Journal of Economics and Sustainable Development
ISSN 2222-1700 (Paper) ISSN 2222-2855 (Online)
Vol.6, No.3, 2015

Economic Analysis of Poultry Production in Tando Allahyar District Sindh

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Abstract
Poultry sector is one of the effervescent segments of agriculture industry in Pakistan. This sector generates employment and income for about 1.5 million people. Its contribution in agriculture growth is 4.81% and in Livestock growth 9.84%. Poultry meat contributes 19% of the total meat production in the country. The current investment on poultry industry is above Rs. 200 billion. Poultry sector has shown a robust growth at the rate of 8-10% annually, which reflects its inherent potential. The study was design to investigate economic analysis of poultry farm production, major objectives of the study were to asses' financial gain from poultry production, primary data on poultry farms was collected from the farmers through personal interviews with the help of specially designed questionnaire. A simple random sampling technique was used to collect the data. Statistical techniques like means, comparison of means and frequency distribution was used for production cost and yield analysis. On an average total fixed cost was Rs. 111500.00, labour input cost includes Rs 168000.00 on an average per farm poultry farmer spent labour cost of production. This included Rs. 20000.00 on Supervision (weekly visit), Electrician(when problem) Rs.4000.00, Feedings Rs. 40000.00, Cleaning Rs. 40000.00, Watchmen Rs. 50000.00, Drinkers Rs. 22000.00 and Spraying(weekly spray) Rs. 6000.00 respectively. Selected poultry farmers in study area on average per farm spent on marketing cost was Rs. 134000.00. This included Rs. 24000.OOfor loading, Rs. 86000.00 for transportation and Rs. 24000.00 of unloading. On an average per farm total cost of production was Rs. 679756.00 and obtained physical productivity 7212 live birds and 12560 eggs whose revenue productivity was Rs. 1096500.00 and net income was Rs. 326744.00, cost benefit ratio of the cultivation of poultry at 1:0.48 it means that the poultry farmers obtained Rs. 0.48 on each rupee invested by them. High profit was observed in poultry farming.

Introduction

Poultry sector is one of the effervescent segments of Agriculture Industry in Pakistan. This sector generates employment and income for about 1.5 million people. Its contribution in agriculture growth is 6.4 % and in Livestock growth 11.5 %. Poultry meat contributes 25.8 % of the total meat production in the country. The current investment on poultry industry is above Rs. 200 billion. Poultry sector has shown a robust growth at the rate of 8-10% annually which reflects its inherent potential. Share of poultry meat in beef and mutton and production of commercial and rural poultry for the last three years. . It envisages poultry sectors growth of 15-20 percent annually (GOP, 2013).

Poultry is the domesticated species of bird reared for production of eggs and meat. Even though, term poultry is used for chickens, duck, guinea fowl and geese. Poultry is an important sub sector of live stock and its important can be judged from the fact that poultry share in GDP is 2.0 percent. It emerged as check and balance force for stability of the prices of beef and mutton. Poultry production has emerged as a good substitute of beef and mutton. The importance of it can be judged from the fact that almost every family in rural area and every fifth family in urban area is associated with production activities in one way or the other (GOP, 2012).

The poultry farming on commercial scale was initiated in Pakistan in 1963, with introduction of new hybrid strains of birds for meat and eggs production. Commercialization of poultry production started in 1965, when the first modern hatchery was established at Karachi by Pakistan International Airlines in collaboration with a Canadian firm “shaver”. Since then a rapid expansion occurred in commercial poultry production resulting in the establishment of more and more broiler and layer farms, hatchery units and feed mills in the private sector. The total investment in the poultry, hatcheries and feed mills was Re.1.2 billion which, increased to Rs.5 billion in 1986 and Re. 20 billion in 1992 showing a tremendous rate of increase. Government of Pakistan has invested Rs.57 billion in poultry sector up to year 2001 (Chaudhry, 2001).

The poultry industry is providing job opportunities to more and more people. Chicken meat production is playing effective role in decreasing the gap of the animal protein availability and its requirement. Poultry meat is one of the universally accepted superior sources of protein with high biological value containing relatively

higher amount of essential amino acids in 3 well balanced forms. In addition to, it also contains other essential nutrients including minerals and vitamins. Poultry farming provides a great opportunity for the increased production of high quality birds in the shortest possible time. Credit goes to poultry breeders who have developed the modern commercial broiler, which attains marketable weight within a short span of 6 to 7 weeks (M.A, 2009).

The daily availability of protein quantity per capita in Pakistan amounts to 13.6 gram, deriving from animal source including beef, mutton, poultry and fish. According to the World Health Organization standards the required daily dietary protein allowance from animal source is 27 grams whereas we have much less than this. In our Country per capita consumption of meat is only 5 kg and 40-45 (PPA, 2012).

Birds are transported to the urban market and are sold to retailers or market-street poultry shops. Birds are sold on live-weight basis. The time spent in getting broilers from the farm to the retail shop is brief. Although collection and handling of birds has improved with the use of loader vehicles, but it is an established fact that greater the distance between the poultry producer and consumer, more complicated is the marketing system including their collection, handling and transportation to the consumer or processing plants. The processing plant produces dressed chicken (slaughtered and cleaned) however a very small amount of dressed chicken is available in the local retail market. The integrated processing units distribute frozen and dressed chicken packed in whole or cut-ups to the consumer through retail shops under their brand names (SMEDA, 2013).

The poultry industry of Pakistan is making tremendous in bridging the protein gap between the supply and demand with the continuous depletion of supply of red meat. Until 1964; poultry production was a cottage industry in Pakistan. The Govt: laid special emphasis on the development of poultry industry in the country during 1965-1975. A good poultry scientist should have the knowledge of every aspect of poultry, farmer to be well informed about vaccination, manage mental programmers and bio-security measures, some poultry diseases are more effectively or economically controlled by vaccination (Zaibun, *et al.* 2013).

Poultry is arguably the most important subsector of Pakistani agriculture in terms of affordable food supply. It is one of the well-developed and vibrant segments of national economy growing at a robust 8-10% annually as opposed to 4% growth rate of livestock sector. Poultry sector provides direct and indirect employment to 1.5 million people in Pakistan. Poultry meat contributes 25.8% of overall meat production in the country and the share is increasing. In Pakistan, poultry farming is generally being practiced either as urban commercial intensive farming or as rural free-range farming. Poultry farming started in Pakistan on commercial basis in the 1960s. Poultry industry has very important backward and forward linkages with other sectors and industries. Poultry meat and eggs take little time to produce and market and, as such, poultry is a profitable business. Poultry industry can be divided into three components: poultry farming, hatcheries, and chicken feed mills (SBI, 2011).

Ever increasing pressure on broiler producers to decrease cost of production and improve profit margins require decision making processes that offer a number of alternative courses of action. The choice of any course of action involves identification of a problem, evaluating the alternative courses of action and choosing the most appropriate of these. Whilst experience and experiments are useful tools to use in arriving at decisions, they are no longer completely accurate as the sole method employed since the broiler has changed dramatically over time; and feed formulation on the basis of type of feed, ingredient forms and many aspects need change accordingly (Gous, 2007).

Provision of adequate food to their inhabitants and assure an atmosphere free from hunger and malnutrition is the responsibility of a civilized government. The food security objective becomes more important when 15-20% of the world population is not getting sufficient food to meet minimum nutritional requirements for a healthy and productive life (Anonymous, 1998).

Development of the awareness of poultry welfare was primarily focused on cage housing system of layer hens in the past. Regulations were issued at national and international level which banned use of cage system of housing, and defined production systems which are based on animal friendly, human relation to animals. Welfare of farm animals contributes to perception of the quality of products by consumers which are advocating that maintenance of high welfare standards results in high quality of products (Sundrum, 2001).

The main objective of present research study was to find out income relationship in the poultry farming in Tando Allahyar. It particular aims to appraise the production process as followed on the sample poultry farms operating around Tando Allahyar area with a view to examine economic behavior of commercial poultry farms.

Objectives

The specific objectives of the study are:

1. To describe socio-economic characteristics of the poultry farming in the study area
2. To estimate physical productivities and net returns on poultry farming in district Tando Allahyar.
3. To identify issues and suggest policy measures for promoting on poultry farming in the study

area.

METHODOLOGY

This study is based on primary data, which was collected from poultry farming in district, Tando Allahyar, Sindh. A detailed questionnaire was constructed to explore the research objective. A random selection of poultry farming in district, Tando Allahyar, Sindh was carried out to insure the generalization of research finding. The sample of 60 poultry farms growers which equally distributed among different categories of farmers from different areas of in district, Tando Allahyar, Sindh.

Data collection and analysis

The selected respondents were interviewed through a well designed questionnaire prepared for the purpose. Question was asked from the respondent (farmers) in a face-to-face situation. The interview schedule was prepared in English and asked in Sindhi (local language) from private fish farms.

The data thus, collected were fed to computer for analysis. The coded data was analyzed through Statistical Package for Social Sciences (SPSS) version 14.00. Analysis were done by using Statistical techniques like means, comparison of means and frequency distribution to draw the conclusions and interpret the research findings and to suggest measures for improvement.

Resource Classification

Economics generally classify resources employed to production function into four categories, which are termed as land, labour, capital and management. As a matter of fact, management is also a labour resource. In view of this, the resources allocated to wheat production function developed to analysis the data collected from selected farms will be $y = f(x_1, x_2, x_3, \ldots\ldots x_n)$ The 'y' refers to the single commodity which may be produce, $(x_1, x_2, x_3, \ldots\ldots x_n)$ refer to land, labour and capital inputs etc. while 'f' denotes the production function.

Estimation of Land Inputs

For estimation of land inputs for poultry farm on the sample farms, the following formula was used.
Fip=(As x Cr) + As x Rui) / As.
Where ,
Fip=Farm input per unit of poultry.
Af=Area farm under poultry farming.
Cr=Contract rent per farm.

Estimation of Labour Cost

The extent of labour inputs for various cultural operations involved in poultry production will be estimated by applying the following formula:
Fip=(Mn) +Mwd x Wr) + (Bwd) / As.
Where,
Fip=Farm input per unit of poultry.
Mwd= Man work day.
Wr=Wage rate
Af=Area farming under poultry.

Estimation of Capital Inputs

The following formula will be used to compute per unit (farm/unit) cost of the capital inputs.
Cipu=(Qs x Pr) + (Of x Pr) + Qi x Pr) / As.
Where .
Cipu=Capital inputs per unit of poultry farming
Qs=Quantity of seed used.
Pr=Price per unit of input.
Qf=Quantity of food.
Qm=quantity of medicine.

Marketing Cost

The marketing costs will be estimated by using the following formula:
Mc=Qm (RL + Tr + RuL / As

Where ,
Mc=Marketing cost.
Qm=Quantity of produce marketed.
RL=Rate of loading.
Tr=Transportation rate.
RuL=Rate of unloading of poultry.
Af=Area farm

Estimation of Returns
The estimation of returns will be developed by using the following formula:
VP=(Qs x Pr) / As
Where,
VP=Value of Product.
QS=Quantity Sold.
Pr=Price per unit.

Total Cost of Production
Total cost of production was estimated by using the following formula:
TC=TFC+TVC
Where,
TC = Total Costs of Production

Net Returns
Net returns were estimated by using the following formula:
NR = TI- TC
Where,
NR = Net Returns
TI = Total Income
TC = Total Cost

Input-Output Ratio
The input-output was estimated by using the following formula:

$$IO_R = \frac{T1}{TC}$$

Where IOR = Input-Output Ratio

Cost-Benefit Ratio
Cost-Benefit Ratio was estimated by using the following formula:

$$CBR = \frac{NR}{TC}$$

Where,
CBR = Cost Benefit Ratio

Results
The study area was Tando Allahyar of Sindh, Pakistan. The study is described into two subsections.
1. Socio-economic characteristics of the poultry farming.
2. Economic analysis of the poultry farming Socio-Economic Characteristics

Age
Age is very important demographic factor which influences the efficient allocation of resources'. More aged people are more skillful and experienced than the less age people.

Table 1: Distributions of the respondents according to their age in the study area

Age	No. of farmers	Percentage
21-30 years	13	21.66
31-40 years	15	25.00
41-50 years	19	31.66
More than 50 years	13	21.66
Total	60	100

Table-1 shows the association of the age of the respondents with the percent of poultry farmers in each age group. In age group of 21-30 years, 21.66% of the poultry farmers. In age group of 31-40 years, 25.00% of the poultry farmers. In age group of 41-50 years, 31.66% of the poultry farmers. With more than 50 years old farmers' percentage of poultry farmers are 21.66%. Since advancing age helps gain more experience thus the fanners can better take care of their poultry farm including the overall reproductive performance as well.

Family size

Fundamental social groups in society are typically consisting of one or two parents and their children.

Table 2: Distributions of the respondents according to their family size in the study area

Family size	No. of farmers	Percentage
5-10 Members	15	25.00
11-15 Members	28	45.66
More than 15 Members	07	11.66
Total	60	100.00

Table-2 shows about the family size of the respondent. Their family size of 5-10 members and they had 25.00% of the poultry farmers, 11-15 Members and they had 45.66% and More than 15 Members they had 11.66% of the poultry farmers.

Education

It is expected that education has a positive effect on the behavior of farmers about the adoption of new innovations and improved technologies

Table 3: Distribution of the respondent according to their education level in the study area

Education level	No. of farmers	Percentage
Illiterate	13	21.66
Primary	15	25.00
Middle	20	33.33
Matriculation	10	16.66
Collage / University	02	3.33
Total	60	100.00

Table-3 reveals that slightly 21.66% farmers were illiterate, while about 25.00% poultry farmers were Primary level of education; the 33.33% were middle, 16.66% of matriculation and 3.33 poultry farmers were bachelor/master education in the study area.

Farming experience

Farming refers to a gaming tactic where a player, or someone hired by a player, performs repetitive actions to gain experience, points or some form of in-game currency. Farming usually involves staying in a game area with a spawn point that generates endless numbers of items or enemies. The player collects the items or continuously kills the enemies for the experience, points and currency

Table 4: Distributions of the respondents according to their farming experience in the study area

farming Experience	No. of farmers	Percentage
Up to 10 years	25	41.66
11-20 years	08	13.33
21- 30 years	15	25.00
Above 30 years	12	20.00
Total	60	100.00

Tabl- 4 shows the respondents having farming experience of up to 10 years; they had 41.66% of the poultry farmers. Those with 11-20 years of farming experience had 13.33% of poultry farmers with 21-30 years of farming experience possessed 25.00% of poultry farmers. 20.00% famers with more than 30 years of farming experience.

Occupation

Occupations are physical possession or use of a dwelling or piece of land. Occupation exists only where it is recognizable as such, and where the occupant has a sufficient measure of control that prevents interference from strangers.

Table 5: Distributions of the respondents according to their major occupation in the study area

Occupation	No. of farmers	Percentage
Farming	48	80.00
Farming+ Shopkeeper	04	6.66
Farming + Job	08	13.33
Total	60	100.00

Table-5 indicates wither the respondents are involved full time in farming or they devote some time to other occupations. When full time is devoted to farming, certainly the reproductive performance of such poultry would be much better 48 of the respondents were devoting their time only in farming which was their major occupation also and they had 80.00%of the poultry farmers. 13.33% of the respondents were engaged in their jobs as well as in farming. 6.66%of the respondents were engaged in the business /shops.

Working time hours

Working time is the period of time that an individual spends at paid occupational labor. Unpaid labors such as personal housework or caring for children/pets are not considered part of the working week.

Table 6: Distributions of the respondents according to their working time hours in farming in the study area

Working Time	No. of farmers	Percentage
Up to 5 hrs	07	11.66
6-10 hrs	44	73.33
11-15 hrs	09	15.00
Total	60	100.00

Table-6 shows about the number of working hours spent in fields by the respondents. 44 of the respondents were spending 6-10 hours in their fields and they had 73.33% of the poultry farmers. 07 of the respondents spent up to 5 hours in their farming activities and had 11.66% of the poultry farmers. While only 09 of the respondents were spending 11-15 hours in their fields having 15.00% of the poultry farmers. Most of the respondents were spending 6-10 hours in poultry farming activities.

Farm Size/Capacity

A farm is an area of land. It is the basic production facility in food production. Farms may be owned and operated by a single individual, family, community, corporation or a company.

Table 7: Distributions of respondents according to farm size in the study area

Farm size (No of birds)	No. of farmers	Percentage
Small (1000)	17	28.33
Medium (1001-3000)	29	48.33
Large (3001 – above)	14	23.33
Total	60	100.00

Table-7 shows about the number of small farm were 28.33%, 48.33% and 23.33% were medium and large farm in the study area.

Farmer Status

A farmer is a person engaged in agriculture, raising living organisms for food or raw materials. A farmer might own the farmed land or might work as a laborer on land owned by others, but in advanced economies, a farmer is usually a farm owner.

Table 8: Distributions of respondents according to farmer status in the study area

Farmer status	No. of farmers	Percentage
Owner	19	31.6
Rent	41	68.4
Total	60	100.00

Table-8 Shows that there were 31.6% farmers who have owner ship and the remaining 68.4% are those, who have hired their farms on rent.

Hygienic

Hygiene is a set of practices performed for the preservation of health. While in modern medical sciences there is

a set of standards of hygiene recommended for different situations, what is considered hygienic or not can vary between different cultures, genders and etesian groups. Some regular hygienic practices may be considered good habits by a society while the neglect of hygiene can be considered disgusting, disrespectful or even threatening.

Table 9: Distributions of respondents according to Hygienic

Particulars	No. of farmers	Percentage
Good	08	13.33
Satisfactory	13	21.66
Poor	21	35.00
Very poor	18	30.00
Total	60	100.00

Table-9 shows about the respondents were categorized in four different categories on the basis of hygienic conditions on their farms. That 13.33% farmer is rearing birds in good hygienic condition, 21.66% in satisfactory, 35.00% in poor and 30.00% very poor hygienic condition.

Disinfectants

Disinfectants are substances that are applied to non-living objects to destroy microorganisms that are living on the objects. Disinfection does not necessarily kill all microorganisms, especially resistant bacteria spores; it is less effective than sterilization, which is an extreme physical and/or chemical process that kills all types of life. Disinfectants are different from other antimicrobial agents such as antibiotics, which destroy microorganisms within the body, and antiseptics, which destroy microorganisms on living tissue. Disinfectants are also different from biocides the latter are intended to destroy all forms of life, not just microorganisms. Disinfectants work by destroying the cell wall of microbes or interfering with the metabolism.

Table 10: Distributions of respondents according to Disinfectant methods in the study area

Particulars	No. of farmers	Percentage
Spray chemicals	23	38.33
Fumigation	21	35.00
Not practiced	16	26.66
Total	60	100.00

Table-10 shows that more than 38.33% farmers spray chemicals for disinfection purpose. It also presents that 35.00% farmers used to fumigate for disinfection purpose. It was also reported that 26.66% farmers do not exercise any such practice to disinfect their farm.

Mortality rate

Mortality rate is a measure of the number of deaths (in general, or due to a specific cause) in a population, scaled to the size of that population, per unit of time. Mortality rate is typically expressed in units of deaths per 1000 individuals per year; thus, a mortality rate of 9.5 (out of 1000) in a population of 1,000 would mean 9.5 deaths per year in that entire population, or 0.95% out of the total. It is distinct from morbidity rate, which refers to the number of individuals in poor health during a given time period (the prevalence rate) or the number of newly appearing cases of the disease per unit of time (incidence rate). The term "mortality" is also sometimes inappropriately used to refer to the number of deaths among a set of diagnosed hospital cases for a disease or injury, rather than for the general population of a country or ethnic group. This disease mortality statistic is more precisely referred to as "case fatality rate" (CFR).

Table 11: Distributions of respondents according to Mortality rate in the study area

Mortality rate (%)	No. of farmers	Percentage
05.00	8	13.33
08.00	7	11.66
10.00	12	20.00
12.00	8	13.33
15.00	6	10.00
20.00	10	16.66
20.00 above	9	15.00
Total	60	100.00

Table-11 shows that mortality rate varies from 5 to 20 above percent on the respondent's farm. It appears that 13.33% farmers who report 11.66% mortality rate. 20.00% report 13.33% mortality, 10.00% report 16.66% % farmers and reportl5.00 % mortality.

Mortality Causes

The quality or state of being a person or thing that is alive and therefore certain to die the quality or state of

being mortal and the death of a person, animal.

Table 12: Distributions of respondents according to Mortality Causes in the study area

Mortality causes	No. of farmers	Percentage
Viral / parasitic diseases	20	33.33
Air quality / temperature control	17	28.33
Low grade chicks	23	38.33
Total	60	100.00

Table-12 shows that mortality causes recorded from the respondents .it reveal that 33.33% farmers respond that Viral/Parasitic diseases are the main causes of mortality, 28.33% farmers high lights Air Quality/Temperature Control are responsible for birds mortality and 38.33% mentioned that low grade chicks is the reason of birds mortality.

Emergency situation

Poultry production is a risky business because its deals in live birds. Majority of the poultry farmers usually faced some sort of emergency situation during the production cycles. Emergency situation faced by respondents in the farming are emergency situation of viral diseases, unreliable market and markets related problems.

Table 13: Distributions of respondents according to emergency situation faced in the study area

Emergency situation	No. of farmers	Percentage
Diseases	18	30.00
Unreliable market	27	45.00
Markets related problems	15	25.00
Total	60	100.00

Table-13 shows that there are 30.00% farmers who faced various Diseases as emergency, 45.00% farmers mentioned unreliable market rate and market related problems were the emergency situation during their farming 25.00% farmers have not faced any such situation during the poultry farming.

Fixed Cost

A cost that does not change with an increase or decrease in the amount of goods or services produced. Fixed costs are expenses that have to be paid by a company, independent of any business activity. It is one of the two components of the total cost of a good or service, along with variable cost.

Table 14: Distributions of respondents according to fixed costs in the study area

Particulars	Mean	S.D. Error
Farm rent	65000.00	355.00
Equipment expenditure	46500.00	430.00
Total	111500.00	785.00

Table-14 indicated that on an average per farm rent poultry farmer spent a sum of Rs. 111500.00 in study area. This included Rs. 785.00 for Equipment Expenditure of farm.

Labour Inputs

An indicator characterizing the expenditure of labor expressed in man-hours on a production of a given consumer value or on a technical operation. The reciprocal of labor productivity, labor input measures the efficiency with which labor power, one of the main production resources, is used. The magnitude of the indicator is influenced by a number of factors, including the technological level of production (capital available per worker, power available per worker, usefulness of objects of labor).

Table 15: Distributions of respondents according to Labour Inputs in the study area

Particulars	Mean	S.D. Error
Supervisor (weekly visit)	20000.00	400.00
Electrician (when problem)	4000.00	100.00
Feedings	40000.00	200.00
Cleaning	40000.00	180.00
Watchmen	50000.00	240.00
Drinkers	22000.00	135.00
Spraying (weekly spray)	6000.00	80.00
Total	168000.00	1335.00

Table-l5 depicted that the Rs 168000.00 on an average per farm poultry farmer spent labour cost of production. This included Rs. 20000.00 on Supervision (weekly visit), Electrician (when problem) Rs.4000.00, Feedings Rs. 40000.00, Cleaning Rs. 40000.00, Watchmen Rs. 50000.00, Drinkers Rs. 22000.00 and Spraying(weekly spray) Rs. 6000.00 respectively in the study area.

Marketing costs

Marketing costs are those expenses which are incurred by the farmers when poultry birds move from the producing farm (farm gate) to the final consumers for the disposal of their production, the farmers it included number of expenses on transportation, loading, unloading and commission charges.

Table 16: Distributions of respondents according to marketing cost

Particulars	Mean	S.D. Error
Loading	24000.00	120.00
Transportation	86000.00	375.00
Unloading	24000.00	120.00
Total	134000.00	615.00

Table-16 it is clear from result that each selected poultry farmers in study area on average per farm spent a sum of Rs. 134000.00. This included Rs. 24000.00 for loading, Rs. 86000.00 for transportation and Rs. 24000.00 of unloading.

Capital inputs

Capital has been defined as material goods used in further production. Capital may be defined as that part of wealth, which is used for further production of wealth. It is the capital that yields a farm entrepreneur to determine the type of farming amongst various substitutes. Capital is a factor of production, which possesses some distinct characteristics. The volume of capital can be increased or decreased. Capital plays a strategic role in boosting up o the productivity. Certainly a farm entrepreneur would like to invest capital in a type of farming from which he expects high turnover. Capital also determines the role of technological innovation in agriculture, which results in the increase of output, decrease in the cost or both.

Table 17: Distributions of respondents according to capital inputs

Particulars	Mean	S.D. Error
Chicks	737560.00	833.00
Feeds	106500.00	286.00
Vaccine / medicine	32000.00	96.00
Electricity	26000.00	75.00
Fumigation and spraying	28000.00	73.00
Total	266256.00	1363.00

Table-17 the result indicated that each selected poultry farmers of study area on an average per farm of poultry spent a sum of Rs. 266256.00. That included Rs. 73756.00, Rs.l06500.00, Rs.32000.00, Rs.26000.00 and Rs.28000.00 on Chicks, Feeds, Vaccine/Medicine, Electricity and Fumigation & Spraying respectively.

Total Cost of Production

Businesses that know their production costs know the total expense to the production line, or how much the entire process will cost to produce the item. If costs arc too high, these can be decreased or possibly eliminated. Production costs can be used to compare the expenses of different activities within the company. In production, there are direct costs and indirect costs. For example, direct costs for manufacturing an automobile are materials such as the plastic, metal or labor incurred to produce such an item. Indirect costs include overhead such as rent, salaries or utility expense.

Table 18: Distributions of respondents according to total cost of production

Particulars	Mean	S.D. Error
Chicks	737560.00	833.00
Feeds	106500.00	286.00
Vaccine / medicine	32000.00	96.00
Electricity	26000.00	75.00
Fumigation and spraying	28000.00	73.00
Total	266256.00	1363.00

Table-18 showed that the selected poultry farmers in study area on average per farm spent a total cost of production of Rs. 679756.00. T his included Rs. 111500.00, Rs. 168000.00, Rs. 134000.00and Rs. 266256.00 on fixed cost, labour costs marketing costs respectively on capital inputs.

Physical Productivity

The production when expressed in terms of physical weight is known as physical productivity. It is generally expressed in terms of per farm of production obtained.

Table 19: Distributions of respondents according to Physical productivity

Particulars (No)	Mean	S.D. Error
Live birds	5412	216
Eggs	12560	344

Table-19 it is clear from the result each poultry farmers obtained physical productivity 7212 live birds and 12560 eggs.

Revenue Productivity

The value of farm production of gross profit it refers to money income accruing to the farmers from the sale of their production. It is calculated by multiplying the physical productivity obtained with the price, it is sold. For the purposes of economic analysis, the revenue productivity at sample poultry farms in the study area was also calculated the same formula for each individually farm and then the averages per farm were derived.

Table 20: Distributions of respondents according to Revenue productivity

Particulars	Mean	S.D. Error
Live birds	975780.00	740.00
Eggs	109500.00	365.00
Total	1096500.00	1105.00

Table-20 shows that the each selected poultry farmer in study area on an average per farm earned of Rs. 1096500.00 that included Rs. 987000.00 on Live Birds and Rs. 109500.00 on eggs obtained by the farmers of poultry.

Net farm income

Net farm income is gross profits remains cash operating expenses and depreciation cost of machinery and equipments costs could be obtained by subtracting the gross revenue from cash operating expenses. Net income actually represents the reward of the entrepreneur for producing a specific. Net income Averages output or gross income after subtracting all farm expenses. Net income is calculated to judge the efficiency of farm business as a whole.

Table 21: Distributions of respondents according to Net farm income

Particulars	Mean	S.D. Error
Gross income (Rs) A	1096500.00	1105.00
Total expenditure (Rs) B	679756.00	4089.00
Net Income (Rs) A-B=C	326744.00	5194.00

Table-21 the result cleared from the table that each poultry farmer on an average per farm earned during study, Rs. 326744.00 on net income, Rs. 1096500.00 on gross income and Rs. 679756.00 on total expenditure in the study area

Productivity ratio

Productivity is the ratio of output to inputs in production; it is an average measure of the efficiency of production. Efficiency of production means production's capability to create incomes which is measured by the formula real output value minus real input value.

Table 22: Distributions of respondents according to Productivity ratio

Particulars	Gross income (Rs)	Total expenditure (Rs)	Input-output ratio
Farm	(A)	(B)	A/B = C
1	1096500.00	679756.00	1:1.61

Table-22 show that the selected poultry farmers on an average per farm earned Rs. 1096500.00 on the inputs at Rs. 679756.00 in study area. Therefore they availed input output ratio of 1:1.61 from poultry farming in the study area; it means that with the investment of Rs.1.00 in poultry enterprises they yielded Rs.1.61 in the study area.

Cost Benefit ratio

A benefit-cost ratio (BCR) is an indicator, used in the formal discipline of cost-benefit analysis. That attempts to summarize the overall value for money of a project or proposal. A BCR is the ratio of the benefits of a project or proposal, expressed in monetary terms, relative to its costs, also expressed in monetary terms. All benefits and costs should be expressed in discounted present values. Benefit = Total revenue before deductions The BCR = Benefit/Cost where > 1 is good

Table 23: Distributions of respondents according to Cost Benefit ratio

Particulars	Net income (Rs)	Total expenditure (Rs)	Cost benefit ratio
Farm	(A)	(B)	A/B = C
1	326744.00	679756.00	1:0.48

Table -23 shows that the cost benefit ratio of the farming of poultry at 1:0.48 it means that the poultry farmers obtained Rs. 0.48 on each rupee invested by them in the study area.

Discussion

The purpose of this study was to investigate the economic analysis of poultry production in Tando Allahyar district, Sindh. The study was based on primary data, which was collected from poultry (Broiler) farming in district, Tando Allahyar, Sindh. A random selection of poultry (Broiler) farming in district, Tando Allahyar, Sindh was carried out to insure the generalization of research finding. The respondent selection from the selected area of in district Tando Allahyar Sindh was based on the simple random sampling technique. From the sample of 60 poultry (Broiler) farms growers, which equally distributed among different categories of farms from different areas of in district Tando Allahyar Sindh. Analysis was done by using Statistical techniques like means, comparison of means and frequency distribution etc. Result shows about the number of small farm were 28.33% having 1000 Birds, 48.33% 1001-3000 were medium and 23.33% were having 3001 and above Birds were large farm in the study area, whereas according to farmer status there were 31.6% farmers who have owner ship and the remaining 68.4% are those, who have hired their farms on rent. Mortality rate varies from 5 to 20 above percent on the respondents' farm. It appears 13.33% farmers who report 11.66% mortality rate. 20.00% report 13.33% mortality, 10.00% report 16.66% % farmers and report 15.00% mortality. On an average total fixed cost was Rs. 111500.00, labour input cost includes Rs 168000.00 on an average per farm poultry farmer spent labour cost of production. This included Rs. 20000.00 on Supervision (weekly visit), Electrician(when problem) Rs.4000.00, Feedings Rs. 40000.00, Cleaning Rs. 40000.00, Watchmen Rs. 50000.00, Drinkers Rs. 22000.00 and Spraying(weekly spray) Rs. 6000.00 respectively. Selected poultry farmers in study area on average per farm spent on marketing cost was Rs. 134000.00. This included Rs. 24000.00for loading, Rs. 86000.00 for transportation and Rs. 24000.00 of unloading. On an average per farm spent a total cost of production was Rs. 679756.00 and each poultry farmers obtained physical productivity 7212 live birds and 12560 eggs whose revenue productivity was Rs. 1096500.00 and net income was Rs. 326744.00.

Mehta *et al.* (2003) first, even though poultry production as such does not exhibit major economies of scale because of the highly divisible nature of both inputs and outputs, there are economies of scale in both input and output markets (unit costs of credit, feed, transport and processing decline as the size of the operation increases), which are better captured by large commercial firms. In general, the latter contract a number of relatively well-off poultry farmers to rear day-old chicks and directly run capital-intensive and labour-saving hatcheries, feed mills, slaughter and processing plants, thereby generating limited employment opportunities along the poultry value chain.

Adepoju, (2008) the major objective of this study was to examine the technical efficiency of egg production in Onus State. Specifically, the study looked at the socio-economic characteristics which influence the technical efficiency of farmers. It estimated and analyzed productivity and technical efficiencies of the poultry farms. Data were collected from 86 sampled egg producers with the aid of a structured questionnaire using multistage random sampling technique. The data collected were analyzed using descriptive statistics, budgetary analysis and stochastic frontier production function. The study revealed that production of egg was profitable in the study area. Result also indicated that inputs were efficiently allocated and utilized and the farmers operated in the rational zone of production function (Stage II).

Conclussion

This study was carried out to investigate the economic analysis of poultry production in Tando Allahyar district, Sindh. The information was collected from selected poultry farmers. The data was collected through personal interviews. Number of analytical techniques has been used to access poultry farm production i.e. farm cost analysis, Net Return analysis; gross margin analysis. Major findings are number of small farm were 28.33% having 1000 Birds, 48.33% 1001-3000 were medium and 23.33% were having 3001 and above Birds were large farm in the study area, whereas according to farmer status there were 31.6% fanners who have owner ship and the remaining 68.4% are those, who have hired their farms on rent. Mortality rate varies from 5 to 20 above percent on the respondent's farm. It appears 13.33% farmers who report 11.66% mortality rate. 20.00% report 13.33% mortality, 10.00% report 16.66% % farmers and report 15.00% mortality. On an average total fixed cost was Rs. 111500.00, labour input cost includes Rs 168000.00 on an average per farm poultry farmer spent labour cost of production. This included Rs. 20000.00 on Supervision (weekly visit), Electrician(when problem) Rs.4000.00, Feedings Rs. 40000.00, Cleaning Rs. 40000.00, Watchmen Rs. 50000.00, Drinkers Rs. 22000.00 and Spraying(weekly spray) Rs. 6000.00 respectively. Selected poultry farmers in study area on average per

farm spent on marketing cost was Rs. 134000.00. This included Rs. 24000.00for loading, Rs. 86000.00 for transportation and Rs. 24000.00 of unloading. On an average per farm spent a total cost of production was Rs. 679756.00 and each poultry farmers obtained physical productivity 7212 live birds and 12560 eggs whose revenue productivity was Rs. 1096500.00 and net income was Rs. 326744.00. Therefore, it's concluded that poultry farms have high profit, less cost and good net return.

Present study clearly indicates that poultry farmers were increasing farm production and farm profit. Farmers were focusing to increase the new tech and modern procedures. Therefore, it is suggested that to adopt more and more tech, through which farmers should be increase the production. Farmers were unaware of proper modern techniques and new farming systems. For the promotion of poultry farms following strategy should be adopted.

- Advising proper combination of inputs to the farmer and giving subsidy on the inputs will result in enhanced farm production.
- Government should provide subsidies on feed and poultry medicine and other micro nutrients for poultry.
- Farmers face the marketing problems. Government should make adequate policies and farmers must be involved while making these poultry farm policies.
- There is need of proper guide to farmers about poultry farming so Government should provide and activate researchers and extension department for proper guideline of farmers.
- Government should advise all scheduled banks to provide loan facilities to stock producers on low interest rate and easy installments in order to expand the poultry farming on scientific basis.

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