



**ECONOMIC IMPACT OF POULTRY
PRODUCTION IN KATSINA STATE,
NIGERIA**

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**ECONOMIC IMPACT OF POULTRY
PRODUCTION IN KATSINA STATE,
NIGERIA**

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**Supervised by:
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ABSTRACT

The study investigates the economic impact of poultry production in Nigerian Katsina State based on the total number of 285 poultry farmers in the area in which out of the total number, 100 poultry farmers were selected based on the random sampling technique. The data were analyzed using descriptive statistics such as means, standard deviation and percentages to analyze the socioeconomic characteristics, management practices, and constraints to the poultry production in the study area. The multiple linear regression model was employed to analyze the productivity of poultry production i.e. Economic Impact. The empirical findings based on the regression results indicated that, backyard poultry experience and level of education had a positive coefficient and statistically significance in influencing output. In other hands, costs of labor and feeds had a negative coefficient but significant in explaining output. The R^2 value of 0.678 implied that the regression accounted for 67.8% of the variations in the output, while the F-value (4.57) was significant and therefore, implies that all the predictors considered for the analysis jointly exerted significant influence on the output of the poultry production in the area under study. However, the result of the analyses regarding the challenges facing the backyard poultry owners revealed that out of ten (10) problems identified, inadequate fund (98.0%) was ranked highest as the problem encountered by the sampled respondents. The research recommended that government should establish Agricultural banks with minimum interest rate to help the poultry farmers in stabilizing the price and creating conducive market environment especially during the festive periods.

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CHAPTER ONE

INTRODUCTION

1.1 BACKGROUND OF THE STUDY

Birds are natural creatures reared or hunted for useful purpose, they belonging to a number of bird groups collectively known as poultry. Most of these birds are domesticated and managed in the same principles as domestic fowl. Most of them belong to avian class, example, chicken, duck, guinea fowl, turkey, geese, etc. Animal protein is essential for normal human physical growth and mental development. In regards to this its deficiency exerts tremendous adverse effects in terms of reduced human productivity, due to abnormal development. It can also cause advances in infant mortality, pronounced malnutrition and diseases. This underscores the importance of livestock farming as a means of meeting human nutritional needs, as well as, improving incomes of farmers and their standards of living.

Before the Second World War, Katsina poultry production often raised small flocks, in villages and some parts of towns as well as at some farms. These small flocks supplied eggs and meat for the family and also for sales in the market. In some areas of Katsina, poultry farming is still practiced this way. Since the Second World War, however, the poultry production in Katsina town has become highly popular in the villages; most of the eggs and chickens sold in the markets are now produced in commercial quantity.

Poultry production in Katsina town has two main divisions namely:

- (a) Eggs production division, and
- (b) Meat production division.

Eggs production division is the division that deals with the production of eggs for commercial purposes, to be consumed as stable brooder inculcates and hatched for brooding. Meat division deals with the production of chicken broilers, roasters, turkeys, and ducks for the of meat consumption, purposes either at home or other places within or outside the area in the area.

Going by the increase of population in towns, the demands for food, especially protein, becomes acute. To meet this demand, for animal proteins, the development of animal production, especially in the fast developing and rapidly multiplying areas, poultry production becomes necessary. Poultry production in Katsina town has a bright future. The

production of poultry, is very necessary, to meet the high demand of animal protein, of every common man. Chicken has many advantages over other domestic animals, of which production is costly and highly demanded. It is also being affected by temperature, environmental diseases and lack of food at certain period of time.

Adekanbi, (2000) defines the terms “poultry” as birds that are raised domestically by human being for the purposes of food and other reasons, produced freely under intensive management and control. Those birds include chicks, turkey, duck, guinea fowl, pigeon, ostrich, geese, and others, as a source contribution of meat and egg production to the economy.

Adoan, (1997) stated that, poultry is a range of domesticated birds, such as chickens, ducks, turkeys, guinea fowl, pigeon and geese. Akinsoye, (1976) instead, said that, poultry is the management of domestic birds raised for food and other economic purposes. Agriculture in Nigeria today, is a popular business undertaken by the people. “Famous Agriculture” business magazine (1993), referred to poultry, as the raising of chicken, either for meat or for egg production. Poultry production also refers to poultry farming of birds reared or hunted for useful purposes (Oluyemi, et al, 1979). The number of the bird groups collectively is known as poultry.

Youdewen, (1986) on the other hand analyzed poultry as a general terms for birds of several species such as chickens, fowls, turkeys, ducks, geese, guinea fowl, pea fowl, pigeons, partridges, ostriches, and other domestic birds. Accordingly, poultry production has economic importance that has ever been useful to peoples since time immemorial. Hence, they kept poultry of different sizes and had been the contribution to men. Poultry can be regarded as a source of food for men, because eggs and meats have been recognized as the most balance diet, with vitamins and nutrition that people need. Most of the producing eggs are used in soap industries, and bakeries industries for producing bread for human consumptions, and some are used for vaccines drugs. Similarly, eggs can be used as poultry production output as a resources as well as its’ provides meats which is acceptable all over the world as a food for human consumption and economic growth.

Despite the fact that urban poultry production has become the most rapidly developing enterprises especially in Katsina where the research is carried out. The industry in the area has not attained the expected level of economic impact among participating members. This opinion was supported by Adekanbi, (2000) in which his research work stated that, the following factors that causes low productivity of poultry in Nigeria includes: problems of poor selections of the birds by farmers, which most of the time, may cause low

productivity. Normally production is usually slow due to such problems. It is advisable for farmers to keep male chickens away from the layers stock, and it is the objective of farmers to produce table eggs, which will contribute towards income generating abilities for the farmers' Economic growth.

Another thing we need to consider is the age of the poultry also a factor that needs to be observed. Because the old ones do not lay, often and do not yield good quality meats. Therefore keepings layers, broilers for more than one laying year can bring about low production. We observed that poor feeding and lack of diseases control are among the factors militating against rapid growth of the poultry when also may bring low output. Moreover, the inefficient and unbalanced feed can affect the level of growing ("growth") and laying capacity of the birds. Many poultry diseases, especially those associated with viruses have no cure. Lack of disease control within the poultry industries is capable of bringing about low production. Closely linked to this factor are poor feeder and water troughs resulting in wasted and contamination of feeds. Such feeds help to spread disease like coccidiosis. This contributes to the fall in productivity and leading to high mortality rate.

The problem of poultry production in Katsina is associated with inadequate record keeping among the participating members. Good record is an essential part of modern system of poultry management; therefore after exploring this research work we want the Katsina local community to embrace the challenge for economic impact. Lack of accurate records of materials, cost of production, cost of labor and poultry feeds, may consequently determine the output level (economic impact) on participating members. Another noticeable problem is the problem of selection of the required poultry in terms of their age, sex, shape, and size, in which finally it might determine the good economic impact. In short accurate and up to date records will enhance the participants' capacity building and economic growth.

In summary, we were able to determine how the Nigerian Economy may be affected as a result of poultry farming in the country. The research works also has looked into the problems of poultry production and try to find the possible solution to the problems. The literature reviewed in this research work is related to the stated objectives to achieve both general and specific objectives.

1.1.1 Global Perspective of Poultry Production

The levels of profitability for all the areas of organic poultry production examined are low or nonexistent for small-scale production, but it may reach the reasonable level of income for large-scale production, where poultry production is the main or sole enterprise. Profit of about N20, 000 may boost the business and economic development and personal drawing levels (income being) very marginal. The main reason for positioning across all areas is relatively high, due to human (labor) and cost of capital for small units and gross margins are generally favorable for organic systems of poultry production. In addition to that, costs of day old chicks and pullets, transport, feedstuffs and processing, packing and marketing are likely to be higher for small producers because of the small quantities involved. At the gross margin level, the primary determinants of profit ability of all systems analyzed are total feed costs (reflecting price, feed conversion efficiency and finishing age) and sales value.

An analysis based on current premium prices and feed costs indicates that both organic meat and egg production can achieve better level of gross margins per bird than any of the alternative production systems evaluated. However, the likely increase in feed prices which would result from the European Union (EU) organic livestock proposal could lead to significant negative gross margins unless prices received by producers increase correspondingly.

This study examines the global overview of the development of the poultry sector and the role of small-scale, family-based poultry production in developing countries (country). Major initiatives undertaken to develop poultry as (economic activities) for rural development and their rationale are presented. The constraints facing the future of small-scale poultry production are stated with a particular focus on poultry diseases given the current outbreak of highly pathogenic avian influenza in Asia. Geographical hot spots are identified where intervention is urgently required and where small-scale poultry (farming) has the potential to give a substantial impact. Finally, there is the need for more long- term and wider perspectives in the policies and strategies guiding the development of the poultry sector (Otte, 2000).

Dolberg, et al. (2003) stated that the evolution in the work of government of Bangladesh into the poultry production in the area by bringing some models which have been very effective in poultry farming?, involving poor people on economic development on poverty reduction through poultry production program. The idea was to replicate in large

scale commercial poultry production with small-scale service production and consumer units was being participated ones (Mack, et al 2005).

Poultry production has been regarded as the traditional component of small and large farms that can contribute large quarter?. To the developing world economy. In Africa, it was estimated that 80% of the poultry production was found in these production system that contribute up to 90% of the chickens reared and they supply the bulk of the national requirements of eggs and meat for the urban populations (Moreki, 2006).

1.1.2 Structure of the Nigerian Economy

Nigeria is a middle-income mixed market economy with expanded financial services, communications and entertainment sectors. It is ranked 30th (40th in 2005, 52nd in 2000) in the world in terms of GDP (Pcpp) as of 2012 and 2nd largest economy within Africa (after South Africa). On the track to be one of the 20th largest economies in the world by 2020, poultry farmers have to Emerging through current performing manufacturing sector, Nigeria is the third largest country in the continent, and produces a large population that need goods and services in West African region.

Previously hindered by years of mismanagement of economic reforms of the past decade have put Nigeria back on track by not use the available resources in a good way towards achieving the full economic potential. Nigerian GDP at purchasing power parity (PPP) has almost trebled from 8170 billion naira in 2000 to 8451 billion naira in 2012, although the estimated size of the in formal sector (which is not including in official figures) put the actual number close to 8630 billion naira corresponding. The GDP doubled from 81,400 per person in (2000) to an estimated 12,800 per person in 2012 (again with the inclusion of the informal sector, it is estimated that the GDP and per capita incomes round to 83.900 per person). While, the country population increased from 120 million in 2000 to 160 million in 2010. These figures might be revised upwards by as much as 40% when the complete amount were reverse the economy in 2013 (Economy of Nigeria Wikipedia, 2013).

1.1.3 History of Agriculture in Nigeria

The agricultural sector has suffered setbacks for many years, and this has occurred due to the inconsistent and poorly conceived government policies and lack of basic infrastructures. Still, the sector accounts for over 26.8% of GDP and provides two thirds of employment opportunity. But Nigeria is no longer a major exporter of cocoa, groundnuts,

(peanuts) rubber and palm oil. Cocoa production mostly from absolute varieties and average trees is stagnant at around 180,000 tons annually where 25 years ago it was 300,000 tons. An even more dramatic decline in groundnut and palm oil production has also taken place.

Nigeria was once the biggest poultry producer in but Africa, corporate poultry output in the country has fallen from 40 million birds annually, to 18 million. Import constrains limit the availability of many agricultural and food processing inputs for poultry and other sectors. Fishery, most critical for the country's future are poorly managed. Also, Nigeria's land tenure system does not encourage long-term investment in technology or modern production method and does not inspire the availability for rural credit, (Economy of Nigeria, WIKIPEDIA)

1.1.4 Poultry Production in Nigeria

Before the outbreak of HPAH in 2006, the poultry population in Nigeria was estimated at around 150 million, with a large majority of local chicken and a minority of exotic breeds. Maps. Annexes 6 and 7 shows the available data concerning the Nigerian poultry sector as presented in graphics 2, 3, 4, 5, and 6.

For analytical purpose friends of Animals (FOA) has divide poultry production into four sectors: (Who are friends of animal? Give reference)

Sectors 1: Industrial Integrated System

Sectors 2: Commercial Production System

Sectors 3: Small-scale Commercial Production System

Sectors 4: Village or Backyard System. Nevertheless, the parameters that differentiate the four sectors which vary from country to country.

At this point, it is necessary to clarify interpretation of the term "backyard" because it may generate confusion in the FAO scheme. Backyard indicates a low level Input and Output production sector, comparable to the village or scavenging system. In Nigeria, however, backyard is interpreted literally as "at the back of the yard" and is often used to identify the lowest level sector, characterized by improved flock management and at the same time with a primarily commercial objective. The researchers also observed the so-called backyard with 1000 layers and (500) broilers as having more profit compare them with less of that. In practice therefore, it appears to be more of the location than the management system that differ "farm" and "backyard" systems in Nigeria.

Drawing on the opinion of representatives of the Nigerian veterinary services, (previous studies and personal observations) the four sectors in Nigeria may be roughly divided in terms of scale of production as follows:

- Sector 1: Commercial (more than 10,000 birds)
- Sector 2: Medium scale commercial (2500 – 10,000 birds)
- Sector 3a: Small-scale commercial (500 – 2500 birds)
- Sector 3b: Backyard (a few 1500 birds)
- Sector 4: Rural (a few 200 birds or more)

But this is just theoretical, because the management practices of sectors 2 and 3, and part of sector 1, are the same poultry production differs more in relation to the environment than the size. The northern part of the country (Katsina) for example, marked by drier conditions and notables fluctuations of temperature between day and night; period but flocks size are in better protected from the external climatic attack than in the southern part.

The above drawn schedule describes the nature of poultry production with giving certain basic criteria. The nature and aims of production, the species of the birds involved, flock management, poultry marketing and commercialization, the level of investment in bio-security. Similarly, the present study divides Nigerian poultry production into three sectors. (Which schedule?) (What is bio-security?)

- i. Industrial sectors are the sector represented by 10 highly integrated industries, most of them with foreign French sign or entrepreneur in Europe. They are the foundation of the entire commercial production system, hold parent and grandparent stocks, and produce the day old chickens they have some level of integration with, breeding rearing? And commercial activities and automation (feed milks, incubators, cooling facilities) and produce all or part of their feed requirements. This report does not deal with this sector.
- ii. Commercial sector (part of sector and all farms in sectors 2 and 3) thus sector includes backyard farms.
- iii. Traditional sector. This sector includes all sorts of scavenging birds, in both rural and urban areas in most of the town in the country. The sector is variously called traditional village local rural or free range. (An assessment of Nigeria poultry market chain, (2008) whose work? Give reference.

Adekanbi, (2000) defines the term “poultry” as a bird that are raised domestically by human being for the purposes of getting food and other reasons produced freely under his

management. Those birds include chicks, turkey, duck, guinea fowl, pigeon, ostrich, geese, and others. There are principle (principally?) raised for eggs production and meat.

Adoan, (1997) states the mean of poultry as to a range of domesticated birds, such as chickens, ducks, turkeys, guinea fowl, pigeon and geese. While, Akinsoye, (1976) said poultry is the management of domestic birds raised for food and other economic purposes. Agriculture today in Nigeria is the famous business of the peoples, Famous Agriculture Business Magazine (1993), examined poultry as the raising of chicken either broilers (for meat production) or layers (for eggs production) Agricultural business famous magazine.

Oluyemi, et al. (1979), refers poultry farming as any birds reared or hunted for a useful purpose, the number of the birds group collectively is known as poultry.

Youdewen, (1986), analyzed poultry as a general term for birds of several species such as chickens, fowls, turkeys, ducks, geese, guinea fowl, pea fowl, pigeons, partridges, ostriches, pea saints, and other homes birds. Poultry production has extensive economic importance and has ever been dear to people, from time immemorial, hence they kept poultry of different sizes and make the stated contribution to man, poultry products will be regarded as the source of food for the human being, because they produce eggs and meats that are recognized as the most balance diet, vitamins and nutritious of all animal products that peoples need or wants.

Despite the fact that urban poultry production has become the most rapidly developing enterprises especially in Katsina, where I undertake as my case study area, and the industry in the area has not attained the expected level. It is against the background, that Adekanbi, (2000), states the following factors that cause low productivity of poultry in the area. One of the problems facing the sectors, is poor selections of the birds by the farmers sometimes may cause low productivity. Production is usually low because of the above mention problems, it is advisable for farmers to keep males chickens away from the layers stock,

Another thing we need to consider is the age of the birds, which is also a factor that has been observed by the poultry farmers and their consultant; the Old ones do not lay eggs often and do not yield good quality meats. Therefore, keepings layer, or broilers for more than one laying year, can bring about low production of poultry in the area. Observers state that on how a poor feeding and lack of diseases control are facing the productivity growth of the sector. Inefficient and unbalanced feed can affect the level of growing and egg laying capacity of the birds. Many poultry diseases, especially those associated with viruses have no cure. Lack of disease control within the poultry industries is capable of bringing about

low production and closely allied to this factor are poor feeder and water troughs, result is wasted and contamination of feeds. Such feed also helps to spread disease like coccidiosis, This contributes to lowering of productivity and bringing higher mortality rate.

In summary, we are able to state how the Nigerian economy is and how the sector breaks through on what the poultry production is contributing towards the life and economy of the people living in the area. We also state on how the sector is facing problem, and what are be the problem of the sector.

1.2 Research Problem

The low level of literacy of the chicken production farmers in Nigeria has resulted in poor Understanding of the required amount of Inputs to bring about the optimum output and subsequently, the quality and quantity of output that will bring economic impact directly to the general well being of the farmers.

1.3. The problem Statement

It was difficult for the government to market the idea of the best poultry farming method to farmers. They are illiterate to fully comprehend the impact of poultry farming on the Economy of Nigeria.

However, from the above problem background, the present research intends to elaborate some of the current issues in the field of poultry production in Katsina. These issues include the problem within the background of the respondent's farmers, which may occur due to the low level of literacy among the participants. There is the problem of knowing the required level of Inputs that can determine the economic Impact among the participating members. There is the problem of not knowing the required number of poultry that can easily be managed and effectively taken care of, for the quality and quantitative output towards direct economic impact to the general wellbeing of the farmers. These are consequently what attribute to poor economic growth.

In addition to that, among other problems include the problem of marketing, poor electricity, good road networks, fencing and ventilating cage and Extension worker.

The discovery of oil in the late 1960's, and its subsequent boom in the early 1970's, a shift of emphasis from agriculture- to oil. This had far reaching implication for the food economic development of the country.

(The discovery of oil in the late 1960's and its subsequent boom in the early 1970's resulted in a shift of emphasis from agriculture to oil. This had far reaching implications for the food industry to sustain the economic development of the country).

In the last decade Nigeria witnessed a progressive decline in its domestic food supply, both in calories and the amount of animal protein. As a result, the federal government of Nigeria resorted to massive importation of food including poultry products (Ogunbanmeru, 1986).

Some of the problems the present research intends to examine are as follows:

- a. **Marketing problem:** A modern system of poultry production cannot thrive without a well-organized marketing, Katsina state poultry farmers has to make adequate arrangement for the disposal of its finished products in the market. The producers may have to spend some money to advertise their eggs and birds and make personal contacts with those they think are likely to purchase them. They should reach an arrangement with individuals on the price of their products and their quantity they will be able to supply regularly.
- b. **Lack of proper sanitation:** - It is best to adopt management practices that will decrease problem of pest and disease, that are most prevalent. In duck, are Mareks diseases, new castle diseases, Gambaro, fowl pox and fungal diseases Coccidiosis cannot be control throughout the period?
- c. **Housing problem:** Housing is one of the major problems facing poultry production in Katsina Local Government Area. The lack of housing exposes the poultry to adverse weather, rain, winds, sun and cold weather, including predator's like hawks, cats and even human beings (thieves).
- d. **Temperature:** - The best temperature in Katsina poultry production depends on local weather condition. Excessive temperature in Katsina local government area will affect poultry production among others.

Some of the issues in this research are practical issues, such as lack of participation by some community members, low level of input, which consequently led to low level of output (economic impact). While some issues are theoretical like lack of research, similar to this conducted in the area, as such no available literature to be found. But notwithstanding, the researcher is able to find some relevant text that can serve as relevant materials for guide and making the research work successful and completion of the work within the short period of time.

It is a known fact that poultry production can enable members to produce more meats and eggs, which may translates into better diets and under good market. Similarly, it

paves ways for Farmers to earn more income (economic impacts) for the economic growth and general wellbeing of the members.

Shumba, et al (1988), states that, there is limited reliable information on performance constraints and opportunities of village chickens in the area; this makes it difficult to design and implement village chicken based development programmes that benefit rural livelihoods. Production constraints is another problems of reproductive wastage and mortality of village chicken Flock productivity is mainly determined by egg production hatchability, Chicks survivability and growth rates. (Tadelle, et al 2003).

Pedersen, (2002) any management factors that would have a positive impact on eggs production and chick survival can be used to increase the output from village chicken flocks. The flocks' size is a function of egg production per hen and the proportion of mature laying hens in a flock (Katalyi. 1998). Various studies done in the smallholder communal areas showed average flock size of between 15 and 20 chickens (Pedersen 2002), challenge of improving productivity of their flock in terms of quantity of food (meat) and incomes generated from their sales, another one is particularly great in western part of the area where indigenous chicken production is characterized by low levels of inputs and outputs with low productivity levels, which limits their potential for commercialization (Okitoi, et al. 2007). The potential of indigenous chickens in the region is not fully exploited when compared to the hybrid industrial chicken, despite the growing preference of them with their meat and eggs they produced even people are familiar with their product because the consumers are familiar with the taste, safety and nutritious qualities of it Still the number of people that are consuming such commodity is Sperm on the increase towards traditional produced animal products Upton (2000).

1.4 Research Questions

In an attempt to conduct a study on the economic Impact on poultry production in Nigeria, Katsina State, the study needs to critically examine these research questions for clarity and originating of the research, analysis and interpretation of the central focus of the research work were conducted with the help of (STATA) software. The traceable questions, this research work plan to identify and seek for their solutions include

- What are the backgrounds of the respondents (farmer?)?
- What are the levels of poultry production, inputs, outputs, and economic impact among the participating members?

- What are the relationship between poultry production, inputs, outputs, and economic Impact?

1.5 Objectives of the Study

The general objectives of the present research are to evaluate and analyze the Economic Impact of poultry production in Nigeria Katsina State. Specific objectives are as follows:

- To identify the background of the respondents
- To determine the levels of poultry production, inputs and output (economic Impact)
- To determine the relationship between poultry production, inputs and outputs (economic Impact)

1.6 Significance of the Study

The methodology of successful carrying out of the research is through review of the main Economic Variables in production like Input, Output, and finally the End Results (economic Impact).

Factors of production are also needed to in consider and making use of them one after the other like land (farm size), labour, capital entrepreneur and market. The research works also use questionnaire method in collecting the first hand Information from the potential respondents.

Moreover, the contribution of this research work include

- The study is intended to focus on the Importance of poultry production in Katsina.
- The present research is trying to see how possible the poultry farmers can improve their capital and Economic wellbeing.
- The research work also intends to investigate the problems of poverty in Katsina local government and proper solution through massive investment in poultry farming.
- The research will also try to see the possibility of improving and maximizing production, through government and nongovernmental poultry farm empowerment.
- The research is also intended to investigate social capital among the participating members of poultry producers.

1.7. Methodology

This study is based on a quantitative method using questionnaire approach to collect the data to be use for analysis. Secondary data and views from the expert have been analysed. This sets the direction for an effective questionnaire design, which was used as a pilot taste,

before distribution, we use random sampling techniques by sampling the poultry in the study area.

The target population, are both small scale and large scales poultry farmers, because some of the farmers practice the two forms of farming system. The target population are poultry farmers who have the birds in their farm and they could probably form the largest group that generate more outputs, are also targeted. There are two types of poultry farmers, the egg producers and meat producers. In this study both the two types of poultry farmers are used for the sampling technique, due to the fact that most of the poultry farmers under study area combined the two in their poultry yard.

Besides the primary data which were collected through survey, secondary data (such as articles from books, journals, magazines, and newspaper) about poultry farming and management as well as relevant literatures and survey-based data are consulted to meet the desired objectives of this research study.

Last but not the least, a computer program package of STATA, version 11 is used to facilitate the statistical analysis and result tabulation of the data collected. The analysis includes descriptive statistics, factor analysis and multiple regressions.

The main aim of this study is to assess the Economic Impact of poultry production in Nigerian, Katsina state. Research questions are formulated and developed in this research

1.8 Thesis Organization

This research is organized in five chapters which consist of:

Chapter One – Introduction, This chapter presents the background of the research, research problems, research questions, research objectives, as well as significance of the study.

Chapter Two - Literature Review, This chapter presents the review of the related literature of the research by discussing the measure aspect of poultry production, its problems and the determinants.

Chapter Three – Methodology In this chapter the research methods used are discussed. This includes the theoretical framework of the research, model specification, sampling design and method of data collection.

Chapter Four – Results and Discussion, This chapter presents and analyses the data, by first presenting descriptive statistics and regression analysis with the aid of STATA 11 software.

Chapter Five – Summary, Conclusion and Recommendations, This chapter summarizes the major findings of the research, conclusion as well as recommendations based on the findings of the research.

1.9.0 Scope and limitation of the Study

The scope of the study is to explore the economic impact of poultry production in Nigeria, Katsina State, and centered to only participating members in the field of poultry production. A total of 570 respondents were surveyed, Out of this figure, the researcher arrived at 100 respondents as a number of the respondent to be used as the sample size according Kreijcie and Morgan (1977) table of sample size Due to the reason of illiteracy and lack of confidence in answering question from the respondent the researcher decided to use 100 sample size instead of the exactly numbers .

CHAPTER TWO

LITERATURE REVIEW

2.1 CONCEPTUAL DEFINITIONS

The concept of poultry production and input as well as output is addressed in this research work. This may give the reader a clue to have a clear understanding on the topic under discussion.

Adekanbi, (2000) defines the term “poultry” as a bird that are raised domestically by human being for the purposes of food and other reasons produced freely under his management. Those birds include chicks, turkey, duck, guinea fowl, pigeon, ostrich, geese, and others. In order to raise the production of egg production and meat in a society.

Oluyemi, eta al (1979) said, a poultry production refers to poultry farming as any birds reared or hunted for a useful purpose, the number of the birds group collectively is known as poultry.

Youdewen, (1986) analyze poultry as a general term for birds of several species such as chickens, fowls, Turkeys, ducks, geese, guinea fowl, Pea fowl, Pigeons, partridges, ostriches, and other homes birds. Poultry production have extensive economic importance and has ever been dear to peoples from time immemorial, hence they kept poultry of different sizes and meet the stated contribution to man. Poultry production can be regarded as sources of food to man, because it produces eggs and meats that we recognized as the most balance diet, vitamins and nutritious that peoples need or wants. Most of the producing eggs are used in soap and bakery industries for producing bread for human consumptions and some are used for vaccines drugs. Similarly, egg can be used as poultry production output as a resources as well as its’ provides meats which is acceptable all over the world as a food for human consumption and economic growth.

Despite the fact that urban poultry production has become the most rapidly developing enterprises, especially in Katsina. The industry in the area has not attained the expected level of economic impact among the participating members. This opinion was supported by Adekanbi, (2000) in his research states that, the following factors that causes low productivity of poultry in Nigeria includes: problems of poor selections of the birds by the farmers, which must of the time, may cause low productivity, and effect the level of production due to such problems,

Another thing we need to consider is the age of the poultry, because the old ones do not lay eggs or do not yield good quality meats. Therefore keeping layers, broilers for more than one laying year can bring about low production.

Moreover it has been observed that poor feeding and lack of disease control is among the factors militating rapid growth of the poultry that may bring low economic yield, and the inefficient and unbalanced feed can affect the level of growing and laying capacity of the birds.

Many poultry diseases, especially those associated with viruses have no cure, and also lack of disease control within the poultry industries is capable of bringing about low production

The problem of poultry production in Katsina is associated with inadequate record keeping among the poultry farmers. Good record is an essential part of modern system of poultry management. Therefore, after exploring the present research in Katsina local community to embrace the challenge for economic impact. Lack of accurate records of materials, cost of production, cost of labor and poultry feeds, will consequently determine the output (economic impact) on the participating members. Another noticeable problem is the problem of selection of the required poultry, in terms of their age, sex, shape, and size, in which finally it might determine the good results as economic impact. In short, accurate and up to date records will enhance the participant capacity building and economic growth.

In summary the researcher is able to state how the Nigerian Economy may be affected as a result of poultry farming in the country. The present researches also look in to the problems of poultry production and try to find the possible solution to the problems. The literature reviewed in this research work is related to the stated objectives to achieve both general and specific object

2.1.1 Global Perspective of Poultry Production

Dave Harlan (2007) examine The levels of profitability for all the areas of organic poultry production examined are low or nonexistent for small-scale production, and only reach reasonable levels of income for large scale production, where poultry production is the main or sale enterprise. With a profit of less than N20, 000 it will make business development and personal drawing levels very marginal for most businesses. The main reason for the position, across all areas, is relatively high cost of labour and cost of capital for small units, as gross margins are generally favorable for organic systems. In addition the costs of day old chicks and pullets, transport, feedstuffs and processing, packing and marketing are likely to be higher for small producers because of the small quantities

involved. At the gross margin level, the primary determinants of profit ability of all systems analyzed are total feed costs (reflecting price, feed conversion efficiency and finishing age?) and sales value. (www.globalmeatnews.com)

An analysis based on current premium prices and feed costs indicates that both organic meat and egg production can achieve better level of gross margins per bird than any of the alternative production systems evaluated. However, the likely increases in feed prices, which would result from stricter Europe Union (European Union) (EU) organic livestock proposal could lead to significant negative gross margins unless prices received by producers increase correspondingly.

He examines the global overview of the development of the poultry sector and the role of small-scale, family based poultry production in developing countries. Major initiatives undertaken to develop poultry as a tool for rural development and their rationales are presented. The constraints facing the future of small-scale poultry production are stated, with a particular focus on poultry disease given the current outbreak of highly pathogenic avian Influenza in Asia. Geographical hot spots are identified where intervention are urgently required and where small-scale poultry has the potential to make a substantial impact later Findlay stresses the need for more long term and wider perspectives in the policies and strategies guiding the development of the poultry sector (Otte, 2000).

Dolberg, et al. (2003) stated that the innovations in the work that the government of Bangladesh bring into the poultry production system is by bringing some model which had been very effective in developing the entire poultry farming that involve both the poor people in economy and others in order to develop and poverty reduce through poultry production program. The idea was to replicate large scale commercial poultry production with small-scale service production and consumer units was being participated ones (Mack, et al 2005).

Poultry production has been regarded as the traditional component of small and large farms that can contribute large quarter to the development of world economy. In Africa, it is estimated that (80%) of the poultry production is found on this production system that contributes up to (90%) of the chickens reared and they supply the bulk of the national requirements or eggs and meat for the urban populations (Moreki, 2006).

2.1.2 Structure of the Nigerian Economy

Nigeria, is a middle income mixed economy that its market is expanded, its financial service, communications and entertainment sectors; it is ranked 30th (40th in 2005, 52nd in (2000)) in the world in terms of GDP (PPY) as of (2012), and 2nd largest economy within

Africa, (Behind South Africa). On track to be one of the 20 largest economies in the world by (2020),

Poultry farming have to contribute its quarter. Share The re-emergent through currently under performing, manufacturing sector is the third largest on the continent, and produces a large amount to their population amount.

Previously hindered by years of mismanagement economic reforms of the past decades have put Nigeria back on track towards achieving the full economic potential and also Nigeria gross domestic product (GDP) at purchasing power parity (PPY) has almost trebled from 8,170 billion naira in 2000 to 8,451 billion naira in 2012, although estimates of the size of the informal sector put the actual number close to 8,630 billion naira correspondingly. The GDP doubled from 81,400 naira per person in 2000 to an estimated 12,800 naira per person in 2012. Again, with the inclusion of the informal sector, it is estimated that the GDP per capita hovers around 83.900 per person while the population will increase from 120 million in 2000 to 160 million in 2010. These figures might be revised upwards by as much as 40%, when the complete the rebasing of the economy later in (2013) (Economy of Nigeria, Wikipedia, 2013).

2.1.3 History of Agriculture in Nigeria

Agriculture has suffered from years of mismanagement, inconsistency and poorly conceived government policies and the lack of basic infrastructures. Still, the sector accounts for over 26.8% of GDP and generating two thirds of employment. Nigeria is no longer a major exporter of cocoa, groundnuts (peanuts) rubber and palm oil. Cocoa production mostly from absolute varieties and average trees is stagnant at around 180,000 tons annually whereas 25 years ago it was 300,000 tons. There has been an even more dramatic decline in groundnut and palm oil production.

Once the biggest poultry producer in Africa, corporate poultry output has been falling from 40 million to 18 million birds annually. Import constrains limit the availability of many Agricultural and food processing inputs for poultry and other sectors. Fisheries are poorly managed, most critical for the country's future. Nigeria's land tenure system does not encourage long- term investment in technology or modern production method and does not inspire the availability for rural credit (Economy of Nigeria, WIKIPEDIA).

2.1.4 Poultry Production in Nigeria

In Nigeria before the outbreak of HPAH in 2006, the poultry population was estimated at around 150 million, with a large majority of local chicken and minority of exotic breeds' maps. Annexes 6 and 7 report the available data concerning the Nigerian poultry sector as graphically presented in figure 2, 3, 4, 5, and 6.

For analytical purposes friends of Animals (FOA) has divide poultry production into four sectors:

Sectors 1: Industrial Integrated system,

Sectors 2: Commercial Production System,

Sectors 3: Small-scale Commercial Production System, and

Sectors 4: Village or backyard System

Nevertheless, the parameters that differentiate the four sectors vary from country to country.

At this point, it is necessary to clarify interpretation of the term “backyard” because it may generate confusion. In the FAO scheme, backyard production is represented by a low level of Input and Output production sector, comparable to the village or scavenging system. In Nigeria, however, backyard production is interpreted internally as “at the back of the yard” and is often used to identify the lowest level sector 3, characterized by improved flock management and with a primarily commercial objective. At the same time, it is also observed that the so-called backyard with 1000 layers and 500 broilers, in practice. Therefore, it appears to be more of the location instead of the management system that indicates (the difference between) “farm” and “backyard” systems.

Drawing on the opinion of representatives of the Nigerian veterinary services, previous studies, the four sectors in Nigeria may be roughly divided as follows in terms of scale of production.

Sector 1: Commercial (more than 10,000 birds)

Sector 2: Medium scale commercial (2500 – 10,000 birds)

Sector 3a: Small-scale commercial (500 – 2500 birds)

Sector 3b: Backyard (a few as 1500 birds)

Sector 4: Rural (a few as 200 birds or more)

But this is just theoretical because the management practices of sectors 2 and 3, and part of sector 1 are the same, but poultry production differs more in relation to the environment than size. In the northern part of the country (Katsina) for example, the system is marked by driver conditions and notable fluctuations in temperature between day and

night, flocks are better protected from the external climate. The south production also differs in relation to schedules.

He describes the nature of poultry production by giving certain basic criteria that must be taken into consideration. By The nature and aims of production, the species of the birds involved, flock management, poultry marketing and commercialization, and the level of investment in bio-security, this study divides Nigerian poultry production into three sectors.

- i. Industrial sectors are the sector represented by 10 highly integrated industries, most of them with foreign French sing or entrepreneur in Europe. They are the foundation of the entire commercial production system, hold parent and grandparent stocks, and produce the day old chickens (DOCS), they have some level of integration with, breeding rearing and commercial activities and machine automation (feed milks, incubators, cooling facilities) and produce all or part of their feed requirements. This report does not deal with this sector.
- ii. Commercial sector (part of sector and all farms in sectors 2 and 3) which includes the so called backyard farms.
- iii. Traditional sector. This sector includes scavenging birds in both rural and urban areas in most of the towns in the country. The sector is variously called traditional, village, local, rural or free range.

Adekanbi, (2000) defines the term “poultry” as a bird that are raised domestically by human being for the purposes of food and other reasons, produced freely under own management. Those birds include chicks, turkey, duck, guinea fowl, pigeon, ostrich, geese, and others.

Adoan, (1997) states that, poultry refers to a range of domesticated birds, such as chickens, ducks, turkeys, guinea fowl, pigeon and geese while, Akinsoye, (1976) said poultry is the management of domestic birds raised for food and other economics purposes. Agriculture today in Nigeria is the famous business of the peoples. In famous Agriculture business magazine (1993), examined poultry as the raising of chicken, either broilers (for meat production) or a layer (for eggs production). Oluyemi, et al. (1979) refer to poultry farming as any birds reared or hunted for a useful purpose, the number of the birds group collectively is known as poultry.

Despite the fact that urban poultry production has become the most rapidly developing enterprises especially in Katsina, the industry in the area has not attained the expected level. It is against this background that Adekanbi, (2000) states the following

factors that cause productivity of poultry in the area. One of the problems facing the sectors is poor selections of the birds by the farmers this may sometimes cause low productivity normally production is usually low because of the problems stated above. It is advisable for farmers to keep males chickens away from the layers stock; it is objective of the farmers to stabilize egg production which will contribute towards the income generating abilities of the farmers.

Another thing we need to consider is the age, which is also a factor, which has been observed by the consultant that old ones do not lay eggs often and do not yield good quality meats. Therefore keepings layer, broilers for more than one laying year can bring about low production of poultry in the area. Observer's states that poor feeding and lack of diseases control are facing the growth productivity of the sector that brought inefficiency and unbalanced feed can affect the level of growing and laying capacity of the birds. Many poultry diseases, especially those associated with viruses, have no cure, lack of disease control within the poultry industries is capable of bringing about low production closely allied to this factor are poor feeder and water troughs, these result in cast age and contamination of feeds. Such feed help to spread disease like coccidiosis, which contribute to lowering of productivity and bring more mortality rate to the higher level.

In summary we are able to state how the Nigerian economy is and how the sectors is a breaks through to what the poultry production is contributing towards the life and economy of the people living in the area. The researcher also state on how the sectors is having problem, and what will be problem of the sector, the literature are review on how the general objective can be improved and the issue of specific objective is been solve by determining the level of output and those the poultry production.

2.2 Poultry Production the main domain

The term poultry refers to all species of domestic birds, which include chicken, duck, turkey, guinea fowl, pigeon and geese, these birds are kept by farmers to serve different purposes. Poultry are kept by farmers to serve different purposes. Poultry are raised mainly for meat and eggs production. Other poultry products are faces use as manure, manure, feathers etc. poultry has been known to contribute about (10%) of the total national meat production and experts have discovered that poultry production among other livestock is the fastest means of reducing protein deficiency in Nigeria. Also, it provides a flexible financial reserve for the rural population. Scot (1999), explained that proper management

and feeding are necessary for efficient production of poultry products, like eggs and meat at low cost in all part of the world.

Poultry production like most farm animals needs constant care for seven days a week, if they are to do well and perform their function of creating employment opportunity, provision of cash income and as a means of animal protein supply for consumption (Benabdeljelie et al, 2005). Intensive poultry production is based on the special poultry breeds and constitutes almost about 30% of the chicken in Africa. In intensive management system, producers aim at using recommended practices such as breed of choice, appropriate housing, feeding, and health and disease control. (Katalyi, 1998), the gap between the present research and that of past is the is not mentioning anything concerning the Economic Impact to of poultry, but this research to discuss how this issues. The systems involved in intensive poultry production include; slated floor, deep litter and battery cage systems.

- a) **Slated floor system:** Here, the birds are stocked at a rate of 0.09 square meters per bird and little labour is needed to take care of them. (Sainsbury, 1993). The floor is made of wire mesh and is raised to a height of 1 meter in order to protect them from harm materials. (Williamson et al 1984).
- a) **Deep Litter System:** Most farmers have adopted the deep litter system; however its effectiveness is hindered by poor house construction and spillage of water. Coffee husk saw dust and wood shavings are used as litter. The success of deep litter system is dependent on decomposition of litter by bacteria (Sainabury, 1993). Litter keeps birds clean and comfortable and absorbs moisture from droppings (Ensimiger, 1993).
- b) **Battery cage system:** This is the most efficient system because egg production and feed conversion efficiency are high, but the disadvantages of this system are; it is costly to install, many eggs get cracks and poultry are highly predisposed to vitamins and insects (William, et al. 1984). The poultry house unit is constructed and fitted with battery cages that may be communal or individual, faecal matter collects on faecal trays underneath the battery cages that are cleaned manually.
 - i. **Ventilation and humidity:** The main objective of efficient ventilation is to ensure an adequate supply of fresh air to the birds, and to help in remove unwanted gases and excess moisture. Poultry houses may be ventilated naturally or mechanically

Natural ventilation is commonly used in Africa and depends on the difference in temperature between air inside the poultry house and that of outside. If the air outside is cooler than that inside, warm air inside the house is drawn out and is replaced by cooler air. The open sidewalls act as inlets, ridge ventilators or openings on the end walls near ridges act as outlets. Air velocity is of importance in natural ventilation because it affects the rate of change of air. Continuous ridge ventilators are desirable for long buildings but for small buildings two outlet ventilators near the roof on each side of the wall are enough. Relative humidity of 60%-80% is desired in the house for optimum production (Pedersen, 2002).

Ensminger, (1992) recommends relative humidity of 60%-70% for layer houses as high humidity reduces evaporation and increases survival of pathogens.

- ii. **Lighting:** Egg production is stimulated by increase in day length. Reduction in day length leads to cessation of egg production and birds moult. Under natural light conditions, day length varies with the time of the year and latitude. At equinox (23rd March and 22nd September), the days and nights are equal in length. At the equator, day length is a little over 12 hours. Open sided houses are a norm in the tropics and therefore supplementing light is normal. In humid areas, where there is little change in day length throughout the year, (2-3) hours of artificial lighting are recommended for laying birds (Smith, 1993).

If light intensity is unevenly distributed in the house, with bright and dark areas, birds tend to concentrate in areas with light and this tends to cause development of diseases and respiratory diseases (Sainabury, 1993). Longer days stimulate egg production and encourage hens to consume more feed in their feeding. In broilers, too much light may increase their activities and therefore reduce the efficiency of feed utilization (Smith, 1993).

- iii. **Temperature:** Adequate housing must provide the flock with optimum air quality and warm conditions so that performance may be optimized. Poultry house insulation is a requisite for open sided and environmentally controlled houses. Most insulation is confined to the roof where greatest heat is lost during cold weather conditions and also when sun rises.

Brooding temperature is 35-37.7 degrees Celsius in the first week of life. This is reduced by 3 degrees each week as birds grow. Huddling of chicks together around the heat source indicates that the temperature is too low. Chicks are widely spread out if temperature is too high but those that are contented are evenly spread over

the brooding area. Adult hen produce eggs maximally with optimum temperature close to 24 degrees (Austic, et al. 1990) but in intensively managed birds, optimum temperature should be 21 degrees (Pedersen, 2002).

Oba, (2000) recommends a temperature 75 for broilers. Increase in ambient temperature reduces appetite, water intake increases, egg weight and egg productivity reduces. It also results in laying thin shelled egg.

Smith, (1993) and Pattison, (1993), Temperature below the optimum level depresses hatchability, feed conversion efficiency and egg weight.

Chicken spacing: Chicken spacing is important in the poultry house, to avoid overcrowding, since this facilitates diseases and transmissions, Stocking depends on the type of chicken Management system, age and size of chicken. The floor space requirement of broilers is 0.3 sq. feet from 0-4 weeks of age and 0.75 sq. feet from 4-8 weeks of age while layers need 0.3 sq. feet of space from 0-4 weeks, 0.6 sq. feet from 4-8 weeks, 1.25 sq. feet from 9-16 weeks and 1.5 sq. feet for over 16weeks of age (Ensminger, 1992).

Housing floor requirements from free range poultry are 3sq feet per bird. Indigenous birds have a small body size and their stocking density is 5 birds per sq. meter (Portsmouth, 1989) or 15kg live weight per sq. meter (Ensminger, 1992).

In the brooding period, 7 meters of hover space is allowed per 1000 chicks and feeder space of 2.5cm per chick in the first 4 weeks, 5cm per chick in the second month and 7 cm in the third month. Water space of 2.5 cm is allowed per chick in the first 2 weeks of their life and 5cm in the remaining period.

- iv. **Feeding and Nutrition:** Poultry feeds are referred to as complete feeds and essentials vitamins because they contain proteins, energy, vitamins, minerals and other nutrients necessary for proper growth, egg production and health of birds. Carbohydrates and fats are primary sources of energy needed to maintain body temperature, movement of the body and for chemical reactions involved in synthesis of body tissues and elimination of wastes (Austic, et al. 1990).

The conventional foodstuffs materials used in feed formulation are maize, sorghum, fishmeal, soya bean meal, as sources of carbohydrates and proteins respectively. Other ingredients added include; mineral salts, vitamins, coccidiosis and antioxidants like ethoxyquine or butyrate hydroxytoluene, vitamin and mineral premixes (Smith, 1993). When feeding broilers, broiler starter is given to

the birds from 0-21 days of age the followed by broiler finisher. Each broiler chick consumes 1.5kg of broiler starter in the brooding period (0-3 weeks) and 3.5kg of broiler finisher from 4-7 weeks of age (Uga chick poultry breeders). For layers, chick mash is given from 0-8 weeks of age followed by grower's mash from 9-20 weeks. After 20 weeks of age, layer's complete meal is given layer mash. Each layer chick consumes 2kg of chick mash in the brooding period (0-8 weeks), 6kg of grower's mash in the growing period (9-20 weeks) and 49kg of layer's mash in the laying period from 21-80 weeks of age (Uga chick poultry breeders).

- v. **Water Consumption:** Water is normally provided optimum importance in life. Water consumption by poultries increases the quantity of eggs of the bird, protein and sodium chloride levels in their feed. Water deprivation can lead to death of poultry within 24 hours. A (10%) restriction of water availability can reduce the growth rate and feed conversion efficiency of broilers. In layers, water deprivation can lead to moulting and cessation of egg production (Smith, 1993).
- vi. **Litter management:** Coffee husks, saw dust and wood shavings are used as litter. The success of deep litter system is dependent on decomposition of litter by bacteria (Sainsbury, 1993). Litter keep the birds clean and comfortable and absorbs moisture from droppings (Ensiminger, 1992). During the growing period, litter should contain 20-30% moisture. This result in better feather growth close to normal, feed conversion is improved, Coccidiosis problems are easily controlled and ammonia in the poultry house is easily controlled (North, et al 1990). In brooding houses, wet litter can have a calamitous effect on the feet of cocks causing accumulation of infected litter on the feet leading to fall in the level of fertility (Sainsbury, 1993).

Proper litter management in the poultry house reduces the need to remove litter in between flocks and aids in creating clean out schedule that allows direct application of manure onto crop land without intermediate storage.

The primary key to good litter management is keeping litter dry. Wet litter is undesirable and creates a condition where more nitrogen is released in form of ammonia. Good litter conditions are maintained if there is proper heating and ventilation, selection and operation of watering systems to minimise water spillage on litter. Drinker points and drinking areas are dangerous due to water splashing and concentration of birds. Therefore it is essential to frequently turn

this litter. Wet litter is cold and tends to take up heat in an attempt to dry up. It's advisable to start with about 70mm layer of litter and add to it with time. Adding litter dilutes droppings and the condition of litter is improved. High ammonia levels are dangerous and unpleasant to operators. Ammonia levels should not exceed 15-20 p.p.m. levels over 40p.p.m may reduce feed intake. Levels over 50p.p.m affect the mucous membranes lining the respiratory tract, affect respiration and may also cause blindness (Sainsbury, 1993).

- vii. **Record keeping:** The key to good business and management is records. Records are kept to provide information from which the poultry business can be analysed, so that the operator may develop more effective plans to develop the enterprise, to provide profit and loss accounts, to provide net worth statement showing financial progress throughout the year, to keep production records on birds and to keep a complete historical record of financial transactions for future reference (Ensminger, 1992).

Issues recorded by most farmers include; total number of birds housed, the cost of birds or the cost of rearing birds if it's done by the owner, eggs collected daily, sales made, feed consumption, mortality and labour costs (Sainabury, 1993). Records should not be elaborated otherwise they may not be kept properly by workers (Smith, 1993).

Marketing: In Africa and other tropical areas, marketing of eggs and poultry is not highly organized; Sale of eggs and poultry depends on the farmer's initiative. Efforts to establish market schemes in different areas have not yet succeeded and there are few commercial parkers thus making it a problem to farmers and acts as a brake to poultry production. In a glut, price cutting becomes acute and farmers have to sale off their product at lower price to reduce the stock. In the poultry industry there is no room for unplanned and uncoordinated production therefore it's important for the producers to make advance arrangements for the disposal of their birds and eggs at an appropriate time. The more control the poultry industry gains over the marketing and distribution of its produce the better it becomes for each individual producer.

The way in which the poultry meat is presented is important if sales are to increase. The repacked carcasses whether frozen or fresh must have an eye appeal. Processing of poultry involves killing the bird, bleeding, hanging for reflex action to cease and plucking. This is followed by evisceration, washing,

grading, parking and freezing. Many producers take no step to find the most appropriate market for their products nor do they study the requirements for the prospective buyers sufficiently. It's only in the broiler industry where it has been considered. The various sales outlets for poultry and its products are; consumers at farm gate (carcasses are dressed), retail outlets, hotels and other catering establishments, parking stations, travelling dealers and large central markets. (From here and above up to where the correction in red, the grammar should be examined by

On the side of eggs, its future lies in promoting egg dish suited for the local dish. After eggs are collected at the poultry farm, they should be graded. This is to make sure that the eggs reached the consumers with the least possible loss of their original quality. The quality of commercial eggs is measured by; cleanliness, shape, colour, size and weight. Cracked, misshapen and broken eggs are always rejected. Eggs with chalk heads, sand heads or body checks are disqualified even if the defects are minor. Egg size and weight should be uniform. Double Yolk and jumbo eggs are rejected and sold locally to overcome transport problems, record.. According to African classification, large eggs are 65g and above. Medium eggs are (55-64g) while small eggs are (40-55g). According to European classification, class 1 eggs are 70g and above, class 2 eggs are (65-70g,) class 3 eggs are (60-65g,) class 4 are (55-60g), class 5 are (50-55g), class 6 are (45-50g) while class 7 are 45g and below.

Internally, egg quality is measured by the size of the air space, condition of the yolk and the egg white, presence of blood and meat spots or other abnormalities in the egg white. This is done by candling.

viii. **Poultry Diseases:** Disease is a deviation from normal health, a condition where all the organ systems and the body structures are working in full harmony. In disease, functions of organs and body structures are upset and normal life is disturbed. In most cases, poultry diseases manifest by clinical signs and these may include; reduced feed intake, reduced egg production, high mortality, isolation from other birds and retarded growth. The management decision made by the owner and the implementation by the stock person are reflected in the health of the flock especially if birds are kept intensively (Pattison, 1993). The diseases that commonly affect chicken may be grouped into bacterial, viral, protozoa, helminthic and fungal.

A. Bacterial Diseases

(i) Salmonella infections

They are caused by bacteria of genus salmonella. The infections are categorized into salmonella pull rum, fowl typhoid and paratyphoid infections.

(ii) Pull rum Disease

The disease is caused by salmonella pull rum and usually causes high mortality in young chicks and occasionally in adult chicken. The disease is chiefly transmitted through the egg, but also occurs by direct or indirect contact. Poultry visitors and buyers may also carry the infection on their clothes and footwear.

Pull rum disease is controlled by establishing a breeding stock free from *S. pull rum*, hatch and rear the progeny directly or indirectly avoiding contact with infected chicken and turkey.

(iii) Fowl Typhoid

The causal agent is salmonella gallinarum. This infection is similar to pull rum disease. The disease is egg transmitted and has greater tendency of spread by direct or indirect contact in among growing and adult flocks. Mortality is high in all ages. Older birds may get dehydrated, anaemic and develop enteritis.

Clinically fowl typhoid mainly affects growing adult birds. Signs shown include; reduced appetite, ruffled feathers, pale shrunken comb, reduced egg production, fertility and hatchability, fever, diarrhoea and dehydration. Death occurs within 1-5 days (Sainsbury, 1993)

The disease is prophylactically controlled and treated using sulphonamide drugs as in Porum disease. Fowl typhoid is controlled by establishing a breeding stock free from *S. gallinarum*, hatch and rear the progeny directly or indirectly avoiding contact with infected chicken and turkeys.

iv. Helminhosis

This affects birds on free range and deep litter systems. The disease is mainly caused by tape worms such as; *Rallietine echinobothrida*, *R. tetragena*, round worms such as; *acarida galli*, caeca worms like *Heteroecism gallinae*, thread worms like the capillaries species

Generally the chicks are droopy; there is failure to gain weight, low egg production in layers, diarrhoea and inflammation of the gut wall. Helminthiasis can be prevented by practicing good litter management, rotation of the range and routine deworming.

Affected birds should be treated with piperazine, Benzimidazole for nematodes and niclosamide for tapeworms.

B. Fungal Infection

(i) Brooder's pneumonia

It is caused by fungal organisms of the genus *Aspergillus*. These are; *Aspergillus flavus* and *A. fumigatus*. The disease occurs in two forms; the acute form characterized by severe outbreaks in young birds and high mortality. Chronic aspergillosis occurs in adult breeder birds. Aspergillosis is common in birds which are confined on mouldy litter or when given mouldy feeds.

The organisms are transmitted by inhalation especially if litter or feed is heavily contaminated with *Aspergillus*.

Clinically, there is dyspnoea, increased rate of breathing, gasping and coughing, in older chickens there is anorexia, ruffled feathers, emaciation and dysphagia in case the oesophageal mucosa is affected. Some birds have serious nasal and ocular discharges. There is reduced egg production and torticollis.

Control of aspergillosis depends on strict hygienic practices and removal of affected birds; frequent removal of water and feed troughs, daily cleaning and disinfection of water and feeding utensils to eliminate the infection. Sick ones should be given an aqueous solution of copper sulphate to prevent spread of infection, treat litter with copper sulphate, amphotericin B and crystal violet. Neomycin can be used to control outbreaks in chicks, Amphotericin B and phenyl mercuric dinaphthylmethane, disulfonate, controls infection in embryos. Dimethyldithiocarbamate, given subcutaneously is effective against the infection in chicks of 5 to 10 weeks of age.

C. VIRAL DISEASES

(i) Newcastle Disease

It is an acute viral disease, usually of birds characterized by sudden onset and rapid spread of respiratory symptoms. Nervous signs usually present in chicks, there is high mortality and majority of the flock are affected. The disease attacks chicken, turkey and wild species of birds.

The disease is caused by a paramyxovirus which has several strains. The disease is transmitted via aerosols and faeces. The incubation period of the virus varies from 2-15 days or longer with an average of 5-6 days.

Clinically the disease is characterized by respiratory and nervous signs and in some cases Diarrhoea and swelling of the head. Birds appear listless, weak, have an increased respiratory rate. There are numerous signs prior to death such as muscle tremor, torticollis, and paralysis of the wings, circling, walking backwards, and opisthotonas and there is reduction in egg production (Sainabury1993).

The disease can be prevented by vaccination, using Bactch1 and Lasota vaccines in the first 1-4 days of life, 2 weeks, and 4 weeks. In layers, vaccination is again done at 10 weeks of age and just before laying. Thereafter, revaccination is done every 5 months during the laying season. In endemic areas and also maintain good sanitation (Sainabury, (1993). Sick ones should be isolated. At the moment there is no specific cure for the disease.

(ii) Fowl pox

It's a disease of growing and adult birds caused by DNA Avian pox viruses of family paramyxoviridae. It's transmitted by mosquitoes of genera culex and aedes and contact through abrasion of skin.

The disease occur in two forms; the cutaneous and diphtheritic forms. In the cutaneous form the comb, wattle eyelids and other unfetter parts of the body are lacrimation, loss of eyes in case of secondary bacterial infections.

In diphtheritic form, there are yellow lesions on the oral mucosa, larynx oesophagus and trachea. There may also be coetaneous lesions firmly adhered on to the mucosa.

This disease can be prevented and controlled by stocking clean birds, isolating and treating infected birds, observing strict sanitary measures, vaccination using pigeon pox vaccine for laying birds and fowl pox adopted vaccine for growers. The vaccine is administered either by wing or by feather follicles. Infected birds should be isolated and treated by scrapping and painting of affected area using iodine solution.

2. 3 Economic Impact

Economic Impacts are effects on the level of economic activity in a given area. It may be viewed in terms of a given area that differs from one location to another. Moreover, this can be viewed in terms of business output (or sales volume), value added or gross national Product), wealth (including property values), personal income (including wages), or jobs. Any of these measures can be an indicator of improvement in the economic well-being of area residents, which is usually the major goal of economic development efforts. The net economic Impact is usually viewed as the expansion or contraction of an area's economy,

resulting from changes in (i.e., opening, closing, expansion or contraction of) a facility, project or program.

Sometimes there is also interest in assessing the economic impact of an already existing facility or project. This is usually viewed in terms of the jobs, income and/or business sales that are directly or indirectly supported by the facility or project. Such measures actually represent the gross effect -- i.e., the facility's or project's role in (or contribution to) the area economy. That is not necessarily the same as the net impact, particularly if other activities would be expected to enter or expand in the absence of this facility or project.

Economic impacts are different from the valuation of individual user benefits of a particular facility or service, and they are also different from broader social impacts. The user benefits and social impacts may include the valuation of changes in amenity or quality of life factors (such as health, safety, recreation, air or noise quality). While these various types of benefits and impacts may be valued in Economic (money) terms, through studies of individuals' or society's "willingness to pay" for improving them, they are not economic impacts (as defined above) except insofar as they also affect an area's level of Economic activity.

Economic impacts also lead to fiscal Impacts, which are changes in government revenues and expenditures. Economic Impacts on total business sales, wealth or personal income can affect government revenues by expanding or contracting the tax base. Impacts on employment and associated population levels can affect government expenditures by changing demand for public services. Yet while they are related, fiscal impacts are not the same as economic impacts.

According national statistics (2010), said economic impact is the measurement that has become a powerful and persuasive tool for those looking to capture and evidence of the financial benefits that can result from the hosting of a major event.

Measuring economic impact not only allows public sectors bodies to evaluate their economic return on investment. But also demonstrate how events drive economic benefits allowing event. Organizer develops practices which maximize these benefits.

The economic impact of a major event refers to the total amount of additional expenditure generated within a defined area, as a direct consequence of staging the event. For most events, spending by visitor in the local area (and in particular on accommodation) is the biggest factor in generating economic Impact. However spending event's organizer is another important consideration economic impact studies typically seek to establish the net

change in a host economy in other words cash flow and out flows are measured to establish the net outcome.

2.4 Poultry Production Concept

Any bird hunted for useful purpose is a member of the bird group collectively known as poultry. Most of these birds are domesticated and are managed on the same basic principles as the domestic fowl. Most of them also belong to three orders of the avian classes. Poultry farming is the raising of domesticated birds such as chickens, turkeys, ducks, and geese, for the purpose of farming of meat or eggs for food. Poultry production farmed in great numbers with chickens being the most numerous More than 50 billion chickens are raised annually as a source of food, both their meat and eggs (Ademosun, e t al., 1997).

Poultry production is an important and diverse component of any country agriculture .poultry products including eggs, chickens and turkey meat are healthy part of diet of most in Nigeria. In 2009, nearly 145,615 farms were producing poultry and its products (broilers and turkey, NASS USDA) while broilers chickens production is concentrated primarily in the western and southern part of the country. Turkey production occurs primarily in northern part of the country while eggs production is distributed throughout the country. Modern poultry production occurs primarily in enclosed building to protect the bunds from wild birds. This has allowed farmers to greatly increase production efficiency which significantly reduce the amount of labour regard. As with pork production, this has resulted in environmental changes with production of lager volumes of manures in much smaller areas. (United State Environmental Protection Agency UEPA, (1992).

2.5 Input

Input is term denoting either an entrance or changes which are inserted into a system and which activate or modify a process, it is an abstract concept, used in the modelling, system design and system exploitation. It usually connected with other terms, e.g. input field, input variables, and input Parameter. Input value signal, input port, input device and input file.

Input refers to advice (opinion), an opinion or recommendation offered as a guide to action; conduct (Wassily, et al. 1986).

Input can also be defined as something put in a system or expanded in its operation to achieve output or a result especially energy work, or power used to drive a machine

(Wassily, et al 1986), he use the Input concept in conceptual framework and he define it as a denoting terms to an entrance or changes. But the Current study use Input as economic variables that a Researcher can use to determine the Economic Impact of poultry production achieve by the individual Respondents.

2.6 Output

Output is the term denoting either an exit or changes which exit a system and which activate /modify a process. It is an abstract concept. Use in the modelling systems design and systems exploitation

In equity, theory output is the benefits that an employee's receives including money pre requisites, prose status fame or variety (Wassily, et al 1986).

In Economics, output is the amount of goods and services produced by a person, machine, firm, industry, or country etc. During a specific time period, In such a year, a distinction is drawn between gross output and net output, wassilly (1986) use output in his theory as benefit that an employer's receives, including money pre requisites, prose status fame or variety, while in the current study, the researcher user output as the outcomes or product that the poultry farmer get after putting his input in the poultry farm in order to achieve the economic impact.

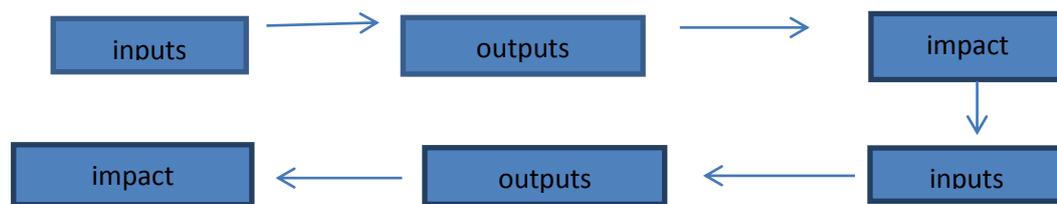


Figure. I: shows the chain of Economic Impact through input and output

Source: Field observation, 2014.

2.7 Factors Determining Poultry Production

Poultry industry by its scientific technical and Economic sense tool, place in Katsina, since seventies of the 20th century where the breeding process of chickens for meat production as well as for egg production standard in an intensive way, before the seventies the poultry production was prevailing in the rural areas at small-scales and traditional method. At the time the surplus of meat and eggs are gathered and transported from the rural areas to the urban areas to meet partially, the demand of the urban population.

The rapid increase of the population and increase of the per capital income in the country (Nigeria), have led to the increase of consumption, demand on food in general and meat in particular, what has widen the gap between poultry production at a large and intensive scale within the state sector and encouraged private sector to do the same.

The factors determining poultry production were numerous. However, the following are the most important.

Feeding process:

The cost of feeding represent almost seventy percent (70%) of the total cost of broilers production (British poultry science (2006), in broilers production, feed efficiency may be impaired correlated response to selection for decreased age of mar list weight, increasing body weight at a given age increased both maintenance cost and fat yield at a given age, but they did not hold to given body weight (Pym, 1990). Feeding process then is a very important factor upon which economy of production depends. Feed has its impact not only upon the quantity of poultry production but also upon the quality of birds. The proper feeding process is that which uses a less quantity of feed at a cheap price to give the highest production quantity, at the best quality. In other words the economic feeding process is that

which gives the highest profitability. So in my research work I observed how that will be very important to poultry farmers, by citing example of what other researcher said about it.

As poultry strain bears its special efficiency and charge touristic, the right feed is an important factor to keep and support such efficiency. In other words, to keep the advantages and support the efficiency and characteristics of a given poultry strain, as it has to feed the strain in a proper way.

The feed needs of the different poultry strains are in equal, where the feed need of the poultry strains for egg production differs from that of meat production. Moreover, the feed needs of a given strain differ according to the wealth, climate conditions and other factors. There is no universally applicable solution for optimal feeding of livestock; climate conditions, availability of feed stuff, local physics, and local technical infrastructure determine the optimal working pattern of poultry breeds, the latter should be specialized in balancing these parameters and finding the optimal solution (Adopted in British Poultry Science Journal, (2006).

In Nigeria poultry feeding industry depends upon the local raw materials such as barley, wheat, fish meal powder, limestone, salt and premix phosphates, as well as, upon the imported feed components, such as yellow maize, soya beans, meal, cotton seed meal and crop protein. According to the available statistical data there are almost ten (10) feed stuffs factories. The table 2 illustrates the main feed stuff factories, and production capacities per hour as well as their production quantity in Nigeria.

the table 2.1 shows the production capacities of the stuff factories in Nigeria and state in general (Katsina) are not falling utilized, only two feed stuff factories are working (2) shifts and fire factories are working (3) shifts per day, meanwhile (4) factories are working for only one shift this does not mean that Nigeria has achieved self-sufficiency in feed production and consumption. Nigeria still imports ready- made feed stuff from abroad, and table (5) illustrates this fact

Table 2.1: Feed stuff factories in Katsina, Nigeria (2014)

No	Name of factory	Production capacity (tone per hour)	Working hours per day	Number of working shifts	No. of shift per hour	Production tone/hour
1.	Vital feeds	1 0 0	2 1	3	7	5 7
2.	Golden star feeds	5 0	1 6	2	8	2 3
3.	Soviet international feeds	3 0	1 6	2	8	1 4
4.	Toffee feeds	2 0	1 6	2	8	1 2
5.	Animal care feeds	3 0	1 6	2	8	1 0
6.	Niger feeds	2 5	1 4	2	7	8
7.	Superb feeds	2 0	1 8	1	1 8	6
8.	Concentrate feeds	1 0	8	1	8	4
	T O T A L	2 8 5	1 2 5	1 5	8 0	1 3 4

Source: State Ministry of Agriculture, 2014 Report

Based on the data gathered the research shows that, the market of finishing feeds is developing rapidly in a very short period of time compare to other market in the sector. As indicated in the vital feeds and golden star feeds carried the larger proportion in the production table.

(i) Chickens

Chickens can be considered as the backbone of the poultry breeding process. The success or failure of poultry production process depends among other factors upon the choices of the kind of chicks' subject of breeding process. When the breeder chooses his chicks he must take in to consideration, the Levant conditions of his environment, such as climate, temperature, humidity, etc. chicks are divided into strains. Every strain includes these birds which have the same characteristics and shape. The strain may be pure or mixed with other strains. Meat and egg production depends mainly upon the genetics composition of the strain.

Any poultry strain can keep it special characteristics and advantages only under a given environment. Therefore the success of poultry breeding process depends mainly upon the right choice of poultry strains as it requires a high scientific and technical experience in addition to the material possibilities of the breeder. The random sample test and other test methods should be used for the choice of the right poultry strain e.g. Poultry production in the warm-wet climate).

In this selection, the poultry strain for egg production and breeds should take consideration of the following economic differences between the brown egg lines and the white egg line

Table 2.2: Shows the Difference between Brown Egg and White Egg

Comparison Element	Brown strain	White strain
C o l o r	white female is brown	Male and female are white
D e a t h r a t i o	L o w	R e l a t i v e h i g h
F i e r c e n e s s d e g r e e	L i t t l e	R e l a t i v e h i g h
Egg eaten custom degree	L i t t l e	R e l a t i v e h i g h
Disease catching degree	L i t t l e	R e l a t i v e h i g h
Feed consumption		
a – for the whole breeding time	9.8kg of feed stuff	7 . 5 k g
b – for the whole period of production	4 5 – 4 6 k g	4 3 – 4 4 k g
The beginning of the period of production	At the end of the twenty second week	At the beginning of the twenty first week
Total egg production per hen	2 9 0 e g g s	3 1 0
E g g w e i g h t	6 3 g m	6 0 g m
Number of birds per m ² of ground	6 – 5 b i r d	6 b i r d s
Number of birds per battery cage	5 b i r d s	5 b i r d s

Source: Federal Ministry of Agriculture Nigeria (2011)

(ii) The Veterinary Health Care.

The veterinary health care for chickens is one of the most important factors affecting poultry production. The periodical veterinary control is necessary to discover any kind of poultry disease at its early stage. This is necessary to save poultry production through the veterinary treatment of the chicks against these diseases. To protect and increase the immunity of the poultry lives-stock against death or against the decreases of chicks' body weight, all necessary disease check has to be at the right time, all types of vaccines should be available and sufficient in the different regions in which the poultry farms exist. Moreover, all types and methods of sanitation such as poultry house sanitations, Hatcher and cages sanitation etc. This should be fulfilled by cleaning the hatcheries between hatches and proper waste disposal, is very important.

As regards to what happened in the country in the previous time that is during military era, the country faced some difficulties in the field of veterinary services, where there was an acute shortage in the supply of vaccines and sanitation materials. Through, it was due to the economic blockade imposed on Nigeria by the western countries and their allies. It was very difficult then to import vaccines and chemicals for sanitation, therefore vaccines and chemical sanitation materials reached the country so late, and the validity of these vaccines expires. The situation had left its negative impact upon the level of poultry production in Nigeria.

(iii) Environmental Factor

These environmental factors are summarized in table and its' include nutrition, age, temperature, humidity, period and ventilation. Other factors are management systems and management conditions to which the birds are exposed. Irrespective of the potentialities and environmental conditions, the layers follow an age pattern in egg production as previously discussed. The variations in the lengths of different phases and performance during each layered eggs between white and brown lines. The basis of the variation in performance of the fowl might occur.

(iv) Temperature

This factor appears to be very important as it partly accounts for differences of the fowl between these in the temperate regions and those in the tropics. The mechanism for the control of body temperature has been discussed earlier. The thermo neutral zone of the adult fowl within which the performance of the fowl is not adversely affected by temperature is from 12.8⁰c to 26.⁰c. This temperature range supports the highest egg qualities. The temperatures and relative humidity obtained in an experiment convening the period of two years at the University of Ibadan are shown in table 3 below.

Table 2.3: Environmental conditions that determining the performance of poultry production.

	Age in weeks from point of lay of 25 to 50 hen day production
Condition of poultry under:	No. of weeks 1 2 3 4 5 6 711
(1) Light period	
- Tropic regions	12 12.5 13 13.5 14 14.5 15 17
- Temperature regions	6.0 6.5 7.0 7.5 8.0 8.5 14 or 17
(2) Light intensity	0.5 lux (5 foot candles)
	Not less than 0.05 lux (0.5 foot candle)
	Rate (m ³ / h per bird) at

Adopted from the tropical Agriculture (1975),

2.8 Output Level Determination in Poultry Production

Poultry production contributes to the solution of the unemployment problems facing the society and poultry breeders can directly open new employment opportunities. Moreover it can open new jobs indirectly through the development of the industries converted with poultry production such as feed industries, storage and marketing of eggs production, slaughtering industries, industries food freezing and packing industries, meat conservation industries, industries producing machines technical tools necessary for poultry production can contribute to the state food security policy and strategy.

It is necessary to clarify inter protection of it from ‘betrayed’ because it may generate confusion in the payment, ‘backyard’ identifying a low level output and input products in the sector, compare it to the villagers, or scavenging system, in the country however backyard interpreted literally as at the back of the yard, and it often used to identify the lowest level of the sector, (food and agriculture unit of nation (2003).

Poultry production as an aspect of livestock production, is important to the biological need Economic and social development of the people in any nation. Poultry production of meat and eggs, output was increased to 26 percent. In 1995-1999, (27 %) percent increase in eggs production was recorded during the period. Akanni, (2007) said the importance of poultry production is characterized by low production level due to limited finance for the procurement of basic poultry equipment and materials how the result of things is that many of the small-scale poultry farmers does not encouraged to increase their productivity, therefore moving from small scale production to large scale production. Small-scale poultry industry could be detrimental to increase poultry production.

2.9 Economic Impact of Poultry Production

Poultry production is characterized by its high Economic returns, due to its short production cycle 7-8 weeks mean while the production cycle for other animals ranges from 3 to 12 months. Therefore, the capital cycle is very rapid in the case of poultry production as compared with other animals where the production cycle can be repeated 7 times a year (British poultry science, 2006). That the poultry production is characterized also by a higher conversion rate of feed to meat in comparison with other animals where the production of one kg of poultry meat needs from 2 to 2.5 kg of feed mean while the production of one kg of red meat (animal meat) needs more than seven kg of feed.

Economically poultry production need small area in comparison with other animals and it (poultry production) can contribute directly to solving the problems of unemployment and can also directly open new employment opportunities. Moreover, it can open new jobs indirectly, through the development of the industries connected with poultry production such as feed industries, storage and marketing of eggs production, slaughtering industries, food freezing, packaging industries and meat conservation industries. Industries producing machines and technical tools necessary for poultry production can contribute to the state food security policy and strategy.

In the recent years, poultry meat has been applied to food and provides the needed protein, extensively. Poultry productions speed up, due to rapid growth of nutritional facility, by using modern techniques like efficient humidity and density. But, because of no observant of correct management principle and technical standard in poultry production and breeding, it caused abnormal damage that had been done by farmers in the first instance.

This account for about (10%), percent total reduction in the country, But the nursing population engaged in poultry production inversely recorded a subsistence farming through small and medium size farms. Presently the industry has been adversely affected by stringent government economy measures by means of a very well pronounced on poultry production, due to high level factors that resulted in effective control in lines to poultry production.

Similarly, in most of the African countries, marketing of eggs and other poultry items is not highly organized. Set of eggs and poultry products depend on the farmer's initiative. Some effort is under taking to established market schemes in different localities, but has not yet succeed and there are few commercial parkers, that contribute in making it more difficult to farmers and act as agent in price hiking of poultry product.

In the market, the price hikers sometimes cut-down the price of poultry product from the farmers and sell it in exorbitant price in the market. There is no standard planned and coordination of poultry market in Nigeria. Therefore, it's important for the producer to make advance arrangement for the disposal of their birds and eggs at an appropriate time. The more control poultry industry gain, the more of its marketing goods. The way in which its poultry meat presented is important to sale. The repackage of frozen and fresh chickens must be conducive. Poultry harvesting involves killing, plucking handy picking for sale. This followed by evisceration, washing, gashing, parking, and freezing.

Many producers take no step to find the most appropriate markets for their products nor do they study the requirements for the prospective buyers sufficiently. It's only in the broilers industry where it has been considered. Its various sale outlets for poultry and its products as, consumer at farm gats (carcasses are dressed) out lets vital and other catering establishment parking station travelling declares and large contra markets (Portsmouth, 1989), On the side of eggs its future has in promoting eggs dish suited for the local dish. After eggs and collected at its poultry they should be graded. This to make that its eggs need the consumer with its least possible loss of them original quality. The quality of commercial eggs is measure by, sandiness, shapes, labor, size and weight, crashed misshapen and broiler eggs are always rejected. Eggs with check head, sand head, and body check are disqualified, even if the defects are minor. Eggs size and weight should be uniform rubout yolk and jumbo eggs are rejected and sold wealthy to cover the transport problem very eggs are discarded. According to African classification leaf eggs are large and above medium eggs on 55 -64 g. while small eggs are 40-55 g. According to European classification , class 1 eggs of 70 g. and above class 2 eggs g 65-70g class 3 6-65 g class 4 are 55-60g class 5 are 50-55g class are 45-60g while class 7 as 45g and below .

Internally, eggs quality is measure by the size of the air spaces condition of the yolk and the eggs while presence of blood and meat spots or other abnormalities in the eggs while. This is due to candling, how possible road network can accurate Wassily (1986). Mention economic impact as economic return that a producer is receiving after or during production, but in this study the researcher trying to show how the economic impact is impacting many benefits to the farmers within the area.

2.10 Economic Growth of Poultry Farmers

Changing Agricultural road demands however were at stems when the financial ability of states and local government to maintain and improve the rural transport system

has been diminishing. In Africa local government has jurisdiction over a total of 2.9 million miles of roads which comprise 75 degree of the total road system this road include country roads town and trouncing and other local roads account for 54 degree of the nation roads network, they handle just over 4 degree of the total valid miles . Over roll roads comprises nearly 79 degree of the total miles but carry then 39degree of total annual traffic.

Jolanda, prozzi, Robert Harrison and Jorge et al; poultry sector has been growing at a much faster rate than other sector of the economy and account for 100 billion naira contribute to Gross National Product (GNP) despite such amazing growth in last two decade and per capita consumption of egg and poultry meat in the country is appointing low with approximately 36 eggs and 0.7 kg of poultry meat in 2001, less in term of quality because of poor road network in the country.

Home consumption which is more important than sales, contributes thus to the improvement of the protein supply to town dwellers. It also enables duck keepers (salaried or not) to save money in the household budget denoted to food expanses. Food amount to 41, percent of the budget of salaried person and 60 percent of that of non-salaried persons.

The provision of food and livelihoods to majority of the populations, despite the overarching influence of the oils sector in overall national income generation, the contribution of agriculture to the gross domestic product (GDP), food supply and economic cannot, therefore be underrated imaged, poultry production offers a rapid way to bridge the gap between supply and demand for protein in general and other poultry product That is essential in human body (Orunnuyi, 2002). He stated that the major problem of the poultry production in the areas is that of low productivity and influence in resource allocation and utilization. The industry is characterized by high production cost, low profit margins, and high feed bills.

Olayide, (1976) examined that local producer of local chickens derived on economic importance of lower chicken price than broiler and layers. He stated that the rearing of chickens is popular in rural areas of most resource in poor countries, as a means of providing supplementary food, extra income and employment to family members and also to capitalize on harvest waste and inferior grains produced on farms. The economic impact of poultry production for social development of the people in any society cannot be over emphasized (Olayemi,et a al. (1979).

Poultry producers, marketing agents and consumers have limited information on feed Formula and manufacture, product processing and packaging as well as marketing strategies, product handling and storage, quality standard etc. Poultry production breeding

is culturally acceptable to people all over the world and provides an excellent and production source of protein for poor communities because it require little capital, labour or little space of land in order to adopt it (Otete, 2000).

He emphasizes on the market of poultry product currently indicates a significant excess of demand over supply, leading to premium of about 50% over free range price being obtained.

He argues that agricultural depends among other thing on the availability of funds to make new production inputs and technology accessible to farmers (Bin Wanger, 1989). He also emphasizes on how the agricultural development can boost economic growth in Katsina state-Nigeria.

He examined that how input husbandry methods contributed to the light mortality meats in village chickens. However, the main constrains to village chickens rearing was new castle disease which frequently causes serious mortality rate (Moreki, 2010). The conventional measures of every sector performance is to measure the output and input performance of the sector and how the sector can achieve it specific goals and objectives in improving and developing. The economic growth of a country is to give a brighter picture on what to achieve or desired objectives in the future.

Productivity is usually defined as a ratio of output to inputs. Productivity is also a measure of the efficiency on the products to produce. It comprised the factors of production needed to produce the output improvement in relationship between output and input factors. When a given amount of input factors are larger than the quantities of output, the end product will realize loss to the farmer.

The rapid increase of the population and increase of the per capital income in the country (Nigeria) have led to the increase of consumption, demand on food in general and meat in particular, what has widen the gap between poultry production at a large and intensive scale within the state sector and encouraged private sector to do the same. The factors determining poultry production were numerous. However, the following are the most important.

a. Chickens

Chickens can be considered as the backbone of the poultry breeding process. The success or the failure of poultry production process depends among other factors upon the choices of the kind of chicks' subject of breeding process. When the breeder chooses in chicks he must take in his consideration the leaven conditions of his environment such as

climate, temperature, humidity, etc. chicks are divided into strains. Every strain includes these birds which have the same characteristics and shape. The strain may be pure or mixed with other strains. Meat and egg production depends mainly upon the genetics composition of the strain.

Any poultry strain can keep its special characteristics and advantages only under a given environment. Therefore the success of poultry breeding process depends mainly upon the right choice of poultry strains requires a high scientific and technical experience in addition to the material possibilities of the breeder. Have the random sample test and other test methods should be used for the choice of the right poultry strain e.g. Poultry production in the warm-wet climate).

In this selection, the poultry strain for egg production and breeds should take consideration of the following economics differences between the brown egg lines and the white egg lines.

b. Environmental Factor

These environmental factors, some of which are summarized in table (3) include nutrition, age, temperature, humidity, period and ventilation. Other factors are management systems and management conditions to which the birds are exposed. Irrespective of the potentialities and environment conditions, the layer follow an age pattern in egg production as previously discussed. The variations in the lengths of different phases and performance during each layered eggs between white and brown lines. The basis of the variation in performance of the fowl might occur.

c. Temperature

This factor appears to be very important as it partly accounts for differences of the fowl between these in the temperature regions and those in the tropics. The mechanism for the control of body temperature has been discussed earlier. The thermo neutral zone of the adult fowl within which the performance of the fowl is not adversely affected by temperature is from 12.8⁰c to 26.⁰c. This temperature range supports the highest egg qualities. The temperatures and relative humidity obtained in an experiment convening the period of two years at the University of Ibadan are shown in table 3 below.

d. Economic Factors

Economic factors is one of the major important factors that is determining the progress of poultry production in Nigeria (Katsina) because most of the farmers are

complaining about how the market is moving in their area because they use produce what people ask them to produce, but the market progress is very small between one area and another.

In Nigeria and the state (Katsina) the system of poultry production was changed from small traditional forms of the production to more intensive and large scales poultry farms in order to meet increasing demand. Poultry production is important because of both technical and economic reasons. The most important factors influencing this production were: feeding process, selection of chicks and veterinary health care.

As far as Nigeria is concerned, poultry, feeding industry depends upon the local raw materials as well as upon the imported feed components. There are more than seven (7) feed stuff factories.

2.11. Problems Facing Poultry Production in Katsina

Poultry farmers in Katsina, (2013) says that; they are unable to expand their business due to some certain problems that are facing them in general, among then problems we can state some Important or major ones in the research finding as follows:

I. In-adequate funding: poultry farmer in Katsina state of Nigeria, are mostly small-scale farmers, and they have not been able to expand their farms because of lack of funds, for running their poultry farms. The farmer needs to have enough money to fund the business, because, it's capital intensive. The bird need to be feed on daily basis, in order to have good products and this does not leave out the money spent on buying vaccines to prevent the outbreak of diseases, which can be disastrous for the farmer when it happens, it is important to highlight that; the amount of money needed to fund poultry on feed is continuously rising. There is either an increase in the price of maize or groundnut or other ingredients used in processing the feeds. Most of the farmers are now finding alternatives feeding means for their birds while others are getting out of the business.

lack of or inadequate access to loan has negatively affect the production capacity of most farmers, because the bulk of birds consumed in the country or in the state and local government are either from other places that have big farms or imported from outsides the country. Small-scale farmers have not been able to contribute much to bird production and other poultry product with egg and meat, because of lack of access to loan facilities.

Another poultry farmer said the poultry sector is underdeveloped and will remain so long time investment should be made by government. He further emphasized that, farmers

are yet to recover from the loss recorded during the outbreak of avian flu in (2007), which lead to the loss of many birds and eggs especially in the northern part of the country.

ii. Illiteracy: Lack of knowledge for the farmers on how they can get access to loan from the micro finance banks. Because the banks claim that their farming standard does not meet the normal farming standard required by the bank. This has in turn affected the turnout of bird productivity. In due course, the small-scale farmers end up not producing enough birds for local consumption. This has a negative effect on eggs production in the state and country in general.

The government is serious about its bid to revive agricultural policy in the state and the country at large, it should allocate loans to small-scales farmers in livestock farming, especially the poultry sector but not only the crop farmers.

iii. Marketing: Poultry products in most developing countries especially Africa (Nigeria), is still expensive. The marketing system is generally informal and poorly developed unlike eggs and meat from commercial hybrid birds. But the local consumers generally prefer those from indigenous stock. The existence of a local market offering goods sales opportunities and adequate transport facilities, are obvious prerequisites for development. Similarly, most of the consumers with greater purchasing power live in the cities. Intensification of poultry production should be initiated in urban areas or at least in areas having good road network.

Traditional dealers and middlemen, who collect eggs and birds from the villages, facilitate the marketing of products in most developing countries (Nigeria). Most of the traditional market structure is most often in the remote areas. There has been a regrettable tendency in some countries to use government extension services to market their products. This practice should be encouraged as it should be sustainable.

iv. Lack of Keeping Record: Keeping good record is an essential part of modern system of poultry management in Katsina areas. Lack of accurate records of the kinds and quantities of materials and feeds purchased with their corresponding costs, the quantities used, number of birds according to their age, sex, and sales, in short accurate up to date records which will help to evaluate the progress of the birds whatever is lacking will constitute a problem to poultry production in Nigerian Katsina state.

v. Lack of Proper Sanitation: It is best to adopt management practices that will prevent the problem of pest and diseases that are most prevalent. In duck, are mareks Diseases, new cattle diseases, Gambaro, fowl pox and fungal diseases Coccidiosis. Both internal and external parasites, such as red mice and scaly, leg metes are also problems to contend with.

vi. Housing: Housing is one of major problems facing poultry production in Nigerian Katsina.

Lack of Housing expose the poultry to adverse Weather. Rain, Winds, Sun, and Cold, Including predator's like hawks, cats and even Human beings (thieves).

vii. Temperature: The best temperature in Katsina for poultry production depends on local weather condition. Excessive temperature in Katsina affects poultry production among others.

The study attempts to close the gap on how the poultry production is been assessing in the field of improving welfare and little of the people on the area and how the sectors are becoming very vital to the economy (Nwagu 2002) poultry production is the next only to ruminant as a source of animal protein in the area, that accounts for almost 25% of the local meat production in the economy.

Ogundipe, and Sanni, (2002) states that, poultry production has developed from the background business to a commercial oriented industry, that is producing more output and input to our economy, the study suggest that poultry production can be determine, by its contribution to the peoples economy.

Economists are more interested in intensive growth, which is expressed in the form of measuring the level of growth of output and input per worker (lab our productivity)

(Elsadig musa, 2006), the study also emphasize on how the production can be a productive sector that makes impact to the economy of the particular area.

2. 12 Theoretical Frame Work

For many years, economists have formulated a number of Economic models of inputs and outputs determination for instance, Buchanan et al, (1969) in the theory of resources output and input in production the theory below.

2.12. Input and Output Theory

The research work reviewed the theory made by Buchanan et al (1969). The theory revealed that, costs are calculated in units of resources Inputs and Outputs. This mean that, a specific resource outlay is required, an outlay that estimates in advance with some accuracy and measured ex-post either by the resource owner or by external observers, which serve as cost accountant. According to this theory, outputs depend on the Input variables, use in the production and this may lead to Economic Impact to the Investors and vice versa, while on

the current research the output is the outcomes of input putting by the farmers in order to generate their income I , the future time of their production.

Moreover, Wassily, (1974) in his theory of Economic Impact Analysis study the possible effects of an economic development project or investment, which estimate the returns to a business or a community, through inputs and outputs resource. This frame is shown below: the current study reveal that how the producer (farmer) is putting his money in order to get income through his business in the giving period of time.

Similarly, the poultry production system in Nigerian Katsina state, observed by the Researcher is quite similar with the above theory made by (Buchanan, 1969).

Moreover the research work tries to relate the calculated units of resource inputs and outputs which consequently determine the farmers' Economic impact. Therefore, in line with this theory the research work placed poultry production to determine the possible economic development achieved by each poultry farmer in the study area of Katsina.

Driven Income Growth model

The theory was developed by Mankiw, et al (1992), said that this model, due to the decreasing returns, when input (capital or labour) is increased, income is also expected to increase but also increase but at a decline rate. This indicated the movement a lone the individual productivity function curve showing the income growth gained from additional inputs.

2.12.2 Prior Research on Poultry Production Model

Recently, many researches were conducted in the area of poultry production due to the increasing number of poultry farmers around the globe in order to meet the increasing number of population and demand of product. Different method was employed by different researchers depending on the researchers' objective want to achieve. For example, Oladunni, et al. (2014) investigates the Economic Assessment of backyard poultry farming in Akoko North West Local Government Area of Ondo State, Nigeria. But the current study finds a gap to fill in from the previous study on economic assessment of backyard poultry production in Akoko North west. Similarly this research is to look at specifically on economic impact of poultry production in Katsina. Primary data were used and a sample of 152 backyard poultry owners through a multi stage sampling technique was drawn from the study. The data collected were analyzed using descriptive statistics, budgetary analysis and multiple linear regression models to analyses the determinants of backyard poultry

production given the input-output production relationships of the farmers. They presented the explicit function of the Double log regression models as:

$$\text{Log } Y_i = b_0 + b_1 \text{Log } X_1 + b_2 \text{Log } X_2 + b_3 \text{Log } X_3 + b_4 \text{Log } X_4 + b_5 \text{Log } X_5 + b_6 \text{Log } X_6 + b_7 \text{Log } X_7 + b_8 \text{Log } X_8 + b_9 \text{Log } X_9 + U_i$$

Y_i = Total revenue (TR) of the respondent i th; Log = natural log; U_i = error term; b_0 = intercept term; X_i = vectors of explanatory variables which are poultry farming experience (year), Major occupation (1 = poultry farming and 0 = otherwise), level of education (measure in category), household size (number); cost of labour (naira), cost of parent stock (naira), cost of feeds (naira), cost of medication (naira), depreciation cost on equipment (naira).

The result of multiple regressions showed that farming experience, education, costs of labour and feeds were the main factors that statistically determined backyard poultry productivity. Inadequate funds, unstable price, lack of access to extension services and expensive feeds were the major constraints encountering by the backyard poultry owners in the study area.

Simonyan, et al (2014), compared Economic of Small and Medium Scale Broiler Production in Umuahia South Local Government Area, Abia State, Nigeria. While the gap here is the current research is look at the economic impact of poultry production from the general perspective. Simonyan (2014) showed the multistage sampling technique was used to draw a total of 40 broiler farmers each for both small and medium scale respectively. Data were obtained using a structured questionnaire. Data analyses were done using descriptive statistics, farm budgeting and regression model. Descriptive statistics such as mean, frequency and percentages were used to analyze objectives I and IV. Net farm Income of Farm budgeting method was used to determine costs and return hence profitability (objective II). The model specification for the net farm income is as follows:

$$\text{NFI} = \text{TR} - \text{TC}$$

$$\text{TC} = \text{TFC} + \text{TVC}$$

Where

NFI = Net farm income

TR = Total revenue

TC = Total cost

TFC = Total fixed cost

TVC = Total variable cost

Objective III was analyzed using multiple regression analysis. Four functional forms were tried and the best fit was chosen. The implicit form of the model is indicated as

$$\Pi = f(X_1, X_2, X_3, X_4, X_5, X_6, X_7, X_8 + U)$$

Where

Π = profitability

X_1 = Farm size

X_2 = cost of birds

X_3 = number of mortality

X_4 = total cost of feed

X_5 = Depreciation cost on capital equipment

X_6 = Drug cost

X_7 = years of experience

X_8 = Scale of production (dummy variable; 0= Small-scale, 1=Medium scale)

U = Error Term

The Results show that, majority of the small and medium scale broiler farmers in the study area are between 41-50 years old respectively and have had 1-5 years of experience in broiler production. Costs and return analysis showed that broiler productions are more profitable among the medium scale than the small-scale farms with the net farm income of N1, 163,680.50 and N 453,934.47 respectively. Feed cost constituted the highest (25.04% for small and 34.49% for large scale) percentage of the total costs of production followed by the cost of chicks (23.31% for small-scale and 33.41% for large scale). The chow test result indicates a higher F-calculated value compared with F-table statistic value hence there is a significant difference in the profit level of the two enterprises as indicated by the budgetary analysis. The regression results revealed that the coefficients of flock size, cost of birds and number of mortality at 1% level of probability significantly determined the profitability of small-scale broiler farmers, for the medium scale cost of feed, flock size, cost of birds at 1% respectively and years of experience at 10% were significant in determining the profit level of broiler farmers in the study area. Inadequate fund was identified as the major problem facing small-scale broiler farmers while mortality problem was a serious challenge to the medium scale broiler farmers in the study area. It was therefore recommended that credit institutions be encouraged to make loan available to broiler farmers so as to improve their management practices and profit margin.

Emokaro, et al. (2014) examined the profitability in layers production from day old chicks to point of lay in Esan North East and Ovia North East Areas of Edo State. While the current studies emphasis is economic impact of the community not only the profitability of

the business unlike the previous research did. A simple random sampling of 135 poultry farmers was carried out in the study area in order to generate data for the analysis. The implicit form of the function is:

$Y = f(X_1, X_2, X_3, X_4, X_5, X_6, X_7, X_8, e)$. While the explicit

Form is:

$$Y = b_0 + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5 + b_5X_5 + b_6X_6 + b_7X_7 + b_8X_8 + e$$

Where: Y = Total revenue (Naira), X₁ = Labour (Naira), X₂ = starters mash (Naira)

X₃ = growers mash (Naira), X₄ = layers mash (Naira), X₅ = Medication (Naira), X₆ = Electricity consumption (in Kw/h), X₇ = Miscellaneous (charcoal, disinfectant, kerosene, transportation, wood shavings) (Naira), X₈ = Fixed cost (battery cages, boreholes, drinkers, feeders, poultry buildings, wheel barrows, etc.) (Naira), e = the error term.

The Result of the regression analysis show that three of the eight explanatory variables contributed significantly to income earned from poultry business; these are fixed cost (P < 0.10), layers mash (P < 0.01) and miscellaneous expenses (P < 0.05).

Saliu et al (2013) examined the adoption of recommended feeds for broiler production in Kogi State, Nigeria. Primary data were collected using structured questionnaire and interview schedule from 112 broiler producers. Multistage sampling technique was used to select 30 broiler farmers from four Local Government Areas in the four agricultural zones of Kogi state. Data analysis was carried out using Frequency counts, percentage, linear regression; adoption score and means score on a 3 point Likert – type rating scale. They specified regression model as:

$$Y = F (X_1, X_2, X_3, X_4, X_5, X_6, X_7, e_i)$$

The explicit functional form that was used for the data is as shown below.

Linear function

$$Y = b_0 + b_1X_1 + b_2X_2 + b_3X_3 \dots \dots \dots b_iX_i$$

Where

Y= revenue generated from broiler production

b₀ = Constant term

b₁ - b_i = Regression coefficient to be estimated

x₁ = adoption level of recommended feed (quantity of the various types of recommended feeds, measured in Kg).

x₂ = Education (measured in years)

x₃ = Farming Experience (measured in years)

x_4 = Family size (people living and feeding together)

x_5 = Contact with extension agent (number of visits within 1 year)

x_6 = Flock size (number of broilers kept by a broiler producer)

x_7 = Access to credit (loan for broiler production in Naira)

e_i = error term

The result revealed that adoption level of recommended feed, flock size, farming experience, educational status and access to credit facility were positively related to the revenue generated from broiler production with an R^2 of 0.921 and adjusted R^2 of 0.915. Adoption of recommended feed and flock size were both significant at 1% level of significance. The study further revealed that the adoption level of broiler starter and finisher feed kept on increasing each year with low level of adoption of grower feed. Constraints associated with broiler production using recommended feeds include inadequate facility to formulate recommended feeds with a mean score of 2.80, inaccessibility to credit facility (2.54), insufficient storage facility to keep broilers that were slaughtered to cut feed cost of matured broiler (2.54) and inadequate knowledge on feed formulation. Increase in knowledge of farmers on self-compounding of feeds is recommended to reduce cost and also ensure the quality of feed being served to the broilers. (Is this 99% significance?)

Al-fawwaz1 (2013) used the multiple regression models in determining the Economic efficiency of resource use in broiler farms in Jordan. The implicit form of the model, he used is as follows: $Y = f(X_1, X_2, X_3, X_4, X_5, X_6, X_7, U)$

Where

Y = quantity of broiler meat produced

X_1 = number of day old chicks

X_2 = labor input

X_3 = cost of veterinary services, drugs, and vaccines

X_4 = cost of feeds

X_5 = farmer experience

X_6 = farmer education level

X_7 = cost of poultry equipment

μ = stochastic error term

Among other fitted functional forms, the double log form was chosen based on goodness of fit depending on the highest value of adjusted R^2 and F-value. The form is presented below.

$$\ln Y = \ln \beta + \beta_1 \ln X_1 + \beta_2 \ln X_2 + \beta_3 \ln X_3 + \beta_4 \ln X_4 + \beta_5 \ln X_5 + \beta_6 \ln X_6 + \beta_7 \ln X_7 + \beta_n \ln X_n + U_i \dots \dots \dots$$

Where

\ln = Natural logarithm

β = constant

The results of his study revealed that the utilization of the investigated input factors was inefficient since the ratio of marginal value product and marginal factor cost (MVP to MFC) is more or less than unity for all the included inputs. Government should provide subsidized inputs to farmers along with proper extension services, which will help in enhancing productivity and profitability. In addition, subsidized credit facilities to farmers may catalyze this process. In addition, farmers need to adjust the usage of the resources, appropriately. Feed, labor, and equipment should be re-adjusted downwards.

Sani *et al* (2011), estimate the determinants of flock size in broiler production in kaduna State, Nigeria. Study the determinants of flock size broiler production in kaduna state but the current studies study economic impact of poultry production in Katsina in all area in poultry farming activities not determinant of part of it. Structured questionnaire and interview schedules were used to collect data from 120 broiler producers randomly selected from 10 purposively selected villages from the study area based on large number of producers in the area. The data were analyzed using frequency distribution and multiple regression analysis. The priori model for the socio-Economic factors and flock size regression analysis was formulated in this form as follows:

$$Y = f (x_1, x_2, x_3, x_4, x_5, x_6, x_7, x_8, X_9, e_i)$$

Where,

Y = Flock size

X₁ = Age

X₂ = Sex

X₃ = Marital status

X₄ = Household size

X₅ = Household income

X₆ = Years spent in school

X₇ = Years of broiler keeping experience

X₈ = Co-operative membership

X₉ = Major occupation

e_i = Error term

The semi logarithmic functional form selected is specified as:

$$Y = \alpha + \beta_1 \text{Log} X_1 + \beta_2 \text{Log} X_2 + \beta_3 \text{Log} X_3 + \beta_4 \text{Log} X_4 + \beta_5 \text{Log} X_5 + \beta_6 \text{Log} X_6 + \beta_7 \text{Log} X_7 + \beta_8 \text{Log} X_8 + \beta_9 \text{Log} X_9 + e_i$$

Where,

Y = Flock size

X_1 - X_9 = Variable inputs as already defined above

α = Intercept

β_1 = Regression coefficients

e_i = Error term.

Broiler production model

On the other hand, the production technology of the producers was specified by the Cobb-Douglas production as follows:

$$Y = \alpha X_1^{\beta_1} X_2^{\beta_2} X_3^{\beta_3} X_4^{\beta_4} X_5^{\beta_5} X_6^{\beta_6} e_i$$

In logarithmic form, the equation is of the form:

$$\text{Log} Y = \text{Log} \alpha + \beta_1 \text{log} X_1 + \beta_2 \text{log} X_2 + \beta_3 \text{log} X_3 + \beta_4 \text{log} X_4 + \beta_5 \text{log} X_5 + \beta_6 \text{log} X_6 + e_i$$

Where,

Y = Flock size

X_1 = Feed

X_2 = Family labour in day

X_3 = Hired labour per day

X_4 = Values of broilers produced

X_5 = Medication and utilities

X_6 = other costs

e_i = Error term

α = Constant or intercept

β_1 - β_6 = parameter estimates

The results of the study revealed that producers' household income, years of broiler producing experience, cooperative membership and major occupation showed direct relationship with their flock size and were significant at 1% test level. The number of years spent in school by the producers directly influenced their flock size and was significant at 5% test level. The producers' age, sex, marital status and family size showed an inverse relationship with their flock size but were not statistically significant. The results also

revealed that the producers' flock sizes were constrained by seasonal and irregular broiler demand which were mainly high during festivals (most especially at Easter, Sallah and Yuletide). High feed and chick cost, unavailability and untimely delivery of farm inputs and inadequate capital and poor extension services were other constraints. These constraints, if addressed, would lead to increase in broiler flock size in the study area and also increase the producers' disposable income and well-being.

Bamiro, et al (2008) focused on the Economic performance of the Commercial poultry farms in some selected Local Government Areas of Oyo State, Nigeria, Bamiro et al (2008) study economic performance of the commercial poultry farming while the current research study economic impact of poultry farming in general in order to fill in the gap between the previous research and the current one Data was collected from 71 farmers using purposive sampling technique. Production function was used to find the effect of production input on the value of output with the use of regression analysis. The Implicit form of the production function estimated for the sampled farms is presented as:

$$Y = f (X_1, X_2, X_3, X_4, X_5, X_6, X_7, X_8, X_9)$$

Where:

Y = Value of output

X₁ = Population of layers

X₂ = Population of broilers

X₃ = Population of cockerels

X₄ = Population of layers and broilers

X₅ = Population of layers and cockerels

X₆ = Population of broilers and cockerels

X₇ = Feed 25 kg bags

X₈ = Number of workers

X₉ = other operating expenses

The result of the study shows that the profitability of poultry enterprise is a function of enterprise combination as well as scale of production. The budgetary analysis shows that in all enterprise combinations, farmers that operate on large scale have highest gross margins. On the basis of enterprise combinations, the egg production enterprise records the highest gross margin while the broiler production enterprise records the lowest gross margin. The regression analysis shows that flock size, feed, and labour have significant positive effects on the value of output while interaction between layers and broilers has negative impact on the value of output. In the allocation of all the variable inputs the poultry

farmers are not efficient. The regression analysis shows that flock size, feed, and labour have significant positive effects on the value of output while Interaction between layers and broilers has negative Impact on the value of output. In the allocation of all the variable inputs the poultry farmers are not efficient.

Bandara1, et al (2006), in their quantitative analysis on factors affecting profitability of small-scale broiler production in Sri Lanka, bandara et aal (2006) study the quantitative analysis on the factors affecting profitability of scale broiler production in sri lanka but the current research study the economic impact of poultry production in general not some part of it in order to fill the gap in the research. Data were collected form 120 broiler rearing farmers. The factors considered in the model were Sale price of broiler (SLR/kg LW), Price of purchased chick (SLR/chick), Price of feed (SLR/kg), Cost of labor (SLR/kg LW), Cost of veterinary service and medicine (SLR/LW), Feed Conversion Rate - FCR (kg feed consumed per kg LW gain). A multiple regression analysis was used to estimate the model. The model used can be depicted as

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

Y: Profit

X₁ Sale price of broiler

X₂: Price of purchased chick

X₃: Price of feed

X₄: Cost of labor

X₅: Cost of veterinary service and medicine

X₆: Feed Conversion Ratio - FCR

The researchers observe that, in field the most Important Factors affecting profit in this study were the feed conversion ratio and the price of feed. It was also found that except the cost of labor all the other factors were significant in the model and thus were the determinants of the profitability. The fact that the Estimated Impact factors affecting profitability on the profit per kg live-weight were similar to those observed in the field indicates the power of the model as a decision support tool in broiler production.

Based on the above prior research on poultry production this research also tend to utilized the descriptive statistic and multiple regression analysis in Analyzing Economic impact of poultry production in Katsina state Nigeria

2.13 HISTORICAL DEVELOPMENT OF NIGERIAN ECONOMY

The Nigerian economy is one of the most developed economies in Africa. According to the United Nations (UN) classification, Nigeria is a middle income nation with developed financial, communication and transportation sectors. It has the second largest stock exchange in the continent.

The petroleum industry is central to the Nigerian economic profile. It is the 12th largest producer of petroleum products in the world. The industry accounts for almost (80%) of the gross domestic product (GDP) share and above (90%) of the total exports. Outside the petroleum sectors, the Nigerian economy is highly unbalanced and lacks basic infrastructure, several failed efforts have been made after 1990 to develop other industrial sectors.

Nigeria with a population of about 165 million is grossly underprovided with essential food components, which is protein. For example, data from the FOS, CBN, and FOA, indicates that from cattle less than 2 kg of beef is available to an average Nigerian per year and just mere 4 kg of egg per person is available to each Nigerian. The livestock of poultry production subsectors is an important component of the Nigerian agricultural economy, its importance derives from the fact that it is one of the key contributors to the national economy. For example, using the (1984) factor based data, the subsector contributes UN an annual basis a little over (5%) of the total gross domestic product (GDP) between (1996) and the year (2000).

Poultry farming in Nigeria is as old as industry can remember spanning from a period of hunting and gathering, to that of subsistence backyard poultry farming, in order to meet the protein requirement of the family.

In Nigeria, poultry production can be divided into three main sectors namely small medium and large scale production with (25%) being provided by commercial farms (15%) semi and (60%) from backyard.

The two major events that have been recorded in the industry have been the ban on the importation of frozen poultry products, which was introduced in (2003), and deepened the market for poultry products in Nigeria and Avian Influenza of (2007), which affected the industry on a negative note.

The ban according to the importation of frozen chicken into Nigeria has not only created jobs in the poultry industry but also encourages investment in the poultry production.

2.12.4 BRIEF HISTORICAL DEVELOPMENT OF KATSINA ECONOMY

Katsina state was created on (23rd September 1987), out of the defunct Kaduna State. The State is situated in the Extreme Northern part of the Country with two emirate Councils, Katsina and Daura, The state share border with Kaduna State in the south, jigawa and Kano state on the east, zamfara and Sokoto States on the West, as well as an International border with Niger Republic on the north.

Katsina State, is a Mono Lingual and Mono Ethnic State, the people are hausa/fulani. The State Occupies an area of about (29,938 square kilo metre) with the projected Population of (5,267 million), people. It lies between (Latitude 11.7 “and 13, 32N and longitude 6.52”and 902”E).

There are thirty four Local Government Council Comprising Bakori, Batagarawa, Batsari, Bindawa, Baure , Charanchi, Dandume, Danja, Danmusa, Dutsinma, Dutsi, Faskari, Funtua, Ingawa, Jibia, Kafur, Kaita, Kankia, Kankara, and Katsina as the State Capital other are Kurfi , Kusada, Mai adua, Malumfashi, Mani, Mashi, Matazu, Musawa, Rimi, Safana, Sandamu, and Zango .

The Weather varies according to the Season of the year but mostly it is cool in the morning, hot in the afternoon and cool again in the evening, the dusty harmattan weather last between November to February with well below average temperature.

The wind is dry from January to April, signaling the arrival of rainy season. The season last from June to October.

The major Economic activity of the State is Agriculture, which is the main economic activity of the people of the state. Both farming and rearing of animals occupy the lives of about (80%) of the total population of the state. Both food crops and cash crops are produced in large quantities. Some of the crops grown are Maize, Cotton, Grand nut, Guinea corn, Millet, Rice, Beans, and Soya Beans. The range of Livestock is essentially cattle; sheep, and goat, poultry farming was also among. During the dry Season, people engaged themselves in irrigation and purely poultry farming activities, mostly they did their irrigation farming in fadama and river basin area in their detouring areas. Local craft (blacksmithing, pottery etc) are also practical.

Other economic activities available in the area through in limited scope are banking, transportation, small-scale enterprises, commerce and fishing to mention but few. Katsina is accessible by road, air and with communications network comprising telephone, post office, courier service and global system of mobile communications. There are three TV Stations and three radio stations which broadcast throughout the State.

The livestock Department is charged with the responsibilities of providing of all necessary amenities needed for the improved of livestock production for both present and future time generations. Also the department rehabilitates and Increase the intake of livestock and poultry farming training schools for both theoretical and practical of scientific animals husbandry and health care in general for delivery towards livestock production in the area.

The department has a version of providing livestock and poultry chicken feeds as age, water for them as a qualitative and quantities of meat and milk produce to the increase population. Provision of sufficient table egg and poultry meat and improve the knowledge of the termini youth in the field of livestock production and criminal's health care for self-employment all towards boosting livestock production.

In the area of livestock, Katsina is endowed with many types of animal's breads. The major types of livestock includes cattle, goat, camels, donkey, poultry (layers, broilers, chick, turkey, guinea fowl) etc.

Research Gap

Many researches were conducted globally in line with poultry production but they failed to include the Economic Impact. The current research was able to fill the gap and by constructing the research topic that can address the Economic Impact of poultry production in Nigerian Katsina state, through an established frame work to address the Input, Output and Economic Impact.

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Introduction

The chapter contains the main source of data, data procedure analysis and model specification that include the relevant Economic Impact of Poultry Production in Nigeria Katsina state.

3.1 Research Framework

As it was indicated in chapter two, the theory reviewed in this research work was made by Buchanan, et al (1969); the theory revealed that, costs are calculated in units of resources Inputs and Outputs. This means that, a specific resource outlay is required, an outlay that estimates in advance, with some accuracy and measured ex-post either by the resource owner or by external observers which serve as cost accountant. According to this theory outputs depend on the Input variables used in the production and this may lead to Economic Impact to the Investors and vice versa.

Moreover, Wassily, (1974), in his theory of Economic Impact Analysis study the possible effects of an economic development project or investment, which estimate the possible returns to business or a community through inputs and outputs resources.

3.2 Model Specification

Since the interest of this research is to investigate the economic impact of poultry production in Katsina state Local Government area, the model were specified in order to achieve the research objectives

$$Y = f (FE, OCC, LED, CL, CPS, CF, CM \text{ and } EQ)$$

Where:

Y = total revenue of the respondent, FE= farming experience, OCC= occupation, LED = level of education, CL =cost of labour, CPS= cost of parent stock, CF = cost of feed, CM = cost of medication and EQ= equipment

Therefore, the regression analysis was used to analyze the poultry production given the input-output production relationships of the farmers. The explicit function of the Double log regression models was specified in Econometric form below.

$$\text{Log } Y_i = b_0 + b_1 \text{Log } FE + b_2 \text{Log } OCC + b_3 \text{Log } LED + b_4 \text{Log } CL + b_5 \text{Log } CPS + b_6 \text{Log } CF + b_7 \text{Log } CM + b_8 \text{Log } EQ + U_i$$

Y_i = Total revenue (TR) of the respondent; Log = natural log; U_i = error term; b_0 = intercept term; While b_1 to b_8 are coefficient of explanatory variables. However b_1, b_2, b_3, b_5 and $b_8 > 0$, while b_4, b_6 and $b_7 < 0$

3.3 Methods of Data Analysis

The data were analyzed using descriptive statistics such as means, standard deviation, percentages to analyze the socioeconomic characteristics, management practices, constraints to poultry production in the study area. The multiple linear regression models were employed to analyze the productivity of poultry production i.e. Economic Impact.

3.4 Research Design

The research work approached is quantitative by using survey and a design questionnaire. To have the clear picture and true knowledge of the problems of my research area in order to formulate my research instrument for data collection. Therefore, my research topic is Economic Impact of poultry production in Nigeria Katsina State; the research was design to respect three different aspects.

The use of primary data through structured questionnaires and use of secondary data like academic journals and books on poultry production, agricultural textbooks, newspapers and others relevant material. Similarly the result analysis can be done by the use of STATA 11 software package and discussion of the finding was highlighted.

3.5 Questionnaire Design

The research instrument is designed to collect information from the respondents by using four points' likert scales, from strongly disagree to strongly agree.

3.6 Research Site

This research work is sited to takes place in Katsina, in order to assess the poultry farming in the area for economic growth and its sustainable development. Katsina, community was located in the state capital of the state. Katsina was founded by Hausa/Fulani. And Fulani conquest has been an important seat of leaving in the caliphate. It provide some of the earliest education center of the northern Nigeria, Katsina town, is among the largest ones in the northern part of the country is also area of indigenous Hausa and Fulani speaking people. The local government area occupies an area of about 3,370 square kilometers.

According to national population commission (NPC, CENSUS, 2006) Katsina town, is made up of 2,853,305 people. The most re- known economic activities, in the area is agriculture. The economy of about 80% of the area is derived from farming and livestock rearing. The fertility of the soil allows them to produce both cash and food crops, such as maize guinea corn, millet and groundnut. People also domesticate animals like poultry, cattle etc. including the production of broilers, layers and other occupation, such as, and Agricultural aspect in the area. This is because these products are essential and are requires in urban areas in order to meet the over growing population resulting from rural urban drifts. Farmers knowledge in this area has been denied that not only its production of cash crops can give them more income generating abilities, but also its production of farm animals, especially poultry product (eggs and meat) at low price, because of their ability to domesticate poultry in the area. Katsina was an old city in northern Nigeria, 160 miles east of the city of Sokoto and 84 miles or 167 kilometers NW of Kano close to the border with Niger republic latitude 13⁰N, longitude 7.41 E.

3.7 Research Population

The target population to be use in this research is mainly numbers, of the poultry farmer mostly staying in the areas, the adults who are practicing the program fully in the area was 285 out of which 162 farmers were selected based on Kejcic and Morgan (1970) sample (sampling) techniques. But from this number the author of this research use cluster random sampling techniques to select the reasonable population representatives.

3.8 Sample

The respondents of the study are to be selected from four areas within the study that research is cover are as follows.

1. Kofar kwaya katsina area.
2. Kofar marusa gidan dava lay out katsina
3. Shagari Low Cost Sabon Fagi Katsina
4. Kofar yan daka katsina.

3.9. Pilot Test

To have valid and reliable data and instrument for the data collection, the research is able to adopt the questionnaire framing style use by (Lim ying ying) in his thesis topic “Empowering the Semai people through participation in community development program.” The researcher was also gone for pilot test, in order to test the questionnaire applicability or otherwise in the case may be. More so, validity and reliability also needs to be tested by piloting the questionnaires.

3.9.1 Research Instrument

The instrument used for data collection is two types: primary source like questionnaire, Discussion and field observation. While the secondary source of data to be used includes academic journals text, book.

3.9.2. Data Collocation Procedure

Before conducting the research, a survey technique is going to be observed prior to the time of data collection. The researcher is present himself to the community and poultry farmers for the first time as familiarization tour and during this tour he might wish to visit the poultry site. This will create a good rapport between the researcher and the poultry farmers. Basically, during the data collection period, the interviews helped to ensure that the questionnaire developed answers needed in accordance with the stated objectives.

3.9.3. Measurement

The questionnaire was structured to four basic sections: section one consist of demographic backgrounds of the respondent, section two types of poultry farming, while section three was designed to measure cost of inputs variables of the poultry farmers. Section four designed to measure the economic impact of poultry production on the farmers.

3.9 .4. Definition of Variables

a. Economic Impact

Economic impact can be defined as a macro economic effect on commerce, employment, or incomes provided by a decision event, or policy (Robert, et al (1997)). It also examines the effect of an event on the economy in a specific area. Ranging from a single neighborhood to the entire globe, it usually measures changes in business revenue, business profits, personal wage, and or jobs (Glen, et al,(1997)).

The economic event analyzed can include implementation of a new policy or project, or may simply be the presence of a business or organization (Glen, 1997). An economic impact analysis is commonly coordinated when there is public concern about the potent rate impact of a proposed project or policy.

An Economic Impact typically measures or estimates the changes in Economic activity between two scenarios, one assuming the Economic event occurs, and the second assuming it does not occur as the counterfactual case. (Glen, 1997). According to event impacts media said Economic Impact is the measurement has become a powerful and persuasive tool, for those looking to capture an evidence of the financial benefits that can result from the hosting of a major event. According to Glen, et al. (1997) in their paper in Economic Research development Group journal 1997 said economic Impact are the effect on the level of economic activity in a given area.

Measuring economic impact not only allows public sectors bodies to evaluate their economic return on investment. But also demonstrate how events drive economic benefits allowing event. Organizer develops practices which maximize these benefits. The economic impact of a major event refers to the total amount of additional expenditure generated within a defined area, as a direct consequence of staging the event. For most events, spending by visitor in the local area (and in particular on accommodation) is the biggest factor in generating economic impact. However spending event's organizer is another important consideration economic impact studies typically seek to establish the net change in a host economy in other words cash flow and out flows are measured to establish the net outcome.

b. Poultry Farming

Poultry farming is the raising of domesticated birds such as chickens, turkeys, ducks, and geese, for the purpose of farming of meat or eggs for food. Poultry production farmed in great numbers with chickens being the most numerous with chickens being the most numerous. More than 50 billion chickens are raised annually as a source of food. For their meat and eggs, (Austic, et al. 1990.)

Poultry production is an important and diverse component of any country agriculture. Poultry products including eggs, chickens and turkey meat are healthy part of diet of most in Nigeria. In 2009, nearly 145,615 farms were producing poultry and the products (broilers and turkey, NASS USDA) while broilers chickens production is concentrated primarily in the western and southern part of the country. Turkey production

occurs primarily in northern part of the country while eggs production is distributed throughout the country. . (Austic, et al. 1985)

Modern poultry production occurs primarily in enclosed building to protect the bunds from wild birds. This has allowed farmers to greatly increase production efficiency which significantly reducing the amount of labor regard. As with pork production, this has resulted in environment changes with production of layer volumes of manures in much smaller areas United State Environmental Protection Agency (UEPA 1992).

c. **Input**

Input is term denoting either an entrance or changes which are inserted into a system and which activate or modify a process, it is an abstract concept, used in the modeling, system design and system exploitation. It is usually connected with other terms, e.g. input field, input variables, input Para meter. Input value signal, input port, input device and input file (Wassily, et al. 1986).

Input refers to advice opinion or recommendation offered as a guide to action, conduct. in other words input can be regarded as the resources such as people, raw materials, energy, information, or finance that are put in to a system such as an economy, manufacturing plant, computer system to obtain a desired output.

Input can be defined as a something put in a system or expanded in its operation to achieve output or a result especially energy work, or power used to drive a machine (Wassily, eta al. 1986).

d. **Output**

Output is the term denoting either an exit or changes which exit a system and which activate /modify a process. It is an abstract concept used in the modeling systems design and systems exploitation (Wassily, et al. 1986).

In economics, output is the amount of goods and services produced by a person, machine, firm, industry, or country etc. During a specific time period, such as a year a distinction is drawn between gross output and net output.

3.9.5 Research Tools For Analysis

Research Objectives

Tools of Analysis (Statistics)

To Identify the background of the respondents	D e s c r i p t i v e s t a t i s t i c s
To determine the level of poultry production, input and output (economic impact)	D e s c r i p t i v e s t a t i s t i c s
To determine the relationship between input and output(economic impact)	R e g r e s s i o n A n a l y s i s

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1 Introduction

This Chapter is concerned with the Presentation, Analysis and Interpretation of data from the Fields as per the survey Questionnaires. Descriptive Statistics were first presented and then followed by the multiple Regression results. A total numbers of 100 questionnaires were administered.

Descriptive Statistical Analysis

In this study, the final sample of 100 participants was analysed by using descriptive statistical analysis. This analysis provides an insight into the distribution of the participants' information because inability of the other respondent to respond fully.

About (54%), of the respondents were female, indicating that female dominate the enterprise. The probable reason is because women has adequate time to stay at home, that give them chance in taking good care of birds at home more than male most especially rearing of the local birds serve as a pet and hobby to the old women. This result was in contrary to many findings in the literature such as Amos, (2007), was in the view of males household dominate poultry farming in the eastern Nigeria.

Moreover, under marriage category respondents about (68%) were married, indicating that married households were more involved in backyard poultry farming than unmarried households. While the (32%) of the respondents were not married. This study shown the married people were more involved in poultry farming then unmarried people. Because, the married house wife has more time and chances to monitor and care the backyard poultries. This study was supported by results finding shown in (Amos, 2007; Maikasuwa, et al. 2011) that married farmers were more involved in backyard poultry farming than unmarried farmers.

Majority of the respondents (77%) had been in backyard poultry business for at least 6 years' and above this implies that the sampled respondents were well groomed and experienced in the enterprise. Similarly, (23%) were the respondents who have (≤ 5 years' experience). Similar research was investigated the compare Economic of Small and Medium Scale Broiler Production in Umuahia South Local Government Area, Abia State, Nigeria by Simonyan, et al

Under education of the respondents, results show that about (70%) of the sampled respondents are educated and had at least primary school education. This is an Incentive for adoption of innovations vis-à-vis development in the enterprises. While, only (30%) were no formal educated farmers. similar finding conducted in the southern part of Nigeria by Nwosu(2012) indicated that majority of the farmers were educated to the level of at least primary school leavers.

Majority of the poultry owner's household (59%) had a large family size according to the grouping in the Table 4.1 more than 5 persons per house). This has been a good source of labour in the study area .more over a research was conducted in other part of the country in order to compare the small and large size of the poultry farmers size of the family or even their income by Simonyan, et al (2014), compare Economic of Small and Medium Scale Broiler Production in Umuahia South Local Government Area, Abia State, Nigeria.

Result from the finding show that, small members of less than five (≤ 5) has (41%) and are the minority from the respondent. While large members in family size are (5) has (59%). This results finding indicates farmers with large family size were participate more than the small family size. This finding supports research work of (Emaikwu *et al.*, 2011), who opined that large family size has more benefit in poultry farming, because family size can serve as work force that supply the most needed labour required for production activities in the study area.

Only few of poultry owners (38%) took poultry production as their major occupation while (62%) had another occupation to support their livelihood, such as other livestock's, crop farming, civil servant, trading among others.

Table 4.1: Personal and Socio-Economic Characteristics of Sampled Respondents

S e x	Number		Percentage (%)	
M a l e	4	6	4	6
F e m a l e	5	4	5	4
M a r i t a l s t a t u s				
S i n g l e	3	2	3	2
M a r r i e d	6	8	6	8
Poultry farming experience (year)				
≤ 5	2	3	2	3
> 5	7	7	7	7
L e v e l o f e d u c a t i o n				
N o n f o r m a l e d u c a t i o n	3	0	3	0
P r i m a r y s c h o o l e d u c a t i o n	2	7	2	7
S e c o n d a r y s c h o o l e d u c a t i o n	2	9	2	9
T e r t i a r y e d u c a t i o n		9		9
O t h e r s		5		5
F a m i l y s i z e				
S m a l l (≤ 5 m e m b e r s)	4	1	4	1
L a r g e (> 5 m e m b e r s)	5	9	5	9
P r o d u c t i o n a s a m a j o r o c c u p a t i o n				
Y e s	3	8	3	8
N o	6	2	6	2
T o t a l	1	0	0	1
	0	0	0	0

Source: Computed from Field Survey Data, 2014

4.2 Management Practices in Poultry production

The management practices among poultry owners are examined and detailed are show in table 4.2 below. Type of birds reared was posed to the poultry owners and multiple choices were allowed because most of them combined different types of bird for different purposes. It was revealed that majority of the respondents (60%), reared layer birds. The probable reason for high demand was due to the dual purposes of the layer bird. They start the rearing earlier so that they can get enough eggs before the end of the year when they will sell them for meat purpose, during the festive periods. The result also showed that (22 %), of the respondents reared broiler birds followed by local birds (10%), and then cockerel birds (8%). Broiler bird, according to the respondents would have been preferred due to the fact that broilers mature earlier and give high turnover than the other types of birds, but it is very prone to disease and other environment attacks. Majority of the owners (47%) had a small flock size due to inadequate capital to run the business in large quantity. moreover similar research was carry out in other part of the country in order to investigate profitability of layers production by Emokaro, et al. (2014).

Table 4.2: Distribution of the respondent's management practices

Types/ species of birds reared	F r e q u e n c y	Percentage (%)
L o c a l b i r d s	1 0	1 0
B r o i l e r s	2 2	2 2
C o c k e r e l s	8	8
L a y e r s	6 0	6 0
F l o c k s i z e		
Small (less than 50 birds)	4 7	4 7
Medium (50 – 249 birds)	2 8	2 8
Large (250 and above birds)	2 5	2 5
T o t a l	1 0 0	1 0 0

Source: Computed from Field Survey Data, 2014

4.3 Profitability Analysis of Poultry productions in the Study Area

The average production of poultry types are two (2), that is the local birds' farmers and the modern poultry farming techniques. But it should be noted that those rearing local birds could not really give exact value because most of them practice free-range system and there is no record for the birds. It is revealed in Table 3 that the average total production cost per bird was N3, 987.52 while the average total revenue was N4, 210.11 per bird in the study area. The average total variable cost took 98.63% of the average total production cost with the cost of feeds being the highest (91.81%). It implies that feeding is very germane in the production of backyard poultry and the owners believed that when you feed the bird well, it will reflect in the final yield. Miscellaneous and labour costs contributed 3.52% and 2.68% to the production costs respectively. Costs of water, medication and parent stock contributed to 0.09%, 0.14% and 0.39% respectively. Therefore, given the gross margin and net farm income of N537.99 and N222.59 per bird respectively, indicated that backyard poultry farming is very profitable. Again, the value of BCR of 1.06 which implies that the owner will realize N1.06 on each naira expended. This further confirms the profitability of backyard poultry business. Moreover similar research was carry out in other part of the country in order to investigate profitability of layers production by Emokaro, et al. (2014).

Table 4.3: Profitability of Poultry Production per bird in the Study area

A v e r a g e c o s t s	A m o u n t (=N=)	P e r c e n t a g e (%)
a. V a r i a b l e s c o s		
C o s t o f f e e d	2 , 1 0 4 . 0 2	9 1 . 8 1
C o s t o f l a b o u r	6 1 5 . 9 1	2 . 6 8
C o s t o f p a r e n t s t o c k	8 9 . 1 4	0 . 3 9
C o s t o f m e d i c a t i o n	3 2 . 3 4	0 . 1 4
C o s t o f w a t e r	2 0 . 7 1	0 . 0 9
M i s c e l l a n e o u s	8 1 0 . 0 0	3 . 5 2
T o t a l v a r i a b l e c o s t	3 , 6 7 2 . 1 2	9 8 . 6 3
b. F i x e d c o s		
D e p r e c i a t i o n c o s t o f e q u i p m e n t	3 1 5 . 4 0	1 . 3 7
T o t a l f i x e d c o s t	3 1 5 . 4 0	1 . 3 7
T o t a l c o s t	3 , 9 8 7 . 5 2	1 0 0
T o t a l r e v e n u e	4 , 2 1 0 . 1 1	1 0 6 . 1 1

G r o s s m a r g i n	2	2	2	.	5	9
N e t f a r m i n c o m e	2	2	2	.	5	9
Benefit – cost – ratio (BCR) = TR/TC	1				0	6

Source: Author's Computation, 2014.

4.4 Production function analysis for backyard poultry production

The total revenue accrued from the backyard poultry production was regressed against inputs and socio-economic characteristics in order to determine factors contributing to/responsible for the productivity of the business. The R^2 -value of 0.678 implied that the regressor accounted for 67.8% of the variations in the output while the F-value (4.57), was significant and therefore implies that all the predictors considered for the analysis jointly exerted significant influence on the output of the poultry production.

The result revealed that backyard poultry experience and level of education had a positive coefficient and statistically significant in influencing output. It means that any increase in their value, will increase backyard poultry output. It explicitly indicated that the higher the number of years in backyard poultry production couples with advancement in the level of education would definitely Increase and boost production efficiency vis-à-vis output. In other way round, costs of labour and feeds had a negative coefficient and significant in explaining output. It implies that any increase in their value will reduce output.

Therefore, in order to maximize output, cost of labour and feeds must be minimized in the course of backyard poultry production. Similar study was conducted by Bamiro et al (2008) in order to investigate the economic performance of the commercial poultry farms in some selected Local Government Areas of Oyo State, Nigeria. In addition to that, another research was conducted on people participation, social capital and empowerment on fadama user groups (FUGs) in kankara local community by Aminu, et al. (2014) the results shown that participation and social capital regress to empowerment at ($r=.396$, $p=.000$) which shows that, there is significant positive relationship between the two variables.

Table 4.4: Estimated production function for backyard poultry farmers in the study area

V a r i a b l e s	Coefficient	Standard error	P – v a l u e
Farming experience	2 . 8 8 *	0 . 8 0	0 . 0 0 1
Major occupation	1 2 . 3 1	9 . 7 8	0 . 1 0 9
Level of education	3 . 8 0 *	1 . 7 9	0 . 0 4 1
Cost of labour	- 6 . 8 4 *	3 . 3 5	0 . 0 3 1
Cost of parent stock	7 0 . 9 2	1 3 3 . 4 5	0 . 9 5 0
C o s t f e e d s	- 1 9 . 9 2 *	9 . 4 7	0 . 0 4 3
Cost of medication	- 1 . 3 6	1 . 2 3	0 . 1 0 1
E q u i p m e n t	1 . 1 6	1 . 6 4	0 . 7 1 0
C o n s t a n t	- 7 0 . 1 8	1 9 2 . 4 4	0 . 9 7 3

$R^2 = 0.678$; Adjusted $R^2 = 0.598$; F-value = 4.57*, * = Significant at 5% level

Source: Computed from Field Survey Data, 2014

4.5 Problems militating against backyard poultry production

The distribution of the respondents based on the challenges facing by the backyard poultry owners was shown in the Table 5. A list of problems that was gathered from the literature was posed to the respondents to tick as applicable to them and multiple choices were allowed. Out of ten (10) problems identified, an in adequate fund (98%) was ranked highest as the problem encountered by the sampled respondents. It was observed during the interview that all of them were emphasizing on lack of loan and there is no enough financial institution in the communities that are ready to lend out money, as a result, this is affecting the business. Instability of price and market problem was ranked second and it said that price of birds always fall after the festive periods (“eldil fitr and eldil akbr”), period and there is no ready market for the birds in the study area. Lack of extension service and government support was ranked third in the list. They complained that government does not make the environment conducive for the rearing of backyard poultry production and hardly do they see extension agents that are supposed to be intermediary between the farmers and government. Expensive feeds and irregularity in supply, extreme weather and high costs of medication were ranked fifth, sixth and seventh in the identified problems. Theft (8th) was said to rampant during the festive periods most especially the local birds. Litter materials (9th) were scarce because the wood shavings that were using are now used for cooking;

therefore make it not available and competitive. Cannibalism was the least problem mentioned and this category belongs to those that keep birds in deep litter house.

Table 4.5: Distribution of the respondents by problems militating against backyard poultry production in the study Area

C o n s t r a i n t s	F r e q u e n c y		P e r c e n t		R a n k
I n a d e q u a t e o f f u n d s	9	8	9	8	1 ^{s t}
Expensive medication, failure of veterinary drugs and vaccines	5	3	5	3	6 ^{t h}
Expensive feeds and irregularity in supply	6	8	6	8	4 ^{t h}
D i s e a s e s o u t b r e a k	44		4	4	7 ^{t h}
Lack of access to extension service and government support	9	3	9	3	3 ^{r d}
P r i c e i n s t a b i l i t y a n d m a r k e t	9	7	9	7	2 ^{n d}
T h e f t	4	3	4	3	8 ^{t h}
C a n n i b a l i s m	2	3	2	3	10 ^{t h}
E x t r e m e w e a t h e r	5	9	5	9	5 ^{t h}
C h a n g e o f l i t t e r m a t e r i a l s	4	0	4	0	9 ^{t h}

Source: Computed from field survey data, 2014.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATION

5.0 SUMMARY

The research work finally summarized that, despite the important role of poultry farming among the people of Katsina community. The respondent and field observation shown that there are problems which can be stated as follows: The issues include the problem of the respondent's background, which may occur due to low level of literacy. This means that, there is a low level of literacy among the participants, and there is problem of knowing the required level of inputs that can determined the Economic Impact among the participating members. There is problem of knowing the required number of poultry bird that can easily be manage and taking care of effectively, for quality and quantitative output, for Economic Impact, directly to the general wellbeing of the members. These are consequently what attribute to poor Economic growth.

In addition to that, among other problems include the problem of marketing, poor electricity, good road networks, fencing and ventilating cage and Extension workers.

Similarly the Researcher use descriptive statistics such as means, standard deviation, percentages to analyze the socioeconomic characteristics, management practices, constraints to poultry production in the study area. The multiple linear regression models were employed to analyze the productivity of poultry production i.e. economic impact.

The study investigates the Economic Impact of poultry production in Nigeria Katsina State, based on the total number of 285 poultry farmers in the area in which out of the total, 100 poultry farmers are selected based on the random sampling technique. The respondents of the study were selected from four areas within the Area under study; namely: Kofar Kwaya area Katsina, Kofar Marusa, Gida Daya Lay Out Katsina, Shagari Low Cost, Sabon Fegi Katsina and Kofar "Yan" Daka Katsina.

The data is analyzed, using descriptive statistics to analyze the socioeconomic characteristics, management practices, constraints to poultry production in the study area. The multiple linear regression models are employed to analyze the productivity of poultry production i.e. economic impact.

The empirical findings based on the regression analysis indicates that, backyard poultry experience and level of education had a positive coefficient and statistically significant in influencing output. It means that, any increase in their value, will increase backyard poultry output. It explicitly indicates that, the higher the number of years in

backyard poultry production, couples with advancement in the level of education would definitely increase and boost production efficiency, vis-à-vis output. In other way round, costs of labour and feeds had a negative coefficient and significant in explaining output. It implies that any increase in their value will reduce output.

Lastly the research work recommends that, government and non-governmental organization, should work together in ameliorating the problems, for the general wellbeing of Katsina state.

5.1. Conclusion

The study investigates the Economic Impact of poultry production in Nigeria, Katsina State. Observe that the enterprise was profitable, despite the constraints affecting the poultry owners in the study area. Poultry farming experience and level of education increases the productivity of the enterprise significantly, while costs of labour and feeds are significantly reduced, in order to maximize output. Therefore, poultry owners should pay close attention to these factors, in order to boost poultry production. The amount spent on labour should be drastically reduced, while local feeds can be encouraged among the poultry owners, by using concentrates feed stuffs, like dried cassava peel and rice bran, so that the costs expended on the two variables can be reduced, in order to boost poultry productivity.

5.2 Recommendations

Based on the findings of this research, it indicated that, working experience and level of education have positive impact on poultry production, in the study area. Therefore, any individuals who want to engage in poultry farming in the study area need to learn the process of poultry farming before investing his resources in to the system.

More so, the finding indicates that, poultry farmers face challenges of funds, prices of market, and extension services. It is therefore recommended that, government should establish agricultural banks close to the farmers, with minimum interest rate and as well as help the poultry farmers in stabilizing the price and create conducive market environment ,most especially during the festive periods.

Competent extension workers should be employed to visit and enlighten poultry owners on the technicality of production processes and how they can formulate feeds for their birds. This will not only enhance the skills of the farmers but also create employment opportunity mainly to the youth and profoundly increase their incomes.

Moreover, poultry farmers should therefore pay close attention to the factors (especially costs of labour and feeds), in order to boost poultry production. The amount spent on labour should be drastically reduced, while local feeds can be encouraged among the poultry owners by using concentrates feed stuffs like dried cassava peel and rice bran, so that the costs expended on the two variables can be reduced in order to boost poultry productivity.

Since the poultry farming is profitable in the study area government should encourage farmers to engage in poultry farming, by providing favorable environment which have a multiplier effect on poverty reduction in the area.

5.3 Policy Implications and Recommendation

The result of this study implies that young people has dominate the poultry production in Katsina. Therefore, the study is recommending the policy makers and community leaders to encourage the ageing population to participate in this project. Because it requires less energy only that the ageing group can employed working class to take care in the production site.

Moreover, the results of the finding shows those, about 54% of the respondents were female, indicating that females dominate the enterprise. The probable reason is because females has enough time in taking good care of birds at home more than males most especially rearing of the local birds. Author of the current study recommends to the policy makers (governmental and non-governmental organizations), to encourage the males to participate actively in poultry farming, for the general wellbeing of the community.

Majority of the respondents (77%) had been in backyard poultry farming for at least 6 years. This implies that, the sampled respondents are well groomed and experienced in the enterprise. Moreover, the policy makers should encourage the use of out sketch settlement area and improve the size and location for poultry production for economic wellbeing.

Educational factor, indicate that, 70% of the sampled respondents are educated and had at least primary school education. In line with this, government and non-governmental organization should encourage those with higher learning education qualification in this program. This may reduce the rate of unemployment in the country.

Result of this study shows that, there is a problems related to lack of fund, instability of price and market problem, good medical care and health personnel. Therefore, government and non-governmental organization should try to improve and ameliorate these problems for farmers and country economic growth.

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APPENDIX I
TRANSMITTED LETTER FOR RESPONDENT
ALMADINAH INTERNATIONAL UNIVERSITY, MALAYSIA

Dear Respondent,

I am a student from the Faculty of Finance and Administrative Sciences, Department of Economics, Almadinah International University, Malaysia; Presently working on a master's thesis to find out the Economic Impact of poultry production in Katsina Local government Area, Katsina-State, Nigeria. Therefore, I kindly solicit for your sincere response in attempting the questionnaire.

Similarly, your responses will be treated with high confidentiality and your privacy will be ensured. Nothing will be reported on individual basis, as well as the responses will be reported in numerical form only.

Thanks for your cooperation and sincere responses on the designed questions, May ALLAH bless you-Ameen.

Thanks.

Yours faithfully,

Badamasi sani Mohammed

M.Sc. Candidate

Almadinah International University Malaysia (MEDIU)

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RESEARCH TOPIC:

ECONOMIC IMPACT ON POULTRY PRODUCTION IN KATSINA LOCAL GOVERNMENT AREA OF KATSINA STATE-NIGERIA

APPENDIX II

PROFILE OF RESPONDENT

RESPONDENT'S BACKGROUND.

1. Origin: - (a) indigene [] (b) settler []
2. Age: -
3. Ethnicity: - (a) Hausa [] (b) Fulani [] (c) others []
4. Gender: - (a) Male [] (b) female []
5. Religion:- (a) Islam [] (b) Christian [] (c) Traditional []
6. Education:- (a) primary [] (b) secondary [] (c) tertiary []
(d) Others (specify):
7. Marital Status: - (a) Single [] (b) married []
(c) Widow/widower []
8. Main occupation: - (a) civil servant [] (b) self-Employed []
(c) Not employed { }
9. Monthly estimated income of the Respondent...
.....
.....

APPENDIX III
POULTRY FARMING

INSTRUCTION: Choose from the options provided and make a [tick] inside the Column given. We need your kind and sincere Response to each Statement given below.

Key options: { 1- Strongly Agreed 2- Agreed, 3- Not Agree, 4- Strongly not Agreed }.

NO		[1]	[2]	[3]	[4]
1	Modern poultry farming has an economic impact than others				
2	Traditional poultry farming has an economic impact				
3	Chickens poultry farming has an economic impact among the participating members				
4	Broilers poultry farming has more economic impact than layers				
5	Layers poultry farming has more economic impact ahead of broilers				
6	Broilers disposed less than two month is more lucrative				
7	It is economic risk when layers exceed twenty weeks before they start production				
8	Intensive management system has economic impact				
9	Extensive management system is more of economic impact				
10	Semi intensive management system has more economic impact on the participating members				
11	Breeding of chickens can attract more profits				
12	Using modern poultry feeds can improve economic impact among the members				
13	Regular cleanness of the farm can improve economic impact among the members				
14	Regular vaccination of birds can improve the economic impact of members				

15	Water replacement regularly can improve the economic and health impact of poultry farming for members				
16	Isolation of the infected birds can improve the economic and health impact of poultry farming				
17	Spraying the environment against infectious diseases can improve the economic impact of poultry farming				
18	Spraying the workers and any equipment coming in the farm can improve the economic and health condition				
19	Ventilation and humidity is good in attracting the economic impact for members				
20	Lighting condition can improve the economic impact of				
21	Chickens spacing can improve the economic impact for farmers				

INPUT VARIABLES

INSTRUCTION: Choose from the options provided and tick one inside the Column given.

We need your kind and Sincere Response to each Statement given below.

Key options: {1- Strongly Agreed 2- Agreed, 3- Not Agree, 4- Strongly not Agreed}.

NO		[1]	[2]	[3]	[4]
1	The number of chickens put under management can improve the economic impact				
2	Cost of feeding may affect the economic impact of poultry				
3	Cost of poultry cage may improve the economic impact				
4	Cost of vaccine may improve the economic impact output				
5	Cost of land on poultry farm can improve the economic impact				
6	Cost of labor in the poultry farm can improve the economic impact				

ECONOMIC IMPACT

The Economic Impact of poultry Farming in your Area is? { 1- Strongly Agreed 2- Agreed, 3- Not Agree, 4- Strongly not agreed}.

NO		[1]	[2]	[3]	[4]
1	Poultry production can improve economic condition of the members				
2	Poultry production can reduce the rate of poverty of the members				
3	Poultry production can improve the standard of living of the members				
4	Poultry production can improve the supply of food and security of the members				
5	Poultry production can improve the levels of income of the members.				
6	Poultry production can boost the market size of their products				
7	poultry production can help in boosting the country gross domestic product				
8	Poultry production can help to fight unemployment among the members				

E: Do you have any additional comment, observation or contribution to offer on how to improve your activities?

.....

.....

.....

.....

Thanks you for your sincere cooperation in answering the above questions, May Allah reward you-Ameen.

CURRICULUM VITAE
ISA KAITA COLLEGE OF EDUCATION DUTSINMA KATSINA
STATE NIGERIA P.M.B 5007
TEL: 08098187938, 08022187938
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BADAMASI SANI MOHAMMED

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[Dates Attended] [Institution Name]

Master of Economics (MSC Economics)

Al-madinah, International University, Sha Alam, Salangor, Malaysia. 2011-2015

Teachers Registration Council Certificate

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Computer Intensive programme in 2004

Bayero University Kano 2004

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Senior Secondary School Examination 1996

Army Day Secondary School Bukawu Barracks Kano

Primary School Certificate 1990

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WORKING EXPERIENCE

Lecturer I in Isa Kaita College of Education Dutsinma 2007 to
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