Dissertation By

NWOKE, EVERISTUS CHINYEAKA

IMO STATE UNIVERSITY, OWERRI NIGERIA

Ajustment Strategies of Livestock Entreprises in a depressed Economy: a Study of Poultry Entreprises in Owerri Imo State of Nigeria

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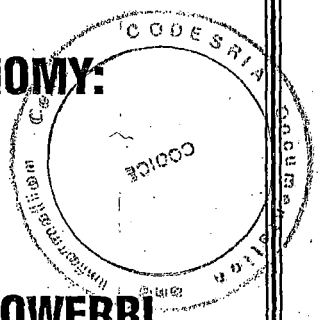

A STUDY OF POULTRY ENTERPRISES IN OWERRI IMO STATE OF NIGERIA.

NWOKE, EVERISTUS CHINYEAKA
95/PG/M.SC/046

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A STUDY OF POULTRY ENTERPRISES IN OWERRI, IMO STATE OF NIGERIA.

An M.Sc. Degree thesis in Agricultural Economics submitted to the school of Agriculture, College of Agriculture and Veterinary medicine, Imo State University, Owerri, Nigeria.

BY

NWOKE, EVERISTUS CHINYEAKA

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DEDICATION

This work is dedicated to my late parents Chief and Mrs. Nwokenochie Ohakosim, the less privileged in the society and the Council for Development of Economic and Social Research in Africa (CODESRIA).

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Nwoke E.C.
Department of Agric. Economics
(IMSU).

CERTIFICATION

ADJUSTMENT STRATEGIES OF LIVESTOCK ENTERPRISES IN A DEPRESSED ECONOMY: A STUDY OF POULTRY ENTERPRISES IN OWERRI, IMO STATE OF NIGERIA.

It is hereby certified that this thesis is acceptable in partial fulfillment of the requirements in for the award of an M.Sc. Degree of the Imo State University.

NAME	*SIGNATURE*	*DATE*
SUPERVISOR: DR. C.U. NWAJIUBA		02/11/99
COORDINATOR: DR. A.E. ONWEAGBA	Dr. A.E. Onweagba	9/12/99
DEAN: PROF. F.N. MADUBUIKE		9-12-99
EXTERNAL EXAMINER:	PROF. C.J.C. AKUBUILO	25/11/99
CHAIRMAN BOARD OF EXAMINERS:	Prof F N Madubuike	9-12-99

ABBREVIATIONS AND ACRONYMS

AP	AVERAGE PRODUCT
CBN	CENTRAL BANK OF NIGERIA
CODESRIA	COUNCIL FOR DEVELOPMENT OF ECONOMIC AND SOCIAL RESEARCH IN AFRICA.
EP	ELASTICITY OF PRODUCTION
FAO	FOOD AND AGRICULTURAL ORGANISATION
GDP	GROSS DOMESTIC PRODUCT
IMSU	IMO STATE UNIVERSITY OWERRI
MP	MARGINAL PRODUCT
SAP	STRUCTURAL ADJUSTMENT PROGRAMME.

ABSTRACT

This study identified various categories of poultry enterprises, examined their problems as well as their adjustment strategies. Eighty (80) poultry farmers in Owerri, Imo State of Nigeria were selected. Questionnaire, records and observations were used in the collection of required information.

It was found that high cost of feeds was the most mentioned problem facing poultry enterprises in Owerri. Other problems that discouraged investments in the poultry industry included high cost of drugs and vaccines, equipment cost, poor sales and low profit margin coupled with reduced net profit .

The use of non-conventional feeds, aggressive marketing and other cost reduction strategies are employed by poultry farmers to remain in business. The study therefore recommends these, as well as survival strategies under a distressed economy . The use of poultry by- products and industrial organic wastes as substitute or supplement to conventional feeds in poultry feeding should be explored.

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CHAPTER ONE

INTRODUCTION

1.1 BACKGROUND OF THE STUDY

Livestock especially poultry occupies an important position in the supply of animal protein to Nigeria's teeming population. On the average, livestock account for half of agricultural output when both their direct and indirect contributions are considered. Directly livestock produces food and non-food products (hides and skins) and indirectly it supplies essential inputs to agricultural production.

The contribution of livestock to the farming community also includes draught power and manure, increased economic stability and financial security. According to the CBN (1989) the sector contributed about N5.1 billion in 1989 which represents 5.9% of the GNP of Nigeria .

Inspite of the significant importance of agriculture to the overall economic growth and development of the country, its rate of growth and development of has in the recent past not been encouraging. Ighen (1987) traced this poor performance of the Nigeria Agricultural sector to certain endemic and imposed problems. These problems include among others, inadequate loanable funds, poor production technology, low use of productive inputs, poor production, poor management and structural equilibrium. Before the oil boom in 1970, the Nigeria economy could be described as basically agricultural. The sector accounted for more than 60% of the Gross Domestic Product (GDP) as well as between 70% and 80% of government revenues. Around this time, the contribution of industries to GDP was between 4% and 5%. There was no balance of payment problem given the huge export earning from agricultural commodities which was in high demand in international markets. Also foreign debt was not a problem as the country's imports was less than earnings realized from huge agricultural export. Nigeria accumulated relatively huge foreign reserves.

The oil price shocks of 1973-74 led to tremendous increase in national earnings. The economy became dominated by the petroleum sector. The period of boom recorded substantial growth that was generated mainly by the oil sector. The economy became monocultural with petroleum contributing about 30% of GNP in 1980 compared to 22% in the early 70's (Ihimodu 1993) . The proceeds from the oil revenues was particularly channelled towards improving infrastructure without due considerations of its long-run effect in the overall economy. As a consequence, the contribution of agriculture to the economy fell drastically during the period. Production of Agricultural commodities was neglected. Government imported food items including livestock products. The importation of agricultural commodities subjected the agricultural sector to further decline.

The early signs of the current crises of the Nigeria economy appeared in 1976, when the service sector of the economy began to record persistent deficit, Although the trade balance was still in surplus, this was not to last and by 1978, it too began to run a deficit. By late 1970's Nigeria became a major importer of food items while production of export crops declined substantially, making the country dependent on international oil market for almost all of its earning and revenues. The reliance on oil market rendered the economy very vulnerable to external shocks. The effect of this situation is recession as manifested by fiscal crises, foreign exchange shortage, balance of payment and external debts crisis, high level of unemployment, company closures, negative economic growth, low consumption etc. This situation market the threshold of Nigeria economic depression.

According to Okonkwo (1990) economic depression is defined as a period in the business cycle in which the economy is operating with substantial unemployment of its resources and there is very little business and consumer optimism as reflected by a sluggish rate of capital investment and consumption. Nigeria economic problem has virtually affected all facets of the economy. This has led to most establishment either producing below installed capacity or grounded. Economic depression has had adverse effects on the livestock sub-sector. Identified

problems include, problems of building and equipment, scarce and high cost of feeds, labour, drugs and vaccines with weak consumer purchasing power.

The increases in input prices were attributed to two main reasons Viz the sharp devaluation of the Naira exchange rate and shortage of foreign exchange, and the high interest rate which increased the cost of working capital.

Furthermore, the annual output of livestock feeds dropped drastically while expansion of livestock enterprises especially poultry business became difficult. This is particularly for small holders who control the bulk of the business. The implication of these problems are low production, high cost of livestock production, poor returns on investments, low consumption and drift from livestock business to other profit generating business.

1.2 PROBLEM STATEMENT

The poultry industry in Nigeria and particularly in Imo State is at critical cross roads. The enthusiasm and energy with which farmers both at the commercial and small scale levels embraced poultry business is now dampered by hard economic returns (Iloeje 1997). Within the last ten years, the country has witnessed the liquidation of several poultry ventures. There has been substantial reduction in production and a number of producers have left the business as they are unable to sustain the losses incurred from the huge increases in input costs, particularly feed. The continued poor performance has been traced largely to inadequate supply and high cost of feeds. In the early 1970's when economy was strong, feed, day-old chicks, vaccines and medicines were imported and poultry meat eggs were comparatively cheap. As a result of the nation economic reforms, feeds and other raw materials are no longer imported. Cost of poultry has risen tremendously. Balogun and Alawa (1989) in their study remarked that structural adjustment programme (SAP) has had adverse effects on the livestock sector. The most notable of the effects is the escalation in the price of inputs employed in the sector.

As part of the structural adjustment of programme came the ban on importation of maize which is a major component of poultry and livestock feed in general. The impact was that the price of maize rose astronomically as the there was scarcity of maize. Although maize production is reported to have increased over the years, more of these have gone into the export market, while maize import is restricted despite trade liberalization as part of the structural adjustment programme (Nwajiuba 1997). Furthermore, the increase in the production of maize was not sufficient to meet with domestic demand hence, industries like breweries and pharmaceuticals now compete with the poultry industry for the available maize supply. Producers therefore face the paradoxical situation of having to reduce production price despite rising cost of production. This translates to depressed consumer demand. The net result is substantial reduction in the output of poultry products. The question arises as to what extent has the livestock enterprises adjusted its strategies under the depressed economy in Nigeria especially the poultry enterprises in Owerri Imo State.

1.3 RESEARCH OBJECTIVES

The broad objective of the study was to examine the adjustment strategies of livestock enterprises in Nigeria's depressed economy with emphasis on poultry business in Owerri.

Specifically, the study will

1. Identify the various categories of poultry enterprises.
2. Identify the problems of poultry enterprises.
3. Examine the profitability of different enterprise.
4 Determine their survival strategies as well as the extent to which the strategies are implemented.
5. Provide some policy suggestions based on the finding.

1.4 RESEARCH HYPOTHESES

The following null hypothesis will be tested

1. Feeding cost is not a constraint to poultry production in Owerri.
2. Capital input is not a limiting factor in poultry production.
3. Labour costs do not significantly affect net profit in poultry production.

1.5 SIGNIFICANCE OF STUDY

The continued poor performance of the nation's livestock enterprise especially poultry farming has been traced to the prevailing economic depression. As a result, there is need to look inwards for adjustment strategies in order to cope with the situation.

This work therefore provides answers to how livestock enterprises with emphasis on poultry survive under economic depression. Furthermore, the contribution to knowledge of this study would include

(i) Enlighten the poultry operators and the intending ones on the problems of poultry enterprises.

(ii) Enlighten the poultry farmers and the general public on adjustment options to economic depression

(iii) Educate poultry operators and the general public on the importance of strategy formulation and adoption.

(iv) The finding will reveal possible means of survival.

1.6 LIMITATION OF THE STUDY

This study was constrained by lack of accurate record keeping and the fear of future taxations even when told that the questionnaire were for academic purposes. Some farmers declined to answer questions about their financial positions.

1.7. DEFINITION OF TERMS

Adjustments:

Adjustment is a process of correcting imbalance or dislocations in the economy (Obadan 1993). It is a policy measures aimed at coping with crisis in the economy. Adjustment become inevitable in the face of fundamental or structural imbalance and overall macro economic instability. This results to problems in demand and supply of goods and services. Nigeria's livestock sector especially poultry enterprise has been saddled with a lot of problems which ranges from high costs of feeds, drugs and vaccines, labour equipment to other forms of problems. These problems have resulted to poor performance for this sub-sector of the economy. Therefore, there is need to look for alternative ways of survival while the economic depression lingers. The alternative ways of survival at minimal cost while maximising returns is what is known as adjustment in the context of this work. This may be in terms of cost reduction, use of non-conventional feeds, use of local equipment amongst others.

STRATEGIES:

As a consequence of economic depression and the poor performance of livestock sub-sector, there is need to adopt measures in order to remain in business and at the same time achieve organizational objective. According to Schewe (1987), strategy is described as a guidance for competitive warfare that will direct the actual actions of the organization which specifies series of manoeuvres designed to obtain a particular result. It is equally seen as a pattern of the organisation responses to its environment over time. Curzon (1983) defined strategy as the science and art of employing business resources to secure objectives with emphasis on adjusting to a competitive environment. As a result of the situation which the nation's economy subjected business enterprises especially poultry, there is need

to develop and adopt measures so as to remain in business and at the same time achieve result. These measures no matter how little there are but result-oriented are what is known as strategies.

DEPRESSED ECONOMY

Depression is "that state of the economy in which men and machinery remain unemployed persistently as compared with a recession during which unemployment is of short durations. Dangogo (1995) defined economic depression as a situation whereby business becomes slow due to lack of patronage. It is usually associated with huge overhead cost, shrinking profit and low returns. In the view of Okonkwo (1990) economic depression is a period in the business cycle in which the economy is operating with substantial unemployment of its resources and there is very little business and consumer optimism as reflected by a sluggish rate of capital investment and consumption.

CHAPTER TWO

LITERATURE REVIEW

2.1 ECONOMIC DEPRESSION

According to Okonkwo (1990), economic depression is defined as a period in the business cycle in which the economy is operating with substantial unemployment of its resources and there is very little business and consumer optimism as reflected by the sluggish rate of capital investment and consumption. Several writers such as Okonkwo (1986), Salami (1985), Dangogo (1995), Ihimodu (1993), Obadan (1993) are in agreement on the general features of economic depression. It is the general opinion that economic depressions are generally associated with an exceptionally large amount of unemployment.

According to Okonkwo (1986) economic depression is characterised by unemployment of labour and a level of consumer demand that is low in relation to the capacity of industry to produce goods for consumption. At this period, there is a substantial amount of unused industrial capacity and average level of price often drifting slowly downward. Again the period is permeated with mild inflation, business profits very low coupled with, lack of confidence in the future, and businessmen unwilling to take risks in making new investments. In his view Salami (1985) stated that the symptoms of economic depression included inflation, unemployment, balance of payment deficit, acute shortage of essential commodities and rising crime wave etc. Dangogo (1995) summarized the features of economic depression to involve low returns, shrinking profit and huge overhead cost.

Obadan (1993) asserted that economic depression is characterised by general macro-economic instability that is excess of aggregate demand over aggregate supply as reflected in huge external current accounts deficits and depletation of foreign exchange reserves. He cited other features to include burgeoning fiscal deficits,

recession, galloping inflation, unemployment, huge backlog of uncompleted public sector projects, factory closures, large retrenchment, acute shortage of essential commodities and external debt difficulties.

The period of economic depression are regular periods of profound social unrest, revolutionary movements designed to stabilize the economy.

2.2 NIGERIA'S ECONOMIC PROBLEM: IMPLICATIONS FOR THE AGRICULTURAL SECTOR

The 1970s represents an important turning point in the socio-political development of Nigeria. As part of the remarkable achievement, the country observed the spontaneous but dramatic change in the main source of its revenue. There was spontaneous switch from a subsistence agarian society to one driven largely by crude petroleum sector (Obadan 1993). The genesis of Nigeria's economic depression was traced to a shift from reliance in the agricultural sector to dependence almost entirely on the oil sector (Ihimodu 1993). Before the economic down time, the sector contributed to more than 60% of the Gross Domestic Product (GDP), 70-80% of the country's foreign exchange as well as engaged about 80% of the work-force.

During the period, Nigeria attained some level of self-sufficiency in food and only varying percentages of the nations food demand were imported especially processed ones. The period beginning from 1970 witnessed the drastic change from a predominantly agricultural economy to petroleum dominated economy with oil accounting for more than 90% of exports and the main source of both federal and state revenue. Between 1972 and 1974, federal revenue from oil increased five-fold constituting 80% of total revenue (Faruqee 1994). Nigeria's new source of revenue radically affected the slope and content of investment, production and consumption patterns, the Governments approach to economic management and the policies and programmes implemented. Agriculture was not favoured as a result of the development.

The favourable oil shock of 1973 - 1974 ushered in the era of oil boom in Nigeria. The sudden improvement in government revenue provided the basis for greatly enhanced level of public sector investment (Obadan 1993). The boom however, also encouraged the existence of structural imbalance and the substance of inappropriate macro-economic policies.

Okonkwo (1986) observed that the wind fall from oil revenue was particularly channelled towards improving infrastructural and non-oil productive capacity. There were also substantial increases in public spending in health education and other social services throughout the nation. In his own contribution, (Faruqee 1994) stated that the rapid growth of the public sector and the construction boom that accompanied the massive investment programme altered the prevailing pattern of relative prices and changed the underlying structure of the economy. High wage and prices increases secured the resources needed to accommodate the demand in non-traded goods but, they depressed the non-oil traded goods sector.

Furthermore, an exchange rate policy that allowed the Naira to appreciate with corresponding rise in oil revenues coupled with rising domestic costs precipitated to the collapse in international competitiveness. To aggravate the situation, it appeared that our leaders did not fully consider the inherent dangers in the economy relying heavily on a primary commodity whose demand is volatile in international market. The consequences of these policies were mainly on Agriculture hence, it suffered a lot of draw backs. The relative importance of the agricultural sector declined from 31.0% in 1973 to 22.9% in 1980 while the contribution of the oil sector averaged 23.1% during the period 1973 - 1980 (Obadan 1993).

Agricultural exports were particularly hard hit hence exchange rate was allowed to appreciate substantially thereby triggering off unprecedented high import propensity in the country. By late 1970's, Nigeria became a major importer, while production of export declined substantially, subjecting the country to be dependent in a volatile international oil market for almost all of its export earnings and most of the government revenues (Okonkwo 1986).

In their studies, on implications of economic depression in Nigerian economy (Obadan and Egbase, 1992) admitted that the oil boom brought with it some fundamental changes and developments in the economy which include, the erosion of the competitiveness of the agricultural sector by an over valued exchange rate, inadequate pricing policy, rural urban migration and neglect arising from the oil boom syndrome.

Consequently upon the adverse terms of trade against agriculture, the economy witnessed an exodus of the agarian population from the farms into the cities in search of contracts and white-collar jobs. As a result, agricultural production fell drastically in absolute terms.

Finally inspite of the huge foreign exchange and revenue generated from the oil sector the oil economy was also characterised by high level of budget and balance of payment deficits. By the early 1990, however, oil market had collapsed. Government revenues for example fell from N13.0 billion in 1980 to N7.2 billion in 1983.

In order to meet the domestic demand, the government resorted to accumulating loans particularly from external sources and especially those with short-term and high interest rates from private commercial sources (Ihimodu 1993). For example from a debt outstanding of a mere N174.4 million in 1970, it rose to N1.9 billion in 1980 and about N86.6 billion in 1986. The combination of these factors, led to balance of payment deficits, scarcity of foreign exchange and low capacity utilization due to shortage of raw material and spare parts. This marked a turning point in the Nigerian economy. Indeed between 1982 and 1984, the country had became saddled with negative trends in economic growth as indicated by the decline in the gross domestic product (GDP) (-.35% in 1982, -5.37% in 1983 and -5.18% in 1984), Persistent current account and budget deficit, a huge backlog of uncompleted projects especially in the public sector, factory closures, large scale retrenchment, acute shortages of essential commodities and galloping inflation.

In addressing the crisis situation, various administrations/ government

resorted to implementing a number of policy measures which were demand management in nature. These measures are contained in the 1978 Import Prohibition Decree, the 1982 Economic stabilization Act and the national Economic decree of 1985/1986 Structural Adjustment Programme etc. Inspite of all these measures, the nation's economy is still unhealthy, hence none of the measures addressed the problems squarely.

2.3 DEPRESSED ECONOMY AND NIGERIA'S ENTERPRISES

The general effects of depressed economy in Nigerian business cycle be it agricultural, manufacturing and trading is almost the same. The effects cuts across almost the input-factors-capital, labour, materials etc. According to Mabogunje (1987), the effects of economic depression include;

Insufficient capital: Economic depression is usually synonymous with scarcity of money which its implication is insufficient capital supply to entrepreneurs. During the period, business men finds it difficult to save money hence turnover is low, interest rate is too high coupled with their inability to source funds from banks. This translates to low investment.

Shortage of raw materials: Majority of our enterprises source their raw materials abroad and therefore depends in the exchange rate for this purpose. Due to high rate of exchange most of them cannot source their raw materials as such which the resultant effect is that either they are producing below installed capacity or temporarily out of business. The local sources are grossly inadequate and where they are available will not meet the required quantity and quality.

Inadequacy of equipment and spare parts: shortage of production equipment is another critical effects of depressed economy on economic activities. The high exchange rate presents problems to procurement of production equipment and spare parts from developed countries.

High price of products: The high cost of production resulting from high cost of factors of production such as raw materials, labour, capital and other

associated costs is translated into high price of products. This situation affects the profit margin as well as result to low sales.

Scarcity of commodities: Due to non-availability of raw materials and other production inputs, producers tend to produce below installed capacity which its implication is aggregate demand greater than aggregate supply.

Low profit: The overall objective for engaging in any venture is to excel or make profit. In a depressed economy, this motive is defeated hence the high cost of production reduces the mark-up; a business will like to add in other to break even. If the markup is too high, the market price of the product will be scaring to potential buyers. Also low sales associated with depressed economy results to low profit hence, the higher the sales, the more the profit.

No new investment: Hence profits are usually low during economic depression, this development does not encourage investment. Confidence in the future business will be lacking and as a result, entrepreneurs will be unwilling to take risk in making new investments.

Other effects of economic depression includes low capacity utilization, unemployment, fluctuation in business activities, etc.

2.4 HISTORY OF COMMERCIAL POULTRY IN NIGERIA

Poultry Enterprise started in Nigeria in the late fifties with the importation of selected breeds of exotic poultry viz Rhode Island Red, White Leghorn, Barred Phymouth and a number of other breeds and hybrids (Obioha 1993; Babatunde and Fetuga 1980). The business was first experimented at Government firms and later expanded to private operators due to its lucrativeness.

Poultry business in Nigeria like most other livestock enterprise is mainly small holder enterprise. Every household maintain one or more birds domestically. In this situation birds are allowed to roam about the environment searching for food and are sheltered only in the night. Although cash income is the motivation, there is hardly any outlay in this system of poultry business. There is no provision for housing, breeding, recording or costing. The system is purely traditional.

Before the introduction of commercial poultry business in Nigeria, some few commercial enterprises were importing table eggs and processed broilers and other animal production like cheese, butter, milk etc. from developed countries (Obioha 1993) .

As a result of successful adoption of exotic poultry around the main Government Agricultural centres such as Samaru in Zaria, and Umudike in Umuahia, the foundation of modern commercial poultry farming was laid. There was the specialization of flock and breeds into layers and broilers. Government programmes were developed based on accelerated poultry production through the importation of laying flocks and distribution of day-old chicks at subsidized price to farmers.

An impressive performance in production was recorded around this time and even demand exceeded supply. One important factor that contributed to this apparent surplus of poultry products in the sixties was due to consumption pattern. Some cultures saw it as a taboo for women and children to consume eggs while most traditionalists in some communities used male fouls only for sacrifice for their "gods". This infers that rate of consumption was low and price relatively low as well. The implication is that operators were on the receiving side hence, they record low profit margin.

The period from mid 1960s to the present saw a steady and progressive increase in the price of poultry products throughout the country (Babatunde and Fetuga 1980). The sharp increases in price was due mainly to increase in demand as a result of improved nutrition and high rate of population growth. Added to these is increase in the purchasing power due to the nation's oil boom of the 1970s.

The poultry business in the country has recorded a tremendous change since the early fifties the business was started from a backyard, peasant and primitive household oriented husbandry of indescript native breeds, to the cash oriented modern and large scale poultry.

2.4.1 TREND IN POULTRY PERFORMANCE IN NIGERIA

Poultry production in Nigeria is developing rapidly and the consumption of poultry meat increasing faster than that of any other edible livestock beside beef. Traditionally, poultry plays an important role in the livestock of Nigerian economy (Sonaiya, 1990).

During the late 1970s and early 1980s, the poultry industry was one of the fastest growing in Africa. In 1963/64 it was estimated that poultry meat supplied about 12% of the total demand for meat and was third after beef and goat meat. The performance of the sector around the period was relatively low hence almost 100% of the production was family oriented.

This situation changed during the 1970s when, Government initiated development projects and cheap imported maize became available (Williams, 1989). Between 1972/76 and 1982/86, the domestic poultry meat production almost doubled from 51,500 to 95,800 metric tones (Sonaiya, 1990). This success recorded was attributable to a number of factors viz (1) Prohibition of poultry meat importation (1971 - 1973) and later customs duties in live and dead poultry imports. (2) Establishment of federal and state support centres (Parent stock farms, hatcheries, research institutes etc.)

Although the above mentioned factors encouraged performance but sustainability on the national level was crippled by certain factors.

(a) Low prices of imported grain for poultry feed precipitated to decline in local production of maize.

(b) High local prices made exportation of poultry products impossible; thereby allowing sourcing of foreign exchange from oil export.

(c) The economic situation of the country coupled with government policies that favoured large scale farms.

The nations economic recession with its attendant corrective measures has had negative effect on the performance of poultry enterprise for over a decade now. Nigeria's poultry industry is only half as big as in 1980. According to a

survey conducted late 1992 in the livestock population in Nigeria by the United Nations Food and Agricultural organisation (FAO) for the ministry of Agriculture, livestock and fisheries, total bird population in the country is about 40 million, out of which commercial birds represent only 25% or 10million. When compared to the 1980 figures, it shows just far the industry has contracted.

The 1980 survey indicated that the industry had posted a 180% rise in poultry meat production between 1964 and 1980 when the bird population was estimated of 80 million. The survey further revealed that within the period 1985 to 1993, some 2000 poultry operators went out of business. This situation was linked to the nation's economic reforms which results to high cost of factors of production, low output, low sales and little or no profit.

2.5 STRUCTURE OF LIVESTOCK BUSINESS IN NIGERIA

Livestock keeping which used to be a hobby in the past has developed to full-fledged industry (Obioha 1993). This is as a result of its importance to man which include source of food income, employment etc.

There are three major production system in Nigeria, notably

(a) The traditional village system or small-scale production.

(b) Modified traditional village system or medium-scale production.

(c) Commercial production system or large scale production.

The practice of these systems depend on the objective of the farmer for keeping livestock, resources available, costs and pricing relationships, level of orientation, availability of inputs and the economic climate.

2.5.1 TRADITIONAL VILLAGE SYSTEM OR SMALL SCALE PRODUCTION:-

This is the most common throughout the country. In this system very few animals are maintained by the individual households. The farmer can keep two - four different types of animals. (Obioha 1993) described traditional livestock production as a "low labour input and a low priority adjunct to the traditional arable and cash crop farming.

Under the system, the animals are allowed to roam freely around the environment, feeding themselves with what they can find and later return to the owner's house in the evening where they pass the night. There is no provision for improved feeding but, the owners feed them with household refuse like yam, plantain, banana and orange feeds when available.

Furthermore, the investment cost required in this system is the initial purchase of stock hence, there is no provision for feeding, housing and health care. The labour requirement is minimal and is family oriented. The livestock produced are either sold or consumed by the family during festive occasions.

2.5.2 MODIFIED TRADITIONAL SYSTEM OF MEDIUM SCALE PRODUCTION

This system combines the attributes of traditional and commercial systems. The number of livestock kept in this system is greater than the traditional system. There are some elements of care and concern by the farmers in terms of feeding, healthcare and housing. The objective for production is for market.

2.5.3 COMMERCIAL SYSTEM OR LARGE SCALE PRODUCTION

This is the organised and planned system of livestock production (Obioha 1993). In this system, adequate provision are made for the feeding, housing and health care of the animals. The number of animals are many and therefore require more hands to handle. There is investment on inputs and infrastructure. The financial involvement is greater and the basic objective is for profit-making. The animals are fed with balanced ration and are properly housed. Veterinary care is regularly provided and sanitary environment is always maintained. The daily operations are usually documented and referred to when necessary.

In Nigeria, the number of commercial producers are far below projected figure when compared to the population of about 100million people (Sonaiya 1990) The producers engage in goat, sheep, rabbit, cattle, pigeon and poultry production. The environmental condition of the country influences distribution of producers.

The monogastrics are produced more in the southern part of the region while ruminants thrive very well in the Northern part of the country.

2.6 POULTRY PRODUCTION IN NIGERIA

The primary purpose for poultry keeping is for meat or egg production. In the past poultry keeping was a side-line occupation - birds are reared to realize some money. Today, poultry keeping has developed from backyard business to commercial oriented industry (Yusuf et al 1993).

During production, birds that are capable of growing fast and has high egg production ability are considered hence the objective of production is for either meat or egg. Through this process, it is possible to rear parent stock that will produce fertile eggs from which the commercial broilers or pullets are obtained. Based on the purpose of production, a poultry farmer selects the type of enterprise to engage on.

2.6.1 POULTRY FARMING ENTERPRISE

There are three major poultry enterprises that are recognised viz breeding and hatchery operations, commercial egg production and broiler production (Yusuf et al 1993; Obioha 1993). Although, there exist other enterprises that supply supportive services like specialised farms for production of pure lines, grand-parent and parent stock; feeding and processing and marketing of poultry products. In addition, are the manufacturer of poultry equipment and supply of veterinary products and services.

2.6.2 BREEDING AND HATCHING OF COMMERCIAL DAY OLD CHICKS

This specializes in rearing of parent stock hens and cocks to produce fertile eggs which are then hatched with the assistance of incubators and hatchers. The chicks that are produced are then disposed to poultry farmers who specialized in the production of table eggs or broilers. The major product of this enterprise type are Day-old chicks.

TABLE EGG PRODUCTION:

The objective here is to brood and rear the day-old chicks obtained from hatcheries for egg production. The primary products of this enterprise are eggs which are marketed.

BROILER PRODUCTION:

In this enterprise type, commercial Day-old chicks are reared for meat production. It has the fastest rate of return of all the poultry enterprises (Yusuf et al 1993). The broiler may be sold live or processed.

FEED MILLING:

Feed constitutes between 60-80% of the cost of producing meat and eggs (Fetuga 1977). The success of any poultry enterprise therefore rest largely upon the availability of good quality and affordable compound feeds.

As a result of the importance of feed to the poultry operation, some poultry farmers compound their own feeds. Feed milling embrace the purchasing of ingredients needed to produce feed, grinding, mixing and packaging.

OTHER SUPPORTIVE SERVICES:

The supply of inputs and health care services are to ensure that good quality meat or egg are produced. Likewise, processing, packaging and marketing of poultry products ensures that the end-products meat or egg are prepared, packaged and distributed so that money can be realized.

2.6.3 GENERAL CONSIDERATION FOR POULTRY FARMING ENTERPRISE.

Yusuf et al 1993 and Obioha 1993 are in agreement with the general consideration for poultry farming enterprise. Before setting up any particular poultry enterprise, the following considerations should be made.

(A) AVAILABILITY OF LAND: This is very important and is assumed to be the first thing to be considered. Land must be readily available for one to start a poultry business. The size would depend on the type of enterprise but in general, breeding

projects demands more land due to the fact that greater requirement for separation between the hatchery and the other areas for the rearing stock.

(b) HOUSING: Housing facilities are required for brooding and growing laying hens and broilers. For selection of any housing system, high productivity, efficient conversion of feed, labour efficient, product quality, low total costs and a comfortable environment for both the flock and attendants should be considered (Yusuf et al 1993). Good housing designs take into account the requirements for optimum ventilation, facilitate ease of movement and cleaning around the houses.

(c) WATER SUPPLY: This is a very important nutrient for poultry. Regular supply of clean water should be considered while setting up a poultry business. It is very important to have a storage tank or borehole to avoid disappointment from public water supply.

(d) FEEDS: This is the most important input of poultry production. It contributes about 60-80% of total cost of poultry production. Therefore, its availability in terms of quantity and quality should be seriously considered before embarking on the business.

(e) INFRASTRUCTURAL FACILITIES: Facilities like roads, electricity, houses for stock, storage rooms for equipment and raw materials etc. are necessary things to be considered before siting a poultry business.

Other options to be considered include Transportation, waste disposal, marketing, services etc.

2.6.4 PRODUCTION COSTS AND RETURNS IN POULTRY BUSINESS

The capital investment of any poultry enterprise depends solely on the size and objective of the business. Large scale enterprise is more capital intensive than small scale.

Cost of production comprises of both cash and non-cash items and although cash costs in the production of eggs are rather huge when compared with cash in some other enterprises. The cost of feed is the largest item in cash cost while the

non-cash cost include the labour of the operator and that of his family, alongside with interest and depreciation that may be charged against the business. Feed accounts for 60-80% of the total cost (Fetuga 1977). With increased specialization on poultry breeding farms, many extra costs are introduced, so that the relative importance of feed becomes less.

Next in rank to feed is labour cost but this depends on the size of the entreprise. The smaller the size the less labour that is employed while the larger the size the more automated and the more the labour. Large scale production enjoys high level of economy of scale.

Other forms of cost include depreciation, interest, utilities, taxes and miscellaneous. Each of these contributes to production costs as well as affect profit margin.

As feed constitutes the largest expenses in cost of production, so market eggs forms the largest returns in the commercial eggs enterprise. Hatching eggs, cull hens and young chickens sold for meat are of varying importance as sources of income on individual farms but in the aggregate they are of only minor significance.

The by-product of poultry; eggs and meat are daily demanded by the populace as source of food or processing. The financial gains derivable from them varies from place to place and as well depends on the rate of return.

2.6.5 POULTRY ENTERPRISES IN OWERRI

There exist both small, medium and large scale producers of poultry products in Owerri. Majority of the farms are privately oriented while some are owned by co-operation.

Three main poultry enterprises are recognised notably commercial egg producers, Broiler producers and breeding and hatchery operators. Other supportive enterprises such as veterinary services, marketers etc. equally operate.

The production practice in place is mainly intensive system for medium and large scale producers and traditional system for small scale operators. Under the

intensive system, the birds are fed, housed and medicated. The system of production used by most farmers is the deep litter. This is due to its cost effectiveness when compared with battery cage system. (Yusuf et al 1993.). Battery cage practice is relatively capital intensive.

The small scale operators source their Day-old chicks, feeds, Drug and vaccines etc. from the large scale operators or middlemen. Some farmers compound their feeds while some depend on the conventional feeds.

Poultry farming in Owerri has come of age and has a future if, properly harnessed like their counterparts across the state. Poultry farmers in the state are faced with a number of problems which affects their performance.

2.7 PROBLEMS OF POULTRY ENTERPRISES IN NIGERIA

A number of problems have been identified facing poultry enterprises in Nigeria. These include:

(a) SCARCITY AND HIGH COST OF FEEDS

Feeds constitutes about 60-70% of the total recurrent cost of poultry enterprise Ademosun (1976) a and b reported that there had been 30 to 345 percent increases in the price of poultry feed ingredients as compared to prices five years ago. The rising cost of feed ingredients has the overall effect of increasing production cost and results in high cost of finished feeds (Fetuga 1977). The high cost of feed is generally believed to be partly responsible for the reduced profit margin which in turn discourages scale expansion in the poultry industry.

In the late 1970's and early 1980's several feed mills were established due to growth in the poultry enterprises. The performance of the feed mills witnessed continued dwindling in production due to increased competition for available grains and shortage of raw materials. The implication of this was the feed mills producing below installed capacity.

The structure of grain usage in the country before the ban on barley, wheat and malt was such that an estimated 80 percent of the total available grain was

consumed directly by Nigerians as diet while the remaining 20 percent was used for livestock feeds. As a result of total ban on importation of grains, feed millers, livestock operators, and other consumers had to compete with industries for the domestic grain supply. The attendant consequence is sudden increase in the price of grains which reflected on the finished products.

(b) COST OF BUILDING AND EQUIPMENT

The cost of building and equipment has increased tremendously for some time now. This is mainly due to the nations' economic down time coupled with the economic policies to stem the situation.

These facilities are essential for optimum productivity and therefore are very important in poultry industry. The increase in cost of these facilities translates to increase in cost of production and subsequently reduced output. The performance of small-holder farmers which constitute about 80 percent of poultry entrepreneurs in Nigeria are seriously affected hence majority of them cannot afford to purchase the necessary facilities.

C. DRUGS AND VACCINES

Diseases are major impediments to poultry production in Nigeria. There is generally scarcity of drugs and vaccines. According to (Sonaiya 1990), new-castle disease accounts for about 70 percent of disease problem in Nigeria. He stated further that in Africa the losses in rural poultry from disease amounts to about 75 million chicks, Guinea keets and ducklings each year.

In their own study, Balogun et al (1989) cited that the prices of livestock vaccines have generally doubled since the inception of structural adjustment in Nigeria. The shortage of vaccines are due to inadequate funds, inadequate personnel to man veterinary centre post and lack or access to veterinary by a number of small scale farmers. The implication of this is that the poultry populations is faced with the danger of not surviving the outbreak of any serious disease.

d. RESEARCH PROBLEM

The high cost of research materials have invariably slowed down the place of livestock research (Balogun et al 1989). This has limited the advantages derivable from research as well as limited us to known techniques with little or no innovation added.

e. LABOUR

In an economy like ours, labour cost is relatively high. This is in the bid to cushion the effect of economic policies. The poultry operators with little capital in their disposal find it difficult to source for labour. High cost of labour infers high production cost and reduced profit margin.

f. INADEQUATE CREDIT FACILITIES

The characteristics of most farmers in Nigeria are that of low income, low production, low investment and use of outdated management techniques (Lamorde et al 1981). This stems form the fact that most producers find it difficult to obtain loans from financial institutions due to lack of collateral and more often high interest rate associated with credit. This problem forces most of the farmers to continue on small scale production hence they cannot afford automated poultry machines as well as provide other valued inputs.

g. LACK OF SUITABLE BREEDING STOCK

The exotic day-old chicks are imported for egg and meat (broiler) production. The problems associated with these imports are irregular supplies of chicks, inability to choose good productive strains, introduction of exotic disease and dependence on foreign countries for supply of breeding stock (Lamorde et al 1981)

2.8 THE CONCEPT OF STRATEGY

Both private and public enterprises are concerned with estimating what will happen in the future with regard to operation. The present economic down-time in

Nigeria demand that business enterprises should re-examine their set-up objectives and align them more decisively towards the national goal of self-reliant development. They would find that this had more implication for their strategy of operation which relates to the basic approach of organisation towards their overall objectives (Mabogunje 1987).

An enterprise has to try to minimize risks, but if its behaviour is governed by the attempts to escape risk, it will end up by taking the greatest and least rational risk of all, the risk of doing nothing. Entrepreneurs usually fail to define where they want to go in relation to the environment, markets, competitors, and technology. This prompted (Drucker 1982) to state that whatever a company's programme is, it must decide what opportunities it wants to pursue and what risks it is willing and able to accept. Furthermore, it must decide on an organisational structure appropriate to its economic realities, its opportunities and its programme of the performance.

As a result of the consequences of depressed economy on the performance of Agricultural sectors, attempts to circumvent the situation calls for formulation and adoption of strategy. Strategy is defined as an activity which tries to study the totality of circumstances surrounding an economic entity or undertaken.

The word strategy means different thing to different people at different time and this results from the fact that its usage cuts across many disciplines and areas of human activity. According to Encyclopedia Americana, it is the "art and science of developing and employing the political, economical and psychological forces of a nation during peace and war to afford the maximum support to national policies.

However the term permeated both the business and Government cycles that disagreements as for its meaning and usage come up. In his contribution, curzon (1983), described it as the unified, comprehensive and overall plans necessary to ensure the attainment of the organisational aims and objectives.

It is the science and art of employing business resources to secure objectives with emphasis on adjusting to a competitive environment. It is scientific hence it requires a methodical objective approach to issues such as costs, opportunities and

time factors so that necessary resources might be assembled and allocated with a view to attaining optimum performance. It is also an art in that it involves activities such as the motivation of people and demands the ability to react swiftly, often intuitively to changes in the environment.

Taylor and Hawkins (1972) cited the word as a course of action designed to optimise future profit over a series of years by deploying limited resources in a changing environment and in the face of increasing competition in the pursuit of certain management goals.

Schewe (1987) saw it as a guideline for competitive warfare that will direct the actual activities of an organisation, which specifies a series of maneuvers designed to achieve a particular result. In their own assertion (Stoner and Hankel 1985) defined the word strategy as "the broad programme for defining and achieving an organisation's objectives and implementing its missions and also "the pattern of the organisations responses to its environment". From this definition, every enterprise no matter the size has a strategy, although not necessarily an effective one - even if the strategy has never been explicitly formulated.

Decisions on where to site an enterprise; what to produce, how much to produce, how much labour to employ, how to finance investment and so forth, necessitates looking in the future. The future is always uncertain and it needs to be studied in order to decide upon the decisions to be taken.

This precipitated (Ansoff 1971) to define business strategy as a set of management guidelines which specify the firm's product - market positions, the directions in which the firm seeks to grow and change, the competitive tools it will employ, the means by which it will enter new markets, the manner in which it will configure its resources, the strengths it will seek to exploit and conversely the weakness it will seek to avoid.

The importance of adopting a survival strategy cannot be over emphasised hence it is a sure way of remaining in business during economic crisis.

2.9 SURVIVAL STRATEGIES OF POULTRY ENTERPRISES

As a result of the challenges posed by the nations current economic predicament, it demands that poultry enterprises came up with optimal responses to cope with the difficult realities of our environment. This implies that entrepreneurs should be more innovative, quicker in taking opportunities, as well as, facing challenges and be far more determined to control costs and generate revenue.

The optional responses for survival include:

(1) **Aggressive marketing:** Marketing of poultry products is one of the problems facing poultry operators. During economic crisis, aggressive marketing strategy is a veritable instrument in order to remain in business. Aggressive marketing is the most popular and frequently used strategy option (Glueck 1980). It seeks to attacking the market and dominate it. It involves attempts to increasing the level of sales and shares at a higher rate than in the past.

Chaula (1979) remarked that whether you will be in the poultry business next year or not, it all depend on your success in marketing today. Furthermore, that you may have the best breed of birds and your management may be perfect, your bank balance will be bright only if your marketing is right.

(2) **Use of non-conventional feeds:** The need to exploit locally available materials including industrial wastes and by-products which can be used as cheaper substitutes for conventional feed ingredients like maize has been suggested (Abegbola 1977, Bird 1979, Njike 1979). Among such by-products are cassava peels, brewers' grains, cocoa husks, rice bran, wheat bran, biscuit waste, etc.

The current high prices of cereal grains especially maize stemming from their high demands as staple human foods in many areas of the developing world also creates problem of rising feed costs, (Udedibie et al 1993). Attempts should therefore be made to look for alternative sources of feedstuff for poultry in which competition between man and poultry will be minimal.

In Nigeria, limited supplies of protein and energy carriers and consequent importation usually result in significant increases in the cost of domestic livestock

production. Any attempt to mitigate this problem could lower livestock production cost.

It is known that maize and wheat offals which are the conventional sources of energy and fibre accounts for over 60% in a balance poultry ration. Studies have reported that incorporation of cassava peel meals into cockerel ration reduces the cost of production without any adverse effect in carcass quality and economy of feed conversion of the birds. Longe (1987) suggested that with the present high cost of maize, any energy containing ingredient that can replace maize, even at levels as low as 5% to economic advantage would be desirable.

The ban in barley in Nigeria has forced breweries in the country to resort to the use of maize sorghum and other related cereal grains for producing beer. Production of beer based on maize and sorghum results in production of bye-products which look less fibrous and more nutritious than the conventional barley-based by-product (Udedibie et al 1993). With increased number of breweries in the country, a large quantity of this by-product is now available for the use in livestock feeds.

(3) Diversification: This type of strategy deals with an enterprise increasing its areas of activity. It can range from minor addition to the poultry business to completely unrelated businesses. This can be achieved through internal research and development, purchase of new ideas and being creative and innovative.

Sonaiya (1993) suggested that in order to further reduce the dependency on feed grains, there is the need to promote the use of other poultry species apart from chicken. For instance water-fouls (ducks and geese) can use alternative feed resources such as snail and water hyacinth on ponds and lagoons. He stated further that proper integration of several enterprises is a survival strategy for farmers. Poultry, in general can be integrated with fish, rice, forage and other crop, as well as with other livestock.

(4) Cost reduction: This cuts across both material and human resources. This involves cutting down overhead costs in order to remain in business. Equally, it may result to reduction in the installed capacity. As part of cost reduction,

entrepreneurs seek and adopt cheap alternatives that still yield the same result. In these days of double-digit inflation, it is obvious that "cost reduction" means profit earned:.

In agricultural projects, costs reduction can be achieved by high performance equipment, high quality feeds, imported stock and most importantly by cost effectiveness and cost minimization (Bilgrami, 1982).

(5) Sales promotion: This comprises of a wide variety of tactical promotion tools of a short-term incentives. It include credit sales, bonus, trade discount, etc. Sales promotion is aimed at stimulating stronger target response. It encourages more purchases which invariably means more returns to the entrepreneurs.

(6) Use of improved stock: The use of imported breeds that are more resistant to endemic diseases and have high growth rate would make operational cost more economical and at the same time provide fast returns to investment.

(7) Advertising: This is a powerful communication force and a vital marketing tool helping to sell goods, services, images and ideas through channels of information and persuasion. It creates awareness of new goods or existing ones and convinces the targeted market of the excellent benefits of the products (Wright et al, 1982). This can be done in pages of newspapers, magazines and journals. It can also be carried out through Radio, Television, Hand bills, etc.

CHAPTER THREE

METHODOLOGY

3.1 STUDY AREA

This study area is Owerri zone in Imo State, Nigeria. This area comprises of nine (9) Local Government areas including Owerri North, Owerri West, Owerri municipal, Ikeduru, Mbaitoli, Ahiazu Mbaise, Aboh Mbaise, Ngor Okpala and Ezineihitte Local government areas. Four Local government areas were purposely selected for the study due to the concentration of poultry enterprises as well as allied enterprises. The local government areas are Owerri municipal council, Owerri west, Owerri North and Ahiazu Mbaise.

Imo State is located in south eastern Nigeria and lies between latitude 5^0 10', and 6^0 35', north of the Equator and between longitude 6^0 35' and 7^0 31' east of the Greenwich meridian. It is therefore in the tropical rainforest zone. Annual rainfall ranges from 2.5cm per year to less than 2.0cm per year. The mean annual temperature over most of the region is about 27^0C (meteorology Department Owerri, 1992).

According to the 1991 census, the provisional population figure for Imo State is 2,485,499 with a population density for 499 people per square kilometer (Federal office of statistics, 1993)

3.2 SOURCES OF DATA

Primary and secondary data were collected for this study. The primary data consist of those information collected directly from the enterprises' staff by use of questionnaire and interviews.

The questionnaire solicited information across the relevant departments of the poultry business. The question were directed to the problems and objectives of the study and were carefully constructed as to bring out the required information and to allow the farmers express their opinions without restrictions. The secondary data included information from published materials such as material from journals, books and others.

3.3 SELECTION OF RESPONDENTS:

Respondents from the four local governments areas were selected from the list of registered poultry farmers in Owerri - Imo State obtained from the livestock unit of the ministry of Agriculture Owerri. About 120 farmers were registered from the areas and a total of 80 farmers whose farm size where four hundred (400) birds and above were purposely selected for the sampling. All were interviewed and data collected by the use of questionnaire and interviews.

3.4 DATA ANALYSIS

Data obtained was analysed with simple statistical tools like proportions, percentages, and means. These were presented in tables and figures. The hypothesis of the study were tested within the implicit model:

$Y = (X_1, X_2, X_3, X_4, X_5, X_6, e)$

where

Y = Net income

X_1 = Depreciated cost of Housing (N)

X_2 = Depreciated cost of equipment (N)

X_3 = Cost of drugs and vaccines (N)

X_4 = Feeding cost of birds (N)

X_5 = Cost day-old Chicks (N)

X_6 = Labour cost (N)

e = Error term.

Net income was measured in Naira. This was the amount realised after deducting all the fixed and variable Cost. The straight line method was used for depreciated cost of building in the current bank rate. Equipment cost were also depreciated using the straight line method and current Bank rate. Cost of drugs and vaccine (X_3) included the cost of veterinary services and the cost of all the necessary drugs that were administered to the birds throughout the growth stage.

Feed cost (X_4) was calculated using the market cost of feeds during the reduction period. The opportunity cost of feed was the cost of buying or producing the feed and this is the same for other inputs.

The labour cost was based on the average monthly wages paid to fully attendants per month over the production year. The cost of purchasing Day-old Chicks was based on the current cost of birds during the year of production. The model was estimated in three functional forms. Viz, linear, double log and semi log functional forms. The value of the coefficient of determination was used to select the lead equation that was analysed.

3.5 REVIEW OF ANALYTICAL TOOL

The analytical model adopted is a production function where output of different poultry products is expressed as a function of some of the identified inputs variables. This is in line with a similar work carried out by Alawa and Balogun (1989). The input variables considered are feeds, labour equipment, Housing Day-old Chicks, drugs and vaccines.

The model is of the form

$Y = f(X_1, X_2, X_3, X_4, X_5, X_6,)$

where

Y = output of poultry products

X_1 = Price of feeds (N)

X_2 = cost of labour (N)

X_3 = cost of equipment (N)

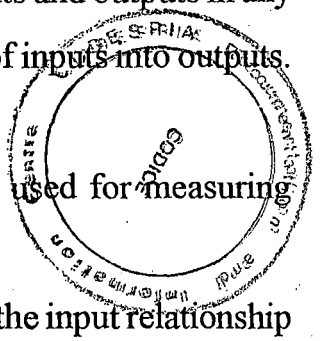
X_4 = cost of Housing (N)

X_5 = cost of Day - Old Chicks (N)

X_6 = Cost of vaccines and drugs (N)

Ideally, fair prices of input and output should stimulate production. Input prices however have to be relatively low so as to encourage expansion of output.

Production function is the technical relationship between inputs and outputs in any process. The production process involves the transformation of inputs into outputs. This is applied due to the fact that it



(a) enables one to obtain basic parameter, which can be used for measuring performance,

(b) enables one to locate the point of maximum output and the input relationship required to produce the output.

(c) also enables one to locate the point of optimum economics.

In mathematical terms, this function is assumed to be continuous and differentiable. It is expressed as

$$Y = f(x)$$

Where Y is the output and X is the factor input. This relationship shows that output Y is a function and is dependent on the factor input X.

There are two types of production function namely short-run production function and long run production function. The short run production relates to factor inputs and product outputs when some of the inputs are fixed. Such function can be expressed in implicit form.

$$Y = f(X_1, X_2, X_3 .... X_n)$$

Where Y = output, $X_1, X_2 .... X_n$ are the input factors.

The implicit equation is on example of long run situation when no factor input is held constant.

The coefficients of estimated parameters denote the relationship between the inputs and outputs ratios such as Marginal Products (MP), Average Products (AP) and Elasticity of Production (EP). The selection of any specific type of equation to express production condition will certainly impose certain assumptions and restraints in respect of the relationships involved and the optimum resource quantities which will be specified.

The linear functional form is expressed mathematically as

$$Y = a_0 + a_1x_1 + a_2x_2$$

The linear function assume a constant marginal productivity of factors irrespective scale of operation as well as perfect substitution of factors. It also makes no allowance.

The Marginal Product (MP) is given as:

$$MPX_1 = Y/x_1 = a_1$$

$$MPX_2 = Y/X_2 = a_2$$

The Elasticity of Production (EP) is given as

$$EPX_1 = \frac{MPX_1}{APX_1} = a_1 \frac{X_1}{Y}$$

$$EPX_2 = \frac{MPX_2}{ApX_2} = a_2 \frac{X_2}{Y}$$

The power on cobb - Douglas function is expressed as follows.

$$Y = a_0 x_1^{a_1} \cdot X_2^{a_2}$$

This can be in logarithm A_0 Double log form this

$$\text{Log } Y = \log_{ao} + a_1 \log X_2 + a_2 \log X_2$$

Here the coefficients a_1 and a_2 are the direct elasticities. Returns to scale is measured by the sum of the elasticities. If the sum is exactly equal to one then there is constant returns to scale. If the sum is greater then one, there is increasing returns to scale and if the sum is less than one, there is decreasing return to scale.

$$MPX_1 = \frac{d(\log Y)}{d(\log X_1)} = a_1 \frac{Y}{X_1}$$

$$MPX_2 = \frac{d(\log Y)}{d(\log X_2)} = a_2 \frac{Y}{X_2}$$

$$EPX = \frac{MPX_1}{APX_1} = \frac{a_1 Y}{X_1} \cdot \frac{X_2}{Y} = a_2$$

The exponential function is of the form

$$Y = a_o e_a + a_2 x_2$$

Here the independent variable appears as exponents. The functional form can be linearised in logarithm function easy fitting as follows

$$\text{Log } Y = a_o + a_1 x_1 + a_2 x_2$$

The marginal productivity is the product of input coefficient and geometric mean level of the output. The product elasticity on the other hand is the product of input coefficient and the arithmetic mean of the corresponding input.

$$MPX_1 = \frac{d(\log Y)}{d X_1} = a_1 Y$$

$$MPX_2 = \frac{d(\log Y)}{d X_2} = a_2 Y$$

$$EPX_1 = \frac{MPX_1}{APX_1} = a_1 Y \cdot \frac{X_1}{Y} = a_1 X_1$$

$$EPX_2 = \frac{MPX_1}{APX_2} = a_2 Y \cdot \frac{Y_2}{Y} = a_2 X_2$$

The semi-log functional form is expressed as

$$Y = a_0 + a_1 \log X_1 + a_2 \log X_2$$

This model is very useful in total cost and consumption function analysis. The output is expressed as a function of the logarithm of the inputs. The marginal productivity of a variable is the regression coefficient divided by the geometric mean of the variable while the production elasticity is arrived by dividing the coefficients by the mean output level.

$$MPX_1 = \frac{dy}{d(\log X_1)} = \frac{a_1}{X_1}$$

$$MPX_2 = \frac{dy}{dy\,(\log X_2)} = \frac{a_2}{X_2}$$

$$EPX_1 = \frac{MPX_1}{APX_1} = \frac{a_1}{X_1} \cdot \frac{X_1}{Y} = \frac{a_1}{Y}$$

$$EPX_2 = \frac{MPX_2}{APX_2} = \frac{a_1}{a_2} \cdot \frac{X_2}{Y} = \frac{a_2}{Y}$$

CHAPTER FOUR

POULTRY PRODUCTION SYSTEMS

4.1 SOCIOECONOMIC CHARACTERISTICS OF POULTRY FARMERS

Some socio- economic characteristics of poultry farmers examined include educational attainment, Age and years of experience in poultry enterprises. This analysis becomes important because social and economic characteristics like education, age, family size etc. all have been found to exact reasonable influence on the operations of farmers.

4.1.1 EDUCATIONAL ATTAINMENT

From all available data, the analysis of the figures shows that 8.75% of the farmers do not have formal education, 31.25% had only primary education, 35% had secondary education while 25% had higher education (Table 4.1). This implies that a significant number of the poultry farmers are literate and have a good educational background.

TABLE 4.1 DISTRIBUTION OF FARMER BY EDUCATIONAL ATTAINMENT IN OWERRI, 1998(%) n = 80.

EDUCATIONAL LEVEL	NUMBER OF FARMERS	PERCENTAGE OF FARMERS
Non-formal Education	7	8.75
Primary school Education	25	31.25
Secondary school Education	28	35.0
Higher Education (OND, HND, B.Sc)	20	25.0
TOTAL	80	100

SOURCE: Field Survey 1998.

4.1.2 AGE DISTRIBUTION OF FARMERS.

About 10% of the farmers asserted their age to be 20-29 years and 25% indicated 30-39 years as their age while 35% represented those of 40-49 years of

age. 16% further showed their age as 50-59 years whereas 10% indicated 60 years and above as their age (Table 4.2)

This shows that 80% of all the farmer involved in poultry business in Owerri are aged 39-59 years.

TABLE 4.2 AGE DISTRIBUTION OF POULTRY FARMERS IN OWERRI, 1998 (%)n = 80.

AGE IN YEARS	NO. OF FARMERS	PERCENTAGE OF FARMERS
20-29	8	10
30-39	20	25
40-49	28	35
50-59	16	20
60 and Above	8	10
TOTAL	80	100

SOURCE: FIELD SURVEY 1998.

4.1.3 POULTRY FARM EXPERIENCE

About 11.25% of the farmers have had 5 years experience in poultry farm, 25% agreed to have gotten 10 years experience while 32.5% had 15 years experience. 22.5% indicated that they have had 20 years farm experience while the remaining 8.75% have had 21 years experience and above (Table 4.3).

This implies that more than 50% of the poultry farmers have stayed above 10 years in the business and they have acquired enough experience in poultry enterprise. The level of experience plays a very veritable role in the successful management of any enterprise. Farmers with long years of experience perform better in management of poultry business than freshers. This is because experienced farmers detects in time symptoms of diseases, feeding habits, performance of birds, measures to take in terms of short coming and the overall macro-economic policies that might effect poultry enterprise.

TABLE 4.3: DISTRIBUTION OF FARMERS BY YEARS OF POULTRY FARM EXPERIENCE IN OWERRI, 1998 (%) n =80.

YEARS OF EXPERIENCE	NUMBER OF FARMERS	% OF FARMERS
0-5	9	11.25
6-10	20	25
11-15	26	32.5
16-20	18	22.5
21 and Above	7	8.75
TOTAL	80	100

SOURCE: FIELD SURVEY, 1998.

4.2 TYPES OF POULTRY ENTERPRISES

About 12.5% of the poultry farmers engaged in breeding and hatchery operations, 28.75% of the them practised commercial egg production, 43.75% of the farmers practised broiler production while 15% of them practised marketing of poultry products. None of the farmers interviewed engaged in feed milling and processing of poultry products (Table 4.4). Most of the farmers were observed to be engaged in broiler production. They claimed that broiler production has the fastest rate of return and profitability. This is because with good feeding and management, broiler reach a market weight of 1.6kg-2.4kg within seven to ten weeks old. This is in line with Yusuf et al (1993) and Fetuga (1997) who opines that broiler production have the fastest returns of all the forms of poultry enterprise.

Table 4.4: DISTRIBUTION OF POULTRY ENTERPRISE IN OWERRI 1998 (%) n = 80.

TYPE OF ENTERPRISE	NUMBER OF FARMERS	% OF FARMERS
Breeding and Hatchery operation	10	12.5
Commercial Egg Production	23	28.75
Broiler Production	35	43.75
Marketing of Poultry Products	12	15.0
Feed Milling	-	-
Processing	-	-
TOTAL	80	100

SOURCE: FIELD SURVEY, 1998.

About 25% of the poultry farmers practised Battery cage system of poultry management while 75% of them practised deep litter management system (Table 4.5). None of them practised semi-intensive system of poultry management. Majority of the poultry farmers who practised battery cage system are mainly small scale farmers and commercial egg producers who said they preferred it because of lack of adequate space and the cleanliness of the eggs whereas the majority of the farmers that practised deep liter system said that they preferred it because of the capital intensiveness of battery cage system.

Table 4.5 DISTRIBUTION OF FARMERS BY MANAGEMENT SYSTEM PRACTISED IN OWERRI, 1998 (%) n= 80.

OPTION SYSTEMS	NUMBER OF FARMERS	% OF FARMERS
Battery cage system	20	25
Deep liter system	60	75
Semi-intensive	-	-
TOTAL	80	100

SOURCE: FIELD SURVEY, 1998.

4.3 SOURCES OF DAY OLD CHICKS AND FEEDS

About 18.75% of the poultry farmers purchased their day-old chick through the middlemen marketers whereas 81.25% of them got theirs directly from major producers (Table 4.6). This implies that majority of the poultry farmers purchase their day-old chicks directly from breeding and hatchery operators. They asserted that they preferred it because of price consistency as well as steady and regular supply of chicks. Also those that patronize the middlemen do so mainly because of far distance and transport cost to reach the producers.

TABLE 4.6 DISTRIBUTION OF FARMERS BY SOURCES OF DAY-OLD CHICKS IN OWERRI, 1998 (%) n = 80

Option source	Number of farmers	Percentage of farmers
Middle men	15	18.75
Producers	65	81.25
TOTAL	80	100

SOURCE: Field survey, 1998.

Twenty five percent (25%) of the poultry farmers purchase their feeds directly from the producers and 62.5% of them purchase from the middlemen while the remaining 12.5% obtain their feeds from self production (Table 4.7).

It was observed that those that purchase directly from producers are large scale farmers who acts as representatives to the feed producers whereas the majority of them who purchased from the middlemen are mostly the small scale farmers who do not have much capital to purchase in bulk from the producers.

Table 4.7: DISTRIBUTION OF FARMERS BY SOURCES OF FEED IN OWERRI, 1998 (%) n = 80

OPTION SOURCES	NUMBER OF FARMERS	PERCENTAGE OF FARMERS
Self Production	10	12.5
Producers	20	25
Middlemen	50	62.5
TOTAL	80	100

SOURCE: Field Survey 1998

4.4 PROBLEMS OF POULTRY PRODUCTION.

Three primary problems of day-old chicks procurement identified are transportation, high cost of chicks and Irregular supply of chicks from the producers (Table 4.8). About 16.25% of the poultry farmers asserted transportation problem and irregular supply from the producers as their problems respectively whereas 67.5% of them insisted that high cost of chicks is their main problem. This shows that high cost of chicks and high cost of transportation is the most pronounced problem of day-old chick procurement and thus limits the number of chicks a farmer can buy at any given time.

TABLE 4.8 PROBLEMS OF DAY-OLD CHICKS PROCUREMENT IN OWERRI, 1998 (%) n = 80

OPTION PROBLEM	NUMBER OF FARMERS	% OF FARMERS
Transportation problems	13	16.25
irregular supply of chicks	13	16.25
High cost of chicks	54	67.5
TOTAL	80	100

SOURCE: FIELD SURVEY, 1998.

About seventy five percent (75%) of the farmers also agreed that high cost of feed as their major problem in feed procurement while 25% identified high transport cost whereas none asserted insufficiency of feed as problem (Table 4.9). This implies that high cost of feed is the major problem encountered by poultry farmers. This is in line with Alawa and Balogun (1989), Lamorde et al (1981), Fetuga (1977, and many other researchers that high cost of feed is a major constraint to poultry production in Nigeria.

TABLE 4.9 PROBLEMS OF FEED PROCUREMENT BY POULTRY FARMERS IN OWERRI, 1998, (%) n = 80

OPTION PROBLEM	NUMBER OF FARMERS	% OF FARMERS
High cost of feed	60	75
High transport cost	20	25
Insufficiency of feed	-	-
TOTAL	80	100

SOURCE: FIELD SURVEY, 1998.

4.5 CHANGES IN THE PRICE OF FEEDS AND DAY-OLD CHICKS

The price of feeds and day old chicks had witnessed a steady increase since 1986 to 1997; from a mere price of N50 per bag of feed and N25 per day old chick in 1986 to N600 per bag of feed and N55 per day old chick in 1997 (Table 4.10). This is due to high inflationary rate caused by the depression in the economy. This triggered high cost of poultry inputs like feeds and day old chicks. This is however in agreement with Alawa and Balogun (1989) who opined that inflation has had an adverse effect on the price of livestock inputs especially feeds.

Table 4.10 **EFFECTS OF INFLATION ON THE PRICE OF FEED AND DAY OLD CHICKS IN OWERRI, 1998**

Year	Feeds		Chicks		Norminal	Price
	Quantity (Bag)	Price(N)	Quantity	Price (N)	Price (N)	Deflation
1986	1	50	1	25	75	100
1987	1	60	1	25	85	113
1988	1	110	1	30	140	186
1989	1	113	1	30	160	213
1990	1	220	1	30	250	333
1991	1	270	1	30	300	400
1992	1	365	1	35	400	533
1993	1	370	1	35	405	540
1994	1	430	1	40	470	626
1995	1	480	1	45	535	713
1996	1	550	1	55	605	807
1997	1	600	1	60	600	880

SOURCE: FIELD SURVEY, 1998.

The implication of high cost of feeds is that it limited the number of birds kept by farmers. It also increase production cost which invariably reduces profit margin. The collapse of many poultry farms have been traced to high cost of feeds and other input factors.

4.6 FEEDING OF POULTRY CHICKS

As a result of the high cost of feed some poultry farmers resorted to the use of non- conventional feeds. About 18.75% of the farmers accepted using non-conventional feeds in their farms while 81.75% of them still uses the conventional feeds in the feeding of their poultry chicks (Table 4.11). Non-conventional feeds are formulated using local sourced raw materials or wastes from grains. The by-products which are considered as substitute to the conventional components which the users considered as being cheaper and readily available to them. This is an conformity with Fetuga et al (1992), Udedibie et al (1993) and Adeyanju et al (1975) who all agreed with the use of locally available materials like industrial wastes and by-products as substitutes for conventional feeds due to its availability, nutritive value and relative cost.

However, majority of the farmers who use conventional feeds argued that non-conventional feeds are unscientific and as well as easy source of disease to birds.

TABLE 4.11 DISTRIBUTION OF FARMERS ON THE USE OF CONVENTIONAL AND NON- CONVENTIONAL FEEDS IN OWERRI, 1998 (%) n = 80.

OPTION TYPES	NUMBERS OF FARMERS	% OF FARMERS
Conventional feeds	65	81.75
Non-conventional	15	18.75
TOTAL	80	100

SOURCE: FIELD SURVEY, 1998.

4.7 RESOURCE AVAILABILITY

About 12.5% of the farmers identified Bank loans as their source of finance while 87.5% of them got their finance through individuals (Table 4.12). The few number that source through the bank are mainly large scale farmers who can provide the collateral as required by the banks. Whereas the majority of farmers that source through individuals are mainly small scale farmers who lacked adequate

collateral to qualify them for bank loans and they find it so cumbersome and time consuming. They therefore, preferred to borrow from individuals. Finance has been a major problem affecting poultry production. This agrees with Lamorde et al (1981) who expressed that scarcity of resources as well as, poor funding contributes negatively to the growth of poultry industry in Nigeria.

TABLE 4.12 DISTRIBUTION OF FARMERS BY SOURCES OF FINANCE IN OWERRI 1998 (%) n = 80.

OPTION SOURCE	NUMBER OF FARMERS	% OF FARMERS
Bank loan	10	12.5
Individual loan	70	87.5
TOTAL	80	100

SOURCE: FIELD SURVEY 1998.

Also about 41.25% of the farmers makes use of the available labour from the family while 58.75% uses hired labour is their farms (Table 4.13). The farmers that uses hired labour are mostly large scale farmers with large farm size and demands specialization in order to ensure optimum realization of the enterprise objectives. The result shows that majority of the farms used family labour and are mainly small scale farmers who cannot afford the large capital needed to hire labour.

TABLE 4:13: DISTRIBUTION OF FARMERS BY SOURCE OF LABOUR IN OWERRI. 1998 (%) n = 80

OPTION SOURCE	NUMBER OF FARMERS	% OF FARMERS
Hired labour	33	41.25
Family Labour	47	58.75
TOTAL	80	100

SOURCE: FIELD SURVEY, 1998.

4.8 MARKETING CHANNELS FOR POULTRY PRODUCTS

Farm size determines the pattern of distribution channel. The local Government areas studied within Owerri zone have both large scale and small scale producers with local and urban markets existing in the areas (Figure 4.1). But due to the proximity of the areas to capital market most of them supplied their products to Owerri main market.

The pattern of distribution of large scale producers was from middlemen to retailers down to the final consumer. The small scale producers distribution channel was from retailers to the consumers. Poultry products is one of the major source of animal protein to the people of Owerri. The demands for the products is high hence distribution of the products takes place daily.

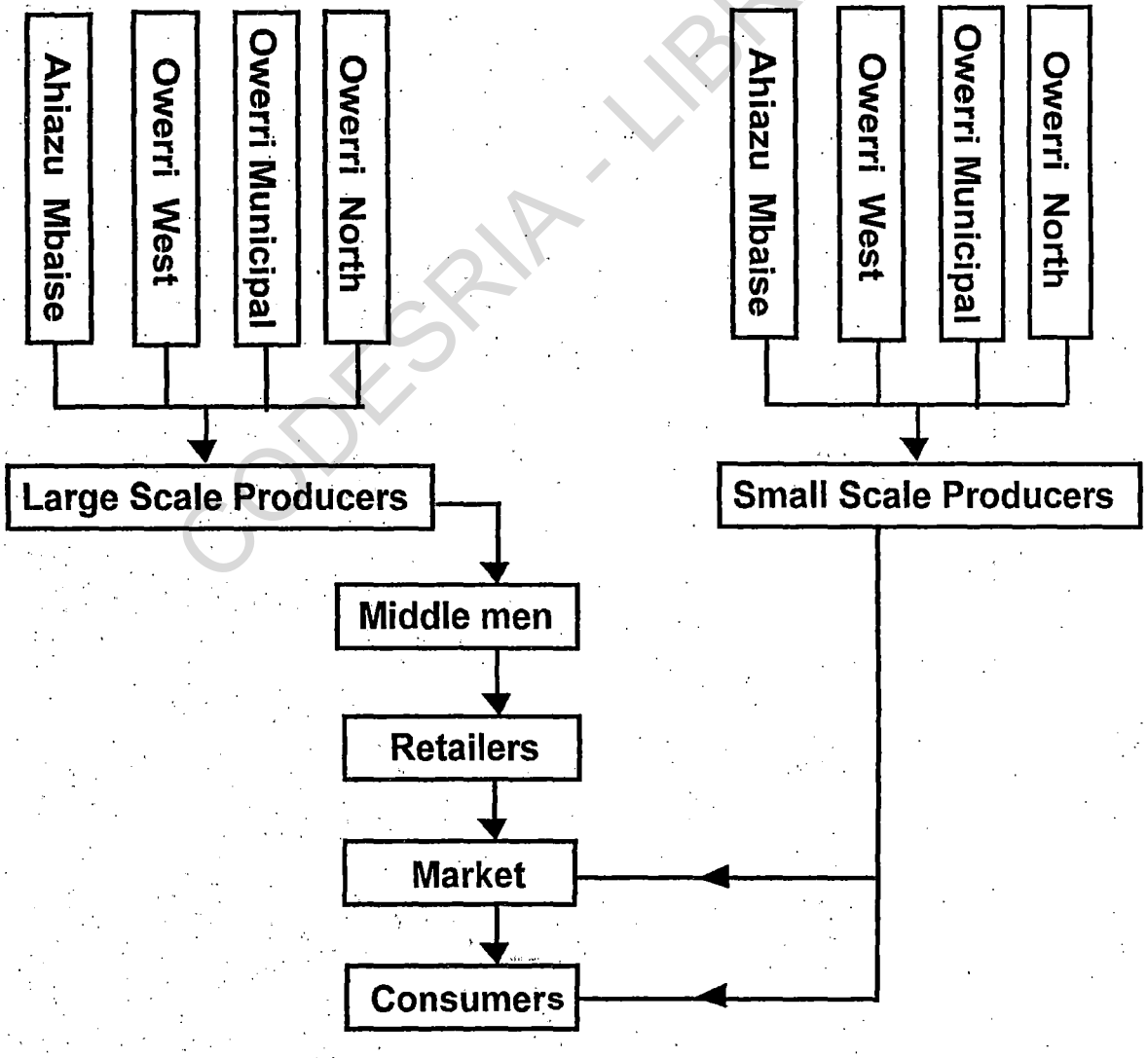


FIGURE 4.1: CHANNEL OF DISTRIBUTION FOR POULTRY PRODUCTS IN OWERRI, 1998.

About 31.25% of the farmers market their products through the middlemen, 50% of them market through retailers while 18.75% market through direct supply to customers (Table 4.15). This shows that majority of the poultry products were marketed through the retailers who latter sold them to the consumers. Those that marketed directly were mainly broiler producers who supplied directly to Hotels and supermarkets. Hatchery and breeding operators and egg producers marketed their products mainly through the middlemen.

TABLE 4.14: PERCENTAGE DISTRIBUTION OF POULTRY PRODUCTS THROUGH THE MARKETING CHANNELS IN OWERRI, 1998 n = 80

OPTION CHANNEL	NUMBER OF FARMERS	PERCENTAGE OF FARMERS
Through middlemen	25	31.25
Through retailers	40	50
Through direct supply	15	18.75
TOTAL	80	100

SOURCE: FIELD SURVEY, 1998.

From 1986 to 1997 there have been a steady increase in the prices of poultry products especially the prices of egg and matured birds (Table 4.16). Results showed that the prices of a crate of egg rose steadily from N7.50 in 1986 to N150 in 1997 whereas that of mature bird rose from N100 in 1986 to N400 in 1997. This situation was precipitated by high inflationary rate recorded in the country during this period. The aftermaths of this being the problem of increased input costs with corresponding increase in cost of outputs. This was however illustrated with figure 4.2 which showed the steady price increase of poultry products during this period 1986-1997.

TABLE 4.15: PRICE OF POULTRY PRODUCTS FROM 1986-1997 IN OWERRI, 1998

Year	Products				Nominal Price	Price Deflation
	Egg		Mature Bird			
	Quantity(crate)	Price (N)	Quantity	Price(N)		
1986	1	7.5	1	100	107.5	100
1987	1	9.0	1	100	109	101
1988	1	12	1	100	112	104
1989	1	16	1	110	126	117
1990	1	18	1	150	168	156
1991	1	26	1	180	206	192
1992	1	45	1	180	225	209
1993	1	75	1	220	295	274
1994	1	110	1	250	360	335
1995	1	120	1	300	420	391
1996	1	140	1	350	490	456
1997	1	150	1	400	550	512

SOURCE: FIELD SURVEY 1998.

The major problems of marketing poultry products included: high transportation cost, Grading of products, storage facilities and lack of processing and packaging equipments (Table 4.17). 40% of the farmer asserted high transportation cost as their major problem; 17.5% of them identified Grading problems while 20% showed storage facilities. The other 22.5% said that lack of processing and packaging equipment as the major problems in marketing poultry products.

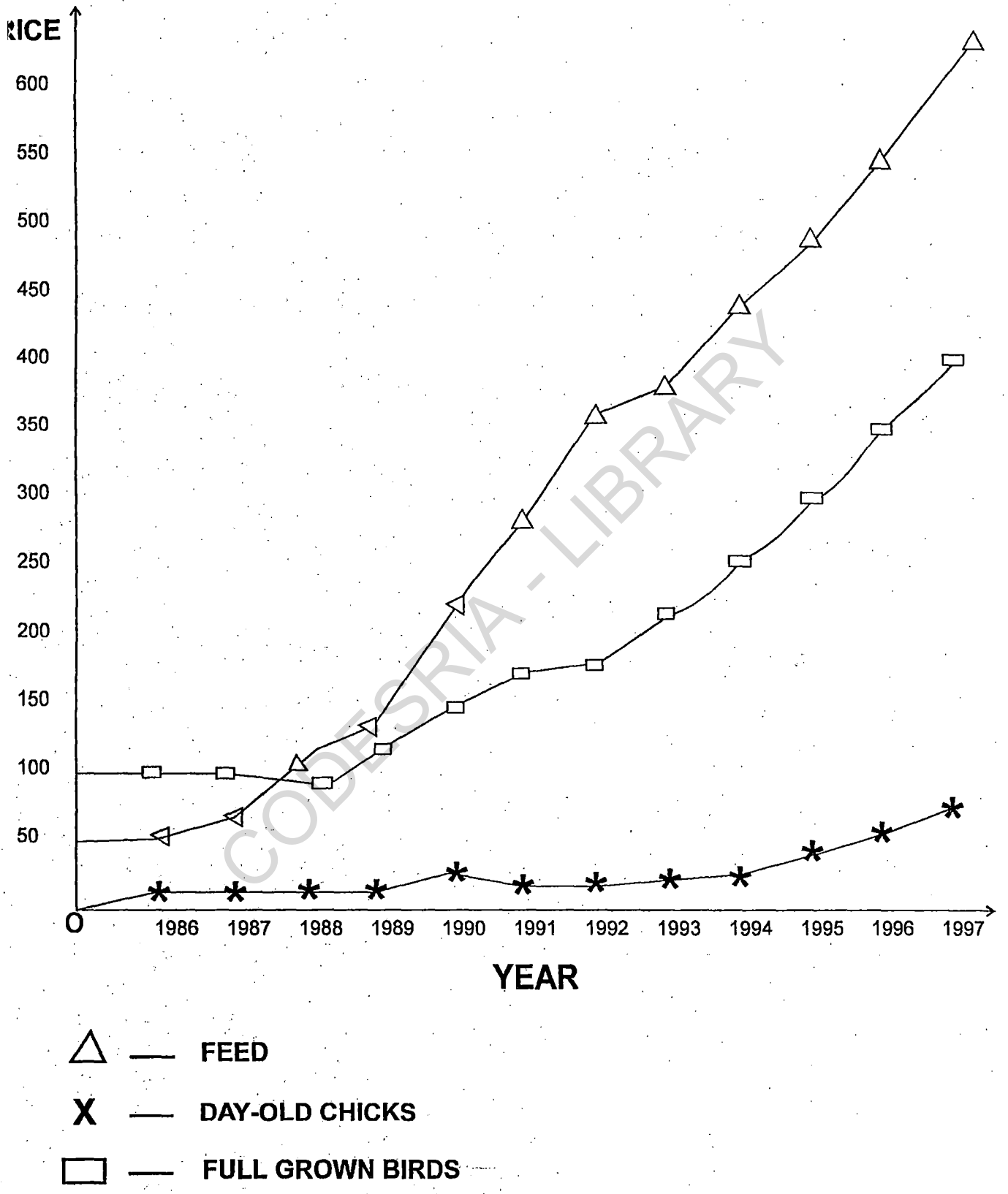
This implies that high cost of transportation was the most mentioned problem. Transportation is one of the most important marketing services which performs an important function of time and place utilities in marketing. It's increased cost invariable results in increased marketing cost and the price of poultry products thus become expensive in the area.

TABLE 4.16: PROBLEMS OF MARKETING POULTRY PRODUCTS IN OWERRI, 1998 (%) n = 80.

OPTION PROBLEMS	NUMBER OF FARMERS	% OF FARMERS
High Transport cost	32	40
Grading of products	14	17.5
Lack of storage facilities	16	20
Lack of processing & packaging Equipment	18	22.5
TOTAL	80	100

SOURCE: FIELD SURVEY, 1998.

FIG. 4.2 AVERAGE PRICE OF DAY OLD CHICKS, FULL GROWN BIRD AND FEED FROM 1986 - 1997 IN OWERRI, 1998



SOURCE: FIELD DATA 1998

CHAPTER FIVE

PROFITABILITY ANALYSIS OF POULTRY FARMERS

5.1 COST AND RETURNS IN POULTRY PRODUCTION

Feeding, Housing, equipment, Day-Old chicks, Drugs and Vaccines are the major cost items that affects poultry production (Table 5.1). Amongs all these, feeding 53.5% were the most pronounced cost item in poultry production. Housing and equipment contributed 12.2% and 9.3% respectively in the total cost while Day-old Chicks accounted for 10.6%, labour cost, drugs and Vaccines were 7.6% and 6.6% of the total cost respectively.

This shows that high cost of feeds and feeding is the highest cost item in poultry industry and this could be traced to the scarcity and high cost of maize, the major raw material for feedstuff formulation. As a result of this, producers spend greater part of their resources in this cost factor and this affects their profit margin. Other cost factors like equipment building materials, drugs and Vaccines etc. though low percentage contribution equally recorded high price due to the nations' economic problem with its attendant high inflation rate. The resultant effect of these high cost of production being low production output, low sales and little or no profit.

Moreso the table shows the value of returns to Naira invested as 6 Kobo. This implies that poultry farming is a profitable enterprise but as a result of the prevailing economic situation, profit realized was poor. A better result will be achieved if the problem of high cost of input factors is addressed.

TABLE 5.1: CONTRIBUTION OF INPUTS TO TOTAL COST OF POULTRY FARMERS IN OWERRI 1998 (%) n = 80.

COST ITEMS	VALUE (₦)	% CONTRIBUTION
Fixed cost (FC)		
Housing	5555915	12.2
Equipment	4239550	9.3
Total Fixed Cost (TFC)	9795465	21.5
Variable Cost (VC)		
Drugs and Vaccines	3016200	6.6
Feeding	2438600	53.5
Cost of chicks	4846950	10.6
Labour cost	3472590	7.6
Total Variable Cost (TVC)	35721740	78.3
Total cost (TC)	45517205	
Net farm income (NFI)	2845981	
Return to Naira Invested	0.062	

SOURCE: FIELD SURVEY, 1998.

5.2 EXPENDITURE AND INCOME ANALYSIS FOR BROILER PRODUCTION

The total cost of N332000 and total revenue of N380000 with an average cost of N332 and a net income of N47100 was recorded for the production of one thousand broilers (Table 5.1). 67.28% of the total cost went to feeding alone while 15% was spent on the purchase of stock (Day-Old Chicks), 41% was spent on drugs and vaccines whereas 5.4% and 5.6% went to labour cost and contingencies respectively. This implies that more than 60% of the cost of broiler production

went into feeding of the livestock. This agrees with Fetuga (1977) who expressed that feeds constitutes between 60 -80% of the cost of producing meat and eggs on a livestock farm. This means that the success of any poultry business rest largely upon the availability of quality and affordable feeds. The high cost of feeds being attributed to the high cost of the major raw material maize used in feed formulation. The problem would be addressed if, the government liberalizes the maize market and subsidizes inputs for local producers for enhanced maize production in the country. This therefore would reduce production cost and increases the profit margin.

TABLE 5.2: EXPENDITURE AND INCOME FOR BROILER PRODUCTION IN OWERRI, 1998.

Items	Quantity	Unity price	Amount	% Contribution
Revenue				
Sales of birds	950	400	380,000	
Expenditures				
Stocks				
(Day-Old Chicks)	1000	50	50,000	150
Feeds	350	640	224,000	67.28
Drugs and Vaccines			13500	4.1
Labour			18000	5.4
Contingences			18500	5.6
Total Variable cost			324000	
Average cost of production per one				332
Gross profit				56,000
Depreciated assets				8900
Total Cost (TC)				332900
Net return				47100
Return to Naira Invested				0.141

SOURCE: FIELD SURVEY 1998

5.3 EXPENDITURE AND INCOME FOR LAYERS PRODUCTION

From the study, an expenditure of N692,300 and a total income of N720,000 with an average cost of N144 for one crate of egg and a net profit of N27,700 was realized in a layer farm with a capacity of one thousand birds (Table 5.2). Feeding cost accounted for 69.3% of the total cost, Drugs and vaccine 8.2% while cost of day-old pullets represents 7.2%. Labour cost and contingencies contributed 5.7% and 8.16% respectively. This equally showed that more than 60% of the total cost went on feeding alone likewise as was in the broiler production above.

TABLE 5.3: EXPENDITURE AND INCOME FOR COMMERCIAL EGG PRODUCTION IN OWERRI, 1998 (1000 PULLETS)

Item	Quantity	Unit price	Amount(N)	% Contribution
Revenue				
Sales of Egg	4800 crates	150/crate	720,000	
Expenditures				
Stocks (Day-old pullets)	1000	50	50,000	7.2
Feeds	750 bags	640	480,000	69.3
Drugs and Vaccines			56,800	8.2
Labour			39,400	5.7
Contingencies			56,500	8.16
Total Variable Cost (TVC)			682,700	100%
				Amount (₦)
Gross profit				37,300
Depreciated assets				9600
Total cost (TC)				692300
Net Return				27700
Return to Naira invested				0.038

SOURCE: FIELD SURVEY, 1998.

In an effort to overcome the high cost of production with low profit margin in the poultry industry, farmers resorted to the use of non-conventional feeds based on the use of industrial wastes which are cheaper and even nutritious like the conventional feeds. This was in line with the recommendation of Abegbola 1977, Adeyanju et al (1975) and has helped to reduce the competition between man and poultry industry over the use of maize (Udedibie et al 1993).

Table 5.3 showed a typical example of the non-conventional feed (grown marsh) being formulated by poultry farmers for their use. Other forms of feeds was equally found to be cheaper when formulated by farmers. When compared with the price of conventional feeds in table 5.4, it was found to cost less and if it was produced in a large scale for the use of many farmers, the cost will drastically reduce.

TABLE 5.4: PRODUCTION OF A TONNE OF NON-CONVENTIONAL FEED (GROWERS MASH) IN OWERRI 1998.

INPUTS	QUANTITY (KG)	COST (₦)
Soya bean meal	40	1080
Groundnut cake	20	380
Maize offals (Grit)	350	10500
Palm Kernel Cake (PKC)	150	900
Wheat offal	160	1200
Spent grain	150	1500
Rice Bran	30	300
Salt	5	50
Blood meal	30	1800
Bone meal	35	1050
Fish Meal	5	350
Premix	7	840
Vegetables	5	200
Make-up	20	350
TOTAL	1012kg	20500

SOURCE: FIELD SURVEY 1998. Note: 1 tonne = 40 bags of feed

TABLE 5.5 COMPARATIVE PRICE ANALYSIS FOR CONVENTIONAL AND NON-CONVENTIONAL FEED 1998.

Feed type	Price per 25kg bag		Price
	Conventional	Non-conventional	Difference (N).
Growers Mash	520	490	30
layers Mash	620	600	20
Broiler stater	730	700	30
Broiler finisher	680	650	20
Checks Mash	650	630	20

SOURCE: FIELD SURVEY, 1998.

When used in the feeding of poultry birds a total price difference of N11,130 was realized from broiler farm and N12,800 from layers farm (Table 5.5). This showed that the use of non-conventional feeds by farmers would help reduce their production cost and increased their profit margin. This is however in line with the recommendations of Longe (1987) and Udedibie (1993) that the use of by-products as substitutes for maize in rations reduced the cost of production without any adverse effect in carcass quality and economy of feed conversion of poultry birds.

TABLE 5.6: USE OF NON-CONVENTIONAL FEEDS IN POULTRY FARMS IN OWERRI 1998

FEED TYPE	AGE OF BIRDS	QUANTITY IN BAG (25kg)	COST (N) CONVENTIONAL	COST (N) NON-CONVENTION	PRICE DIFFERENCE
BROILERS					
Broiler starter	0-5 weeks	175	127,000	122,500	5250
Broiler finisher	5-9 weeks	196	133,280	127,400	5880
TOTAL	9 weeks	371	261,030	249,9001	6200
LAYERS					
Chick mash	0-8 weeks	280	182,000	176,400	5600
Growers Mash	8-20 weeks	540	280,800	264600	16200
TOTAL	20 weeks	820	462,800	441,000	21,800

SOURCE: FIELD SURVEY, 1998.

Note: 1000 birds consume an average of 5 bags of starter or chick mash and average of 7 bags of finisher or Grower marsh per day.

5.4 DETERMINANTS OF PROFITABILITY OF POULTRY FARMS

The estimated production function arrived at from the multiple regression analysis of the data was tested in three functional forms, notably the linear functional form, the double log and semi-log forms (Table 5.6).

The coefficient of housing (X_1) in the regression result indicated positive in linear form and negative in both semi-log and double log forms. This implies that

an increase in the cost of housing increases the net poultry output in linear form while it decreases output in both semi log and double log functions.

The coefficient of equipment (X_2) showed a negative sign in the three functional forms. This means that increased cost of equipment decreases output.

The coefficient of drugs and Vaccines (X_3) was negative in the three functional forms, which means that increased cost of drugs and vaccines decrease output.

The coefficient of feeding (X_4) showed positive in the three functional forms. This implies that an increased feeding increases output.

The coefficient of Day-old chicks is positive in both linear and double log forms but negative in semi log forms. This showed that an increase in the purchase of day-old chicks increases output in both linear and double log forms but reduces output in semi-log form. The coefficient of labour (X_6) is positive in the three functional forms. This indicated that an increased number of employees in the poultry farm increases output. The value of F-calculated was significant in both linear and double log forms but not significant in semi log function.

The choice of the lead equation is dependent on the value of R^2 and the number of significant coefficient in a given function. Therefore, linear functional form which has the highest R^2 as well as the highest number of significant coefficient was chosen as the lead equation. The equation is thus stated.

$$\begin{aligned} Y = {} & 7565 + \underset{(0.603)}{0.011X_1} - \underset{(-1.893)}{0.116X_2} - \underset{(-0.146)}{0.003X_3} + \underset{(4.902)}{0.058X_4} + \underset{(3.568)}{0.215X_5} \\ & + \underset{(0.251)}{0.039X_6} \quad ; \quad R^2 = 0.9776 \end{aligned}$$

Note: The figure in parenthesis are standard errors. The R^2 value of the linear log form was 0.977 implying that 97% of the variations in the net income was explained by the estimated coefficients included in the model. The coefficient of feeding, and

Day-Old chicks are both significant at 10 and 5 percent levels of significance. Based on this, the linear functional form produced the best fit model as can be observed from table 5.7 and is selected for further discussion.

TABLE 5.7: MULTIPLE REGRESSION ANALYSIS OF THE PROFITABILITY OF POULTRY FARMS IN OWERRI, 1998.

Explanatory Variables	Linear	Double log	Semi -log
Housing (X_1)	0.01090	-0.000346895	-8517.5068
	(0.6903)	(-0.334)	(0.70368)
Equipment (X_2)	-0.11591783	-0.03215855	-14927.4629
	(-1.8932)	(-0.29328)	(-1.1664)
Drugs and Vaccines (X_3)	-0.00255390	-0.04388413	-29092.9350
	(-0.1456)	(0.3214)	(-1.82595)
Feeding (X_4)	0.058372606	0.23548174	41771.41150
	(4.90189)	(1.68716)	(2.5641)
Chicks (X_5)	0.215256556	0.495678266	-5045.44506
	(3.56813)	(2.8318)	(-0.2475)
Labour (X_6)	0.029846224	0.204355497	57183.40665
	(0.25127)	(1.3649)	(3.2724)
Constant term	7565.8830	0.67067	-420896.956
R^2	0.9776	0.70762	0.45183
F- cal	532.7051	29.446	10.028
n	80	80	80

It could be observed that the coefficient of feeding (X_4) and Day-old Chicks (X_5) are positive and are significant at 5 percent and 10% levels of significance. This infers that net income in poultry production increases with increased expenditure on feeding and day-old Chicks, hence, feeding and day-old Chicks coefficients are significant at 5% probability level and 10% probability level. Thus, we accepted our first null hypothesis that feeding costs is not a constraint to poultry production in Owerri.

Furthermore, the coefficient of housing is positive but not significant at 5% and 10% probability levels. This implies that an increase in housing cost increases the net output but hence the result is not significant, we rejected the second null hypothesis that housing is not constraint in poultry production operation.

We also inferred from the table that the coefficient of equipment and drugs were negative to the net income as well as not significant at 5% and 10% probability levels. This therefore indicated that increased prices of equipment and drugs reduces net incomes in poultry production. The rate of increase in equipment costs and drugs was proportional to a decreased rate of output. We therefore reject the second null hypothesis that equipment and drugs have no effect on net income.

The coefficient of labour was positive to net income but not significant. This showed that increased number of persons engaged in management of poultry farm increase output. Since the level of probability was not significant, we reject the third null hypothesis that labour does not significantly affect not profit in poultry production.

5.5 ADJUSTMENT STRATEGIES

Adjustment now becomes inevitable due to the continued increase in the cost of production inputs especially feeds. Maize, the primary raw material for feed formulation has continually witnessed increase in price as a result of low production output, government policies on agriculture coupled with competitiveness in usage of available maize between feed manufacturing firms and other industries.

The implication of this being increased cost of feed production with subsequent increase in the cost of production in poultry farms with its attendant low profit margin and thus the business becomes unattractive.

In order to protect the poultry industry from total collapse, there is need to look inwards for alternative survival strategies to circumvent the high cost of factor inputs. This will help to alleviate the problems operators and consumers alike are suffering. The adjustment strategies employed by farmers include:

(a) USE OF NON-CONVENTIONAL FEEDS

Since feedstock constitutes about 60-70% of the total production cost in poultry industry and has witnessed continued increase in price, there becomes a need to evolve an alternative strategies which does not involve the use of maize as major energy source. Farmers resorted to the use of non conventional feeds which involved the use of industrial by-products and waste like cassava peels, brewers wastes, wheat bran, rice bran etc. to replace the maize contribution to feeds thereby reducing the total feed costs and boast production

(b) COST REDUCTION STRATEGY

This involves the reduction in overhead cost in other to remain in business. This cuts across material and human resources Most entrepreneurs seek and adopted alternatives that still yielded good results. In this days of double digits inflation, it becomes obvious that "cost reduction" means "profits earned".

There was prudent management of resources by farmers which helped them to prevent wastes of resources and in turn conserves money. This among others was in line with the remarks made by Bilgram (1982) that cost reduction in agricultural projects could be achieved by high performance, equipment, high quality feeds and most importantly cost effectiveness and cost minimization.

(c) AGGRESSIVE MARKETING

One of the major problems faced by poultry farmers was the marketing of their products. This has rubbed them of huge sum of money and has resulted into low profit. Aggressive Marketing is a powerful tool to survival in a depressed

economy. This involved creating awareness of the products of the farm to the consumers through handbills, posters, radio and television broadcast, public announcement in churches and market places and this helped to increase the level of sales by farmers and higher income too. This system was however supported by chaula (1979) who opines that for a poultry farmer to remain in business next year depends on his marketing today.

(d) DIVERSIFICATION

By diversification this means a system whereby the farmers increase his areas of activity. Most farmers integrated other business to their poultry business like fish ponds, crop production, and other unrelated business some of which benefited from the poultry by-products and their products equally used in feeding the birds. This reduced the cost of production and increased farmers income level in the midst of depressed economy.

CHAPTER SIX

SUMMARY AND CONCLUSION

6.1 SUMMARY

This study was to examine the adjustment strategies of livestock enterprises in a depressed economy with emphasis on the poultry industry in Owerri. The research was carried out in Owerri zone Imo State, Nigeria. A total of eighty poultry farmers selected out of the 120 farmers in the area were interviewed by the use of questionnaire. Data was collected, analysed and tested within an implicit model (regression analysis) and T-test tools.

Results showed that the four main categories of poultry enterprises include breeding and hatchery operation, commercial egg production, broiler production and marketing of poultry product of which the most widely practiced was broiler production (43.75%). The problems faced by poultry enterprises included high cost of transport, high cost of feeds, Irregular supply and high cost of chicks and marketing problems. The most pronounced was the high cost of feeds which accounted for more than 60% of the total cost of production. Many strategies were adopted by farmers to overcome these problems ranging from reduction cost strategy, aggressive marketing, diversification to the use of non- conventional feeds though this has not been implemented by most farmers because of lack of knowledge and awareness of research finding on nutrient content of most by-products used in feeding livestock. The profitability analysis of the enterprises showed that broiler production with a net return of N47,100 and return per Naira invested of .141 was profitable than commercial egg production with a net return of N27,700 and .038 as return per Naira invested.

6.2 CONCLUSION

The study has been able to show the various adjustment strategies being employed by livestock enterprises due to high cost of feeding which include the

use of non-conventional feeds and cost reduction strategies among others.

Broiler production was found to be more profitable with high rate of returns than other categories of poultry enterprises. Consequently, to save the poultry industry from total collapse as a result of the depressed economy, the following recommendation are made.

Government should subsidize the input items in poultry industry to act as incentive to farmers, as this will encourage more people to invest in the poultry industry while those that had already invested encouraged to remain viable in business. Also the government should liberalize the maize market as this will help to reduce the cost of feeds and keep it affordable while research finding in poultry industry made public for the consumption of poultry farmers.

More research is thus suggested for the alternative energy source other than maize which is highly competitive. This will reduce the cost of feeds and enhance farmers income.

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APPENDIX 1

COST AND RETURNS IN POULTRY PRODUCTION IN 1997

The mode is

$$Y = f(X_1, X_2, X_3, X_4, X_5, X_6)$$

Where

Y	=	Net Income (₦)
X_1	=	Housing Cost (₦)
X_2	=	Equipment Cost (₦)
X_3	=	Drugs and Vaccines (₦)
X_4	=	Feeding Cost (₦)
X_5	=	Cost of Chicks (₦)
X_6	=	Labour Cost (₦)

S/N	Y	X_1	X_2	X_3	X_4	X_5	X_6
1	38476	10,000	17,000	25,000	50,000	130,000	40,000
2	22250	50,000	10,000	5,000	30,000	60,000	12,000
3	21,500	20,000	10,000	10,500	25,000	18,000	8000
4	24,500	10,000	4,000	16,000	70,000	26,000	6,000
5	30,000	100,000	10,000	50,000	22,000	55,000	25,800
6	6,000	25,000	15,00	2,000	25,200	9,000	2,000
7	750,000	779595	450,000	350,000	10400000	700000	1100000
8	260,000	815,000	290,000	300,000	250,000	400,000	291220
9	12000	15000	24000	40,000	145,000	32,000	24,000
10	15770	125,000	90,000	36,000	180,000	65,000	28,000
11	19200	105000	90,000	70,000	270,000	40,000	30,000
12	6405	130,000	15,000	13,000	80,000	19000	6500
13	8840	20,000	13,000	12,000	30,000	15,000	7000
14	32230	115000	14000	65000	250000	75000	32500

15	12022	170000	125000	110,000	555,000	130,000	82800
16	32230	18000	15000	22000	65,000	15000	13000
17	12022	45000	12000	7000	38000	12000	22350
18	18236	80,000	25,000	18,000	120,000	28000	18,000
19	2250	9000	12000	14000	28000	12000	14000
20	4300	20,000	7000	15000	35000	18000	9500
21	41000	143000	150000	30000	200000	50000	54450
22	38000	90,000	40000	60000	145000	32000	27600
23	24770	22000	27000	16000	75500	49000	13400
24	32520	45000	35000	20000	105000	30000	18950
25	29600	12000	48000	23000	190000	50000	18000
26	3950	25000	13000	9000	38000	14500	10000
27	6200	9000	7000	3000	16000	12000	5000
28	2400	12000	15000	10000	18000	13000	9000
29	85000	142000	70000	40000	340000	133500	57500
30	47500	83000	45000	30000	160000	4500	17000
31	29625	103000	37000	50000	254000	90000	24000
32	2320	1500	11000	8000	28000	8000	3000
33	4700	10000	18000	7000	20000	13000	8000
34	2121	19000	13000	6000	17000	14000	4000
35	4700	22000	14000	12000	27000	14000	6000
36	5300	15000	13000	9000	38000	16000	14500
37	22280	40000	65000	23000	170000	28000	16000
38	13000	25000	23000	14000	70000	24000	10000
39	9260	6000	9500	6500	22000	20000	7000
40	10250	12000	11500	8000	14000	70000	9000
41	31000	89000	62000	21000	151000	5600	32000
42	42000	200000	125000	118000	550000	137000	60000
43	29870	100000	98000	29000	270000	60000	40000
44	8445	22000	28500	12000	36600	21100	24000
45	12785	74000	37000	26000	59000	23000	36000
46	6340	16000	15000	14500	28600	19000	9500

47	5680	14000	9000	8000	24000	16000	4000
48	8150	28000	2000	6500	32000	20000	7800
49	14091	55000	22000	24000	140000	35000	18000
50	13540	18000	24000	11000	4600	19500	24000
51	35000	6500	53000	20500	230000	70000	38500
52	26600	55000	66500	19000	125000	82000	27000
53	49900	100000	170000	65000	620000	155000	85000
54	26727	13000	180000	210000	580000	15000	62900
55	20500	30500	49000	22000	88600	55000	24000
56	44800	122000	12500	42000	430000	196000	40500
57	3500	22000	37000	8000	53000	27650	7500
58	50999	14000	40000	14000	59000	36000	4800
59	68000	83000	220000	62500	915000	180000	210000
60	22500	29000	53000	16500	85500	20000	14000
61	26760	44550	35500	40300	155000	40000	24000
62	18147	28000	37000	23000	85500	22050	7540
63	36000	35750	35400	33000	175600	47000	22000
64	12135	8770	10500	6500	37000	16550	12000
65	11894	22600	39500	14450	52000	21550	8500
66	46400	32000	69000	24000	182000	65000	36000
67	14450	14000	20500	9000	72600	26500	12000
68	49850	50000	100500	52000	425000	103000	50000
69	40204	20000	32500	23650	100500	35000	26800
70	18140	17800	13000	25500	63500	17600	9000
71	9380	9000	15000	6500	29500	12600	12000
72	23900	40000	60500	33000	197000	65000	18000
73	28700	32000	17500	56600	325000	82000	64000
74	12200	24350	14000	7500	71600	33500	12850
75	5992	22800	8450	5000	32000	18050	9680
76	57500	110000	155000	865000	626000	125000	105000
77	50440	180000	157000	110500	485800	132600	62000
78	20460	39500	30500	24500	97600	28600	16000
79	10360	12000	21000	16500	58500	24600	14500
80	13415	65000	49700	23700	93600	29500	18650

APPENDIX 2

QUESTIONNAIRE

ADJUSTMENT STRATEGIES OF LIVESTOCK ENTERPRISES IN A DEPRESSED ECONOMY:

A STUDY OF POULTRY ENTERPRISES IN OWERRI, IMO STATE OF NIGERIA.

Tick [✓] in the box and write where necessary.

1. Name of the Farmer/Farm.....

   .....

2 Location of the Farm.....

   .....

3. Knowledge of the business:

   (a) Trained on the job [ ]

   (b) Primary School Education [ ]

   (c) Secondary School Education [ ]

   (d) Higher Education (OND, HND, Degree) [ ]

4. When did you start poultry business?

   .....

5. Is your Farm

   (a) A Government Farm? [ ]

   (b) A Co-operative Farm? [ ]

   (C) A Private Farm ? [ ]

   (d) A Co-operation? [ ]

6. What type of farm Enterprise?

(a) Breeding and hatchery operations ☐

(b) Commercial Egg Production ☐

(c) Broiler Production ☐

(d) Marketing of poultry products ☐

(e) Feed milling ☐

(f) Processing ☐

(g) Others, specify ☐ .....

7. What has been the size of your farm since inception?

Year	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Size													

8. Why has there been changes in your Farm size since inception?

(a) Insufficient available land ☐

(b) Lack of infrastructure ☐

(c) Financial problem ☐

(d) Inadequate supply of Day old Chicks ☐

(e) More Profits/Money ☐

(F) Others, specify ☐ .....

9. What type of birds do you keep?

(a) Chicken ☐

(b) Duck ☐

(c) Others, specify ☐ .....

10. From where have you been sourcing your supply of chicks?

Sources	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
(a) Local Hatchery													
(b) Personal Hatchery													
(c) Direct Importation													
(d) Middle men													

11. Why have there been changes in your source of chicks supply?

.....

.....

12. What problems do you encounter in obtaining your day old chicks?

(a) Transportation problems ☐

(b) Irregular supply from the source ☐

(c) High cost of chicks ☐

(d) Others specify:.....

13. What Management system have you adopted since you started production?

MGT System	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
(a) Battery Cage													
(b) Deep Litter													
(c) Semi-Intensive													
(d) Others specify													

14. Why have there been changes in the type of system of Management?

(a) Insufficient floor space ☐

(b) Large number of birds ☐

(c) Low cost of materials ☐

(d) Small number of birds ☐

(e) Others, specify ☐ .....

15. Where do you obtain your feed?

(a) Direct from producers ☐

(b) From middlemen ☐

(c) Personal production ☐

16. If your feed is mixed in your farm list the components and quantity mixed per unit.

(a) .....

(b) .....

(c) .....

(d) .....

(e) .....

17. Preparation of feed is done on a

(a) Daily ☐ (b) Weekly ☐

(c) Monthly ☐ (d) Others, Specify basis

.....

18. What has been the price per bag of feed since 1986 to 1998.

Year	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Price													

19. What brand of feed have you used since 1986 to 1998?

(a) Pfizer ☐ (b) Guinea Feed ☐

(c) Sanders ☐ (d) Non Conventional ☐

(e) Others, Specify .....

20. How does Feeds (s) affect your production?

.....

.....

21. What problems to do you encounter mostly in purchasing feed?

(a) High Cost of feed ☐

(b) High Transportation cost ☐

(c) Insufficiency of feeds ☐

(d) Others, specify .....

22. Do you use non-conventional feeds?

(a) Yes ☐ (b) No ☐

23. What are the advantages and disadvantages of non-conventional feeds?

.....

.....

.....

24. Do you have storage facilities for the feed (s)

(a) Yes ☐ (b) No ☐

25. What problems do you have storing your feeds?

(a) Rat problems ☐ (b) No problem ☐

(c) The feeds get rancid ☐

26. How do you combat these problems?

.....

.....

27. Do you encounter financial problem?

(a) Yes ☐ (b) No. ☐

28. If yes how has this affected your production?

.....

.....

29. Have you ever secured loans for your business since inception?

Year	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Yes													
No													

30. What is the source of Loan?

(a) Bank Loan ☐ (b) Individuals ☐

(c) Others, specify ☐ .....

31. Do you import any of your inputs?

(a) Yes ☐ (b) No ☐

32. What Factors (s) affect your importation?

.....

.....

33. Labour Availability:

(a) Hired Labour ☐ (b) Family Labour ☐

(c) Co-operatives ☐

34. Do you have any difficulty in providing labour?

(a) Yes ☐ (b) No ☐

35. If yes what are the difficulties?

.....

.....

36. How many workers have you employed in your farm since inception and how much do you pay them monthly?

Year	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
No. of persons													
Amount/person													

37. At what price have you been buying your day old chick?

Year	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Price													

38. How do you market your products?

(a) Through middlemen ☐

(b) Direct supply ☐

(c) Others, specify .....

39. What problems do you encounter in marketing your birds?

(a) Transportation ☐ (b) Storage ☐

(c) Grading ☐ (d) Packing ☐

(e) Others, specify .....

40. Which of these factors affect selling price?

(a) Demand ☐ (b) Season ☐

(c) Cost of supply or purchase ☐

(d) Others, specify .....

41. When do you record the highest sales for the following:

	Jan - Mar	Apr - June	Aug - Oct	Nov - Dec
Broiler				
Layers				
Day old chicks				

42. Has it been like this since 1986 and if no why the difference

.....

.....

43. At what price do you sell your full grown birds since 1986?

Year	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Size													

44. What are the reason(s) behind changes in price?

.....

.....

45. What other market situations affect your operation?

.....

.....

46. Cost and returns in poultry production in 1997.

ITEM	VALUE (NAIRA)
Housing	
Equipment	
Drugs and Vaccines	
Feeding	
Cost of Chicks	
Labour	
Net profit/Loss	

47. Are you aware that the nation is passing through economic recession?

(a) Yes ☐ (b) No ☐

48. If yes, how does it affect your enterprise?

.....

.....

49. Assess the performance of your enterprise since 1986.

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
(a) Excellent													
(b) Very good													
(c) Good													
(d) Fair													
(e) Poor													

50. How are you coping with the nation's economic problem?

51. Does your strategies increase your turnover now?

(a) Yes ☐ (b) No ☐

52. What are the advantages of your survival strategies?

.....

.....

53. What are the problems you encounter with your coping strategies?

.....

.....

54. Do you see any of the following as a survival strategy?

(a) Cost reduction ☐

(b) Liberalization of maize export and import ☐

(c) Diversification ☐

(d) Use of non - conventional feeds ☐

(e) Strengthening of the purchasing power ☐

(f) Use of improved breed ☐

(g) Aggressive marketing ☐

(h) Others, specify .....

55. Do you feel that diversification can improve the viability of your business?

(a) Yes ☐ (b) No ☐

56. Of all the enterprise types which one is more profitable and why?.....

.....

.....

57. Which of the strategies work better towards achieving your enterprise objective in profit maximization and why?

.....

.....

.....

58. Mention the major set backs you have recorded since the economic recession .....

.....

59. Why are some farms collapsing and others surviving?

.....

.....

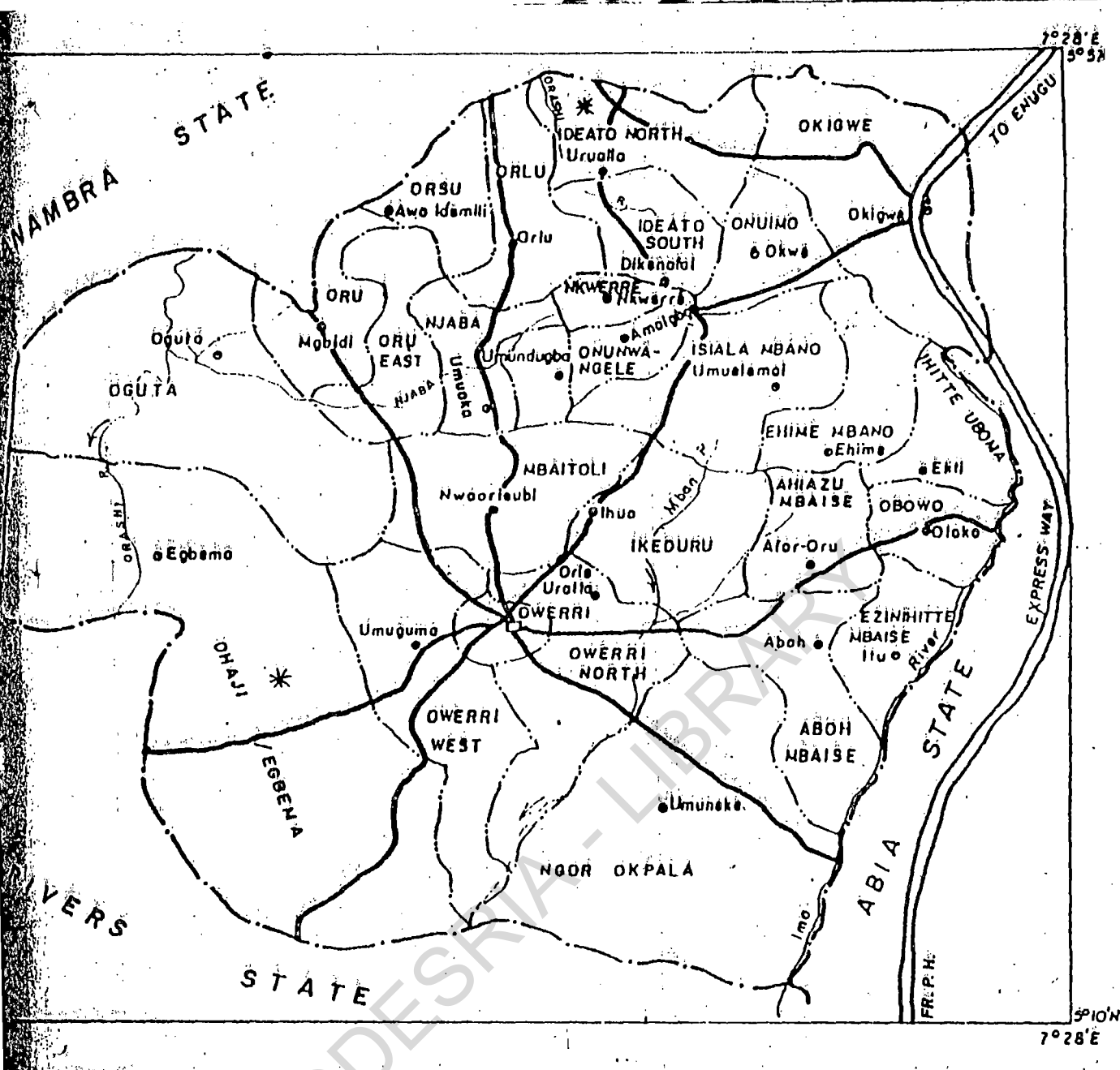
.....

60. What are your suggestions towards improving poultry business in Nigeria?

.....

.....

.....



Scale: 1/500,000

Km 10 0 10 20 30 40 Km

Compiled & Drawn by
Survey H.Qtrs, Owerri
Imo State. February'97

REFERENCE

STATE BOUNDARY
L. G. A. BOUNDARY
MAJOR ROADS
RIVERS & STREAMS Njaba R.

STATE CAPITAL OWERRI
L. G. HEADQUARTERS Afor Oru
EXPRESS ROAD