketing in Owerri Municipal Council Area, Imo State, Nigeria: An Econometric Model Approach. *Scholarly Journal of Agricultural Science* 4(8): 449-459.

Esu, B. B., Asa, U. A. and Iniedu, M. O. (2009) Costs and returns of fish production using earthern ponds in Akwa Ibom State, Nigeria, Nigerian Journal of Agriculture, Food and Environment, 5(2-4): 26-29.

Eze, S. O., A. N. Ezeh and E. A. Onwubuya (2010). Women marketers' perceived constraints on selected agricultural produce marketing in Enugu South Local Government Area: challenges of extension training for women groups in Enugu State, Nigeria. Agroscience journal of tropical agriculture, food, environment and extension, 9(3): 215- 222

FAO/WHO, (2011).Report of the Joint FAO/WHO Expert Consultation on the Risks and Benefits of Fish Consumption.Food and Agriculture Organization of the United Nations, FAO Fisheries and Aquaculture Report No. 978, Rome; World Health Organization, Geneva.1-50.

FAO, (2012). The state of world fisheries and aquaculture. FAO Fisheries and Aquaculture Department, FAO, Rome, 2012

Federal Department of Fisheries (FDF. 2009).Nigeria National Aquaculture Strategy.Assisted by FAO.Formally approved by Government.p.18.

Fregene, T.B. and Bolorunduro, P.I. (2009).Role of women in food security and seasonal variation of expenditure pattern in coastal fishing communities in Lagos State. *Journal of Agricultural Extension* 13(2): 21-33.

Friedman, D. D. (1990). Price Theory: An Intermediate Text, Southern Prestige Publishing Co.

Ghose, A., and Han, S. P. (2014). "Estimating Demand for Mobile Applications in the New Economy," *Management Science* 60(6): 1470-1488.

Haxthausen, O. (2008) Customer Focus. American Marketing Association

Heath, T. B., Chatterjee, S., and France, K. R. (1995). "Mental Accounting and Changes in Price: The Frame Dependence of Reference Dependence," *Journal of Consumer Research*), 22(1): 90-97.

Heil, O. P., & Helsen, K. (2001). Toward an understanding of price wars: Their nature and how they erupt*, International Journal of marketing*, 18 (1): 83-98

Hirschman, E. C., and Holbrook, M. B. (1982). "Hedonic Consumption: Emerging Concepts, Methods and Propositions," *The Journal of Marketing*), 92-101

Idachaba FS. Food Policy in Nigeria. Agricultural Research Bulletin. (2000); 1:162.

Iliyasu, A.H., J.I. Onu, A. Midau and J.S. Fintan, (2011).Economics of smoked and dried fish marketing in Yola North and South local Government areas of Adamawa State, Nigeria. J. Agric. Soc. Sci., 7: 13–16

Ismail, A., Tijani, B.A., Abdullah, A.M. and Mohammed, B. (2014).Analysis of Marketing Channel and Market Structure of Dried Fish in Maiduguri Metropolis of Borno State, Nigeria.*European Journal of Business and Management* 6 (7): 147-155.

Kalyanaram, G., and Winer, R. S. (1995). "Empirical Generalizations from Reference Price Research," *Marketing science* 14(3_supplement),:G161-G169.

Kawarazuka, 2010. The contribution of fish intake, aquaculture, and small-scale fisheries to improving nutrition: A literature review. *The World Fish Center Working Paper* No.2106.The WorldFishCenter, Penang, Malaysia.44 p.

Kwara State Agricultural Development Project (KWADPs) progress report 2010.

Lancioni, R. (2005). A strategic approach to industrial product pricing: The pricing plan. Individual marketing management, 34(2), 177-183

Lem, A., Bjorndal, T. and Lappo, A. (2014). Economic analysis of supply and demand for food up to 2030 – Special focus on fish and fishery products. *FAO Fisheries and Aquaculture Circular* No. 1089. Rome, FAO. 106 pp.

Madugu A.J. and A. Edward (2011): Marketing and Distribution Channel of Processed Fish in Adamawa State, *Nigeria Global Journal of Management and Business*

Max K. Adler (1968) Modern Market Research, Crosby Lockwood and co.

Maxwell, S. (2002). "Rule-Based Price Fairness and Its Effect on Willingness to Purchase," *Journal of economic psychology* 23(2): 191-212.

Monroe, K.B.(2013). Pricing making profitable decision (3rd ed.) New York: MC Graw-Hill/Irwin (International edition)

Murphy, L. (2015). "Saas Market Positioning: How to Compete in Crowded Markets." Retrieved May 24, 2016, from http://sixteenventures.com/saas- competition

Nagle, T. T. and Holden, R. K. (1995).The strategy and tactics of pricing. Englewood Cliffs, NJ: Prentice-Hall.

National Bureau of statistics (2016) Demand and supply of fish in Nigeria

Nwabunike, M .O.(2014)COST BENEFIT OF FRESH FISH MARKETING WITHIN ABAKIALIKI METROPOLIS *International Journal of Animal Health and Livestock Production Research*1(1): 12-27.

Nwaru, J. C., A. C. Nwosu and V. C. Agummuo (2011).Socio-economic determinants of profit in wholesale and retail banana marketing in Umuahia agricultural zone of Abia State, Nigeria. *Journal of sustainable development in Africa*. 13(1) 200-210.

Odebiyi, O.C., George, F.O.A., Odulate, D.O., Agbonlahor, M.U. and Olaoye, O.J. (2013).Value- Chain Analysis for Coastal Fisheries Development in Nigeria.*Global Journal of Science Frontier Research Agriculture and Veterinary* 13(11): 7-15.

Offor, E.I., Ibeagwa, O.B. and Ikemefuna, C.S. (2016).Performance of fresh fish marketing in Port Harcourt Municipal, Rivers State, Nigeria. *Nigerian Journal of Agriculture, Food and Environment* 12(3): 133-136.

Okwuokenye, G. F., &Onemoease, E. A. (2011). Influence of socio-economic characteristics of yam sellers on marketing margins among yam wholesalers in Delta State, Nigeria. *Journal of Agriculture and Social Research (JASR)*, *11*(1).

Oladimeji, Y. U., Abdulsalam, Z., Damisa, M. A., &Omokore, D. F. (2013).Estimating the determinants of poverty among artisanal fishing households in Edu and Moro local government areas of Kwara State, Nigeria.*Agriculture and Biology Journal of North America*, *4*(4): 422-429.

Olukosi, J. O, Isitor, S. U and Ode, M. O (2007). Introduction to Agricultural marketing and prices: principles and applications. Living Book series, Abuja Nigeria PP3, 37, 44

Omonona, B.T and Ajani, E.K. (2014).Value Chain Analysis of fish production in Nigeria: A case study of Lagos State. Draft project report submitted to the National Program for Food Security (npfs), Federal Ministry of Agriculture and Rural Development, Abuja.

Onyango, C.O. (2013). Analysis of Structure, Conduct and Performance of small ruminant stock market participants of Isiolo-Nairobi trading market, Kenya.M.ScProject.Agricultural and Applied Economics of Egerton University.xiii+93pp.

Onyeneke, R.U. and Nwaiwu, J. (2012). Micro level analysis of beef and fish consumption in Imo State, Nigeria. Agricultural Research Review 1: 1-8.

Osarenren, C.O. and Ojor, A.O. (2014).Marketing analysis of smoke-dried fish in Etsako East Local Government Area of Edo State, Nigeria. *Net Journal of Agricultural Science* 2.3: 104-106.

Oyinbo, O. and Rekwot, Z.G. (2013). Fishery production and economic growth in Nigeria: Pathway for sustainable economic development. *Journal of Sustainable Development in Africa* 15(2): 99-109.

Ozigbo, E., Anyadike, C., Adegbite, O. and Kolawole, P. (2014).“Review of Aquaculture Production and Management in Nigeria.”*American Journal of Experimental Agriculture* 4(10): 1137-1151.

Phiri, L.Y., Dzanja, J., Kakota, T. and Hara, M. (2013). Value chain analysis of lake Malawi fish: a case study of Oreochromisspp (Chambo). *International Journal of Business and Social Science* 4(2): 1-31.

Raghubir, P, Inman, J.J & Grande, H. (2004). The three faces of consumer promotions. *Califonia management Review*, 46 (4): 23- 42.

Rahman, M.M., Hossain, M.A., Fatematuzzhura, S., Tasnoova, F. Ahamed, M.Y. Hossain and Ohtomi, J (2012). Fresh Fish Marketing Status in the Northwestern Bangladesh: *Recommendations for Sustainable Management*. Our Nature 10 (1): 128-136

Sheng, S., Parker, A. M., and Nakamoto, K. (2007). "The Effects of Price Discount and Product Complementarity on Consumer Evaluations of Bundle Components," *Journal of Marketing Theory and Practice* 15(1): 53-64.

Shepherd, W.A. (2007).A guide to marketing costs and how to calculate them.Agricultural Management, Marketing and Finance Service Rural Infrastructure and Agro-Industries.FAO 00153 Rome, Italy.1-76.

Suleiman, A. (2007).Economic analysis of artisanal fish marketing in Kebbi State of Nigeria.APh.D Thesis, Department of Agricultural Economics and Rural Sociology, Ahmadu Bello University, Zaria.xvi + 226pp.

Tanko, L., Nabil, I.A. and Maikasuwa, M.A. (2014). Profit Efficiency of Small Scale Layer Producers in Some Selected Local Government Areas in Sokoto State, Nigeria. *International Journal of Modern Research and Reviews* 2(1) 52-61.

Tellis, G. J. (1986). Beyond the many faces of price: an integration of pricing strategies; The *Journal of Marketing*, 50 (4): 146-60.

Thilsted, S.H., James, D., Toppe, J., Subasinghe, R. and Karunasagar, I. (2014). Maximizing the contribution of fish to human nutrition. ICN2 Second International Conference on Nutrition: Better nutrition, better lives. Food and Agriculture Organization of the United Nations, Rome and World Health Organization, Geneva.1-16.

Thompson, A. (2015). Fisheries Supply Chain Analysis: Fish products and tiers. Panmore Institute.

To, P.-L., Liao, C., and Lin, T.-H.(2007). "Shopping Motivations on Internet: A Study Based on Utilitarian and Hedonic Value," *Technovation* 27(12): 774-787.

United States Agency for International Development (USAID) (2010). Best Management Practices for Fish Farming Package of Practices (POP) for Fish Farming. USAID Markets Programme-Nigeria.1-38.

Ugwumba, COA and Nnabuife ELC (2008).Comparative Study on the Utilization of Commercial Feed and Home-made Feed in Catfish Production for Sustainable Aquaculture.Multidiscipl. J. Res. Dev., 10: 164–169

Umoinyang, M.E. (2014): Economics of Fish Marketing in AkwaIbom State, Nigeria. MSc. Thesis submitted to the department of agricultural economics, UNN.

World Bank. (2014). Nigeria Data and Statistics. Retrieved from http://www.worldbank.org/en/country/nigeria.

Xu, Y., & Huang, J. S. (2014).Effects of price discounts and bonus packs on online impulse buying.*SocialBehavior and Personality: an international journal*, *42*(8): 1293-1302

APPENDIX.

KWARA STATE UNIVERSITY, MALETE
DEPARTMENT OF AGRICULTURAL ECONOMICS AND EXTENSION SERVICES
FACULTY OF AGRICULTURE

QUESTIONNAIRE ON ANALYSIS OF PRICING STRATEGIES IN CATFISH FARMING IN KWARA STATE, NIGERIA.

Dear respondents,

This questionnaire is designed to examine pricing strategies in catfish farming in Kwara state, Nigeria. Please provide answer to each question honestly and accurately, as much as possible, because your responses are very crucial to this study. All information provided will be used solely for academic purposes. I therefore solicit for your maximum cooperation.

Thank you.

Interviewer:…….. Date of Interview: …….
Interviewee name and number …….
Market/Place:…….....
Time Started: …….. Time Ended.....

A. Background information

1. Name (optional): …….
2. Age: ……
3. Sex: ……
4. Number of years spent in school ……..
5. Household size ……
6. How long have you been trading on catfish business? .....
7. What is your primary occupation? Catfish marketing [ ], others [ ]
8. What other food commodities do you trade on (specify)…….
9. In what quantities do you trade on catfish (a) Wholesale i.e. in bus loads [ ]
   (b) others [ ]

B. Structure of Catfish Market

10. What is the size of your pond ……
11. How many ponds do u have …….
12. When is the peak period of catfish supply to the market? ..... And when is the low period of supply to the market respectively? .....
13. How does this affect catfish market price, the quantity of catfish traded and the profit you make? .....

(a) Peak supply period = fall in price, more quantity sold and more revenue profit realized
(b) Low supply period = rise in price, less quantity sold and less revenue profit realized
(c) Peak supply period = fall in price, more quantity sold but less revenue/ profit realized
(d) Low supply period = rise in price, less quantity sold but more revenue/profit realized.

14. Do you have paid sales boys or girls? Yes [ ] No [ ]
15. How do you pay them?.In cash ( )in commission( )
16. How do you measure catfish for sale (a) weight[ ] (b) others[ ]

17. How much do you sell per kg…….
18. What quantity do you sell per cycle? ……..
19. How much do you realize from sales per cycle? .....
20. What is the cost of catfish that get spoiled per cycle? …….
21. What is the kg of spoiled catfish per cycle? ……..

C. Marketing Efficiency and Margin

22. What is the average producer price per kg of catfish= ₦ ……..
23. Average costs of value added to smoked and fresh fish =₦ ……..
24. Cost of transportation = ₦……..
25. Costs of pond= ₦…….
26. Cost of juvenile ₦……..
27. Cost of feed ₦……..
28. Cost of fuel ₦……
29. Cost of labour ₦…….
30. Cost of spoiled fish ₦……
31. Cost of other marketing services? ₦……..
32. Total costs incurred per cycle = ₦……
33. Total amount sold per cycle = ₦ …….

D. Factors determining profitability of catfish

34. Do you give price discount? ……..
35. How much discount do you give per kg/sales/respondents? ……..
36. Do your customers buy more when you give them discount? Yes ( ) No ( )
37. What are the most common types of price discounts do you adopt (a) Quantity discount(b) trade discount (c) cash discount (d) seasonal discount (e) geographical discount
38. Tick the discount pricing strategies adopted by your farm?(a) customer value discounts (b) offer discount to new customer (c) offer free shipping (d) prepayment discount (e) offer discounts to all customer.
39. What is the size of your pond in m^2? …….
40. Do you have access to credit? ……..
41. If yes, how much credit do you have access to in the last 5 years? ₦……..
42. Do you have catfish traders' union? Yes [ ] No [ ]
43. Are you a member and for how long have you been a member? .....
44. If not a member, give reasons why you are not a member of the association? .....
45. Is membership optional? Yes [ ] No [ ]
46. In what ways does your non-membership help or hinder your catfish business? ……..... .....
47. What is the distance of your farm to the state capital? ……
48. What is the distance of your farm to point of supply? ……
49. What is your method of preservation? Modern ( ) others ( )
50. How much do you spend on labour per cycle? ₦ …….

E. Challenges hindering Discount Pricing in Marketing

46.Kindly rank the following challenges of discount pricing in catfish farming using a 5-point Likert scale. The response options and values assigned were as follows: strongly disagree (SD) = 5; Disagree (D) = 4; Agree (A)= 3; Moderately Agree (MA) =2 and strongly agree (SA) = 1.

S/N	Challenges	SD	D	A	MA	SA
1	Demand					
2	Competition (price war)					
3	Cost of production					
4	Government policy					
5	Discount pricing can lower perceived value					
6	Risk of loosing profits from lower margins					
7	Marketing objective					
8	Economic condition					

Note: Strongly Disagree (SD); Disagree (D); Agree (A); Moderately Agree (MA) Strongly Agree (SA)