

Original Research Article

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Economic Cost and Profit Assessment of Poultry Farming in Bhandara District

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ABSTRACT

Poultry farming in India has transformed from a mere tool of supplementary income and nutritious food for the family to the major commercial activity generating the required revenue. Changing food habits, rising income of the middle class Indian, rising market demand of the Indian poultry produce in the export market are some of the contributing factors to the growth of the industry. Therefore, the study intends to examine the socio-economic background of the poultry farmers; to analyze the investment, cost and profit of the farmers and to identify the problems faced by the farmers. The study based on primary and secondary data collected from 21 poultry farmers by adopting purposive sampling during November 2019 to May 2020. Cost of feeding constitutes a major problem to most of the poultry farmers as it accounts for a larger percentage of total cost of production, since poultry birds cannot do without food.

Keywords

Poultry, Cost, Investment, Profit, Livestock

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Introduction

The poultry industry in India has emerged as the most dynamic and rapidly expanding segment of livestock economy as evident from the production level touching about 40 billion eggs and 1 billion broilers with a compound annual growth rate of 8 percent and 15 percent respectively. What was once

started as a novelty in the 1970's - egg and broiler production - has now turned out to be a highly organized agri-business. But in spite of all these developments and relatively competitive value of the Indian poultry products (especially egg), the relative position of India in the world trade of poultry products is not so encouraging. Indian poultry industry has been growing at annual varying rates of 8-

15 percent and this growth in the past few decades made India 4th largest producer of eggs and 5th largest producer of poultry broiler.

The structure and costs of production in the Indian poultry meat industry vary from region to region. Production costs in the Southern, Western, and Eastern regions of India are very competitive with those in other countries, including the US. The technical efficiency in poultry in these Indian regions appears to be better than Brazil where the cost of production is the cheapest. Factors driving the industry's expansion include quick growth in per capita income. The Southern region has the lowest total costs despite facing the highest feed prices (both corn and soybean meal generally must be shipped from greater distances than in the other regions). Day of Old Chick (DOC) costs are lowest in the South, and mortality costs are also lower compared to Eastern and Western regions.

The main objective of the study is to find out the socio-economic background of the poultry farmers; to analyze the investment, cost and profit of the farmers.

Materials and Methods

The present study based on primary data and secondary data collected from 120 poultry farmers by adopting purposive sampling since all the farmers were not mentally prepared to respond to the questionnaires. A well-structured questionnaire was prepared and was pre-tested.

After incorporating the necessary changes in the pre-tested questionnaire, it was administered and required information about the framing was collected from the respondents during November 2019 - May 2020.

Results and Discussion

Socio-economic profile of the poultry farmers

From the above table 1 observed that, the age group of below 30 years 50% of small owners, 37.5% of medium and 0% of large owners was observed. The age group of 31-45 years was found 50 % of small, 25% of medium, and 60% of large owners. The age group of above 45 years was found only 37% of medium and 40% of large owners. Average 100% of small, medium and large owners were observed in the social-economic status with reference to age.

In secondary educational qualification were found 75% of small, 62.5% of medium and 20% of large poultry owners. In higher secondary educational qualification 25% of small, 37.5% of medium and 20% of large poultry owners were observed. Whereas in graduated educational qualification 60% of only large poultry owners were observed. The average 100% of small, medium and large poultry owners were observed in socio-economic status with reference to educational qualification.

The poultry owners of Bhandara district in business occupation was observed as 12.5% of small, 12.5% of medium and 20% of large poultry owners. In agriculture occupation 87.5% of small, 87.5% of medium and 20% of large poultry owners were found. Average 100% of small, medium and large owners were observed in the socio-economic status with regarding to occupation.

The monthly income of small poultry owners was found Rs.1000-5000 25% only. The monthly income of Rs. 5001-10000 was observed 50% of small and 25% of medium poultry owners. The 50% of medium and 40% of large poultry owners were found in

monthly income of Rs.10001-15000 during present investigation. Also, in the monthly income of Rs.15001-20000, 25% of small, 25% of medium and 60% of large poultry owners were observed. Average 100% of small, medium and large poultry owners were observed in the socio-economic status with reference to monthly income.

The size of household having 2-4 persons was found only 12.5% in small owners. In 5-7 persons of household size was observed 87.5% in each class of small and medium and 80% of large poultry owners.

The size of 8-10 persons in household size, only 12.5% of medium and 20% of large owners were found. Average 100% of small, medium and large poultry owners was observed in socio-economic status with reference to household size.

In own source of finance for poultry business, only 50% of small and 75% of medium poultry owners were found. The bank loan source of finance for poultry business were observed 25% of small, 25% of medium and 100% of large owners. The non-banking institution source of finance for poultry business, only 25% of small owners were found. Average 100% of small, medium and large owners were observed in socio-economic status with reference to source of finance for poultry business.

Sarfraz Ahmad *et al.*, (2008) study based on primary data collected from 60 poultry farms in Mirpur district, Azad Jammu & Kashmir (AJK). Farms were categorized as small farms having a population of 2000 birds; medium farms having a population of 2001 to 4000 birds; and, large farms with population of 4001 to 6000 birds. Results indicated that this business was adopted as major source of income.

Annual gross returns from poultry production

From Table 2 it is revealed that, number of chicks purchased was 8500, 18333 and 29,333 by small, medium and large owners, respectively for rearing throughout year. Mortality losses were 8.80, 8.90 and 10 per cent for small, medium and large owners, respectively. Mortality losses were found nearly similar in the entire poultry owners group. Average chick price and average selling price were Rs.20, Rs.19.78, Rs.19.66 and Rs.75.25, Rs.76.11 and Rs.74.67 for small, medium and large owners, respectively. The selling rate of the poultry was observed closely similar in all the poultry groups. Total quantity of live poultry sold by owners was 16,596.75 kg, 38,584.67 kg and 57000 kg for small, medium and large units respectively. The value of manure produced from poultry and empty bags were observed Rs. 2972.89, 6843.73 and 10655.34 and Rs. 951.24, 2189.88 and 3409.68 for small, medium and large owners, respectively.

The average gross return received by poultry owners was Rs.12,52.611, Rs.29,46877 and Rs.42,65065 for small, medium and large poultry owners per annum, respectively.

Bharambe and Garud (2012) stated that feed consumption was lower in purebreds and they produced more eggs and utilized their feed more efficiently along with more gross returns as compared to crossbreds.

Total annual cost, gross return and cost of production of poultry per kg

Total annual fixed cost for poultry production

The total annual fixed costs required for the poultry production are presented in table 3.

It is revealed from table 3 that, Total cost and returns of poultry units of different sizes studied the total fixed cost was Rs.3,70,137.5, Rs.7,79,757 and Rs. 11,48,016 for small, medium and large poultry owners units, respectively. All the materials required for the production, one time investment was observed by poultry owners. Interest on fixed capital @ 10% was Rs.37,013.75, Rs.77,975.74 and Rs.1,14,801.63 for small, medium and large units respectively. Depreciation on fixed capital was estimated to Rs.2,08,993.6 Rs.4,18,004.11 and Rs.6,13,876.3 for small, medium and large poultry units, respectively. Whereas the annual fixed cost for the poultry production was Rs. 1,61,144, 3,61,752 and 5,34,140 for small, medium and large poultry units, respectively.

Shrivastava *et al.*, (2002) studied production and marketing of broiler in Jabalpur District of M. P. Under this, only commercial production of broilers was studied. A farmer usually reared 7 to 12 batches depending on the market demand and finance available with the farmer. The per bird cost of production was almost equal (Rs. 40) on all the farms irrespective of size of farms. The absence of own farms in the small and medium farms revealed the fact that due to paucity of finance, small and medium farmers were not interested in establishing permanent infrastructure and leased in the farms. Out of the total cost, the feed cost alone accounted for more than 50 per cent (51.41 per cent on small, 53.55 per cent on medium, 52.68 per cent on large own farms and 52.50 per cent on large leased-in farms, respectively).

Total annual variable cost for poultry production

The total annual variable costs required for the poultry production are presented in table 4. Total variable cost required was found Rs. 976452.55 Rs. 2526418.39 and

Rs.3511132.29 for small, medium, large owners of poultry units, respectively. Interest on variable cost @ 6% was observed Rs.72277.68, Rs.1,45,056.3 and Rs.2,15,741.6 for small, medium, large units, respectively. Cost of chick and cost of feed was the main component of variable cost. The cost of chicks and cost of feed was Rs.170000, Rs.362627, Rs.576687 and Rs.7,40,118.8, Rs.16,86,022 and Rs.23,17,667 for small, medium and large poultry units respectively. Mortality losses in value terms observed were worth Rs.74,957.5, Rs.2,06,490.9 and Rs.2,72,691.7 for small, medium, large units respectively.

Halkatti *et al.*, (2010) studied economics of broiler production by trained and untrained farmers. The study conducted at Haveri district of Karnataka revealed that feed cost was the major expenditure in broiler production, which accounted for nearly 60 per cent of the total cost. The total cost of production per bird for the trained and untrained farmers was Rs. 46.57 and Rs. 54.25, respectively.

Total annual cost of poultry production, gross return and cost of production of poultry per kg

The total annual cost required for the poultry production are presented in table 17 and graphically represented in fig. 3

It is found from table 5 that, the total cost for the production of poultry was found to be Rs.11,24,360, Rs.25,26,301 and Rs. 35,60,277 for small, medium, large owners units respectively. Total gross return by selling of live poultry was observed that Rs.12,52,611, Rs.29,46,877 and Rs.42,65,065 for small, medium, large owners units respectively. Also, the net returns observed were Rs.1,28,251, Rs. 4,20,566 and Rs.7,04,788 for small, medium, large poultry owners units respectively.

Table.1 Socio- economic status of poultry owners

Socio- economic status	Characteristics	Small Owner (N=8)	Medium Owner (N=8)	Large Owner (N=5)
Age	Below 30 years	4 (50%)	3 (37.5%)	0 (0%)
	31- 45 years	4 (50%)	2 (25%)	3 (60%)
	Above 45 years	0 (0%)	3 (37.5%)	2 (40%)
	Average	8 (100%)	8 (100%)	5 (100%)
Educational Qualification	Secondary	6 (75%)	5 (62.5%)	1 (20%)
	Higher secondary	2 (25%)	3 (37.5%)	1 (20%)
	Graduate	0 (00%)	0 (00%)	3 (60%)
	Average	8 (100%)	8 (100%)	5 (100%)
Occupation	Businessman	1 (12.5%)	1 (12.5%)	1 (20%)
	Agriculturist	7 (87.5%)	7 (87.5%)	4 (80%)
	Total	8 (100%)	8 (100%)	5 (100%)
Monthly Income	Rs 1000-5000	2 (25%)	0 (00%)	0 (00%)
	Rs 5001-10000	4 (50%)	2 (25%)	0 (00%)
	Rs 10001-15000	0 (00%)	4 (50%)	2 (40%)
	Rs 15001-20000	2 (25%)	2 (25%)	3 (60%)
	Total	8 (100%)	8 (100%)	5 (100%)
Household size	2-4 Person	1 (12.5%)	0 (00%)	0 (00%)
	5-7 Person	7 (87.5%)	7 (87.5%)	4 (80%)
	8-10 person	0 (00%)	1 (12.5%)	1 (20%)
	Total	8 (100%)	8 (100%)	5 (100%)
Source of finance for poultry business	Own	4 (50%)	6 (75%)	0 (00%)
	Bank loan	2 (25%)	2 (25%)	5 (100%)
	Non-banking institution	2 (25%)	0 (00%)	0 (00%)
	Total	8 (100%)	8 (100%)	5 (100%)

(Figures in parentheses denote percentage to the total)

Table.2 Annual gross returns from poultry production

Sr. No	Particulars	Small (N=8)	Medium (N=8)	Large (N=5)
1	No. of chicks purchased	8500	18333	29333
2	Mortality (No. of birds)	748 (8.80)	1637 (8.90)	2933 (10.0)
3	No. of birds sold	7752 (91.20)	16697 (91.10)	26400 (90.0)
4	Quantity sold in kg.	16596.75	38584.67	57000
5	Average wt/bird in kg.	2.15	2.29	2.20
6	Average chick price(Rs./bird)	20	19.78	19.66
7	Average sale price (Rs./kg)	75.25	76.11	74.67
8	Manure (kg)	1981.93	4562.49	7103.56
9	Value (Rs 1.50/kg)	2972.89	6843.73	10655.34
10	Empty bags (Nos)	79.27	182.49	284.14
11	Value (Rs 12/bag)	951.24	2189.88	3409.68
12	Gross returns in Rs./ year	12,52611	29,46877	42,65065

Table.3 Total annual fixed cost for poultry production (Rs)

Sr. No.	Particular	Small (N=8)	Medium (N=8)	Large (N=5)
1	Building construction	3,22,500	7,00,555.6	10,83,333
2	Store room	20,187.5	36,000	51666.6 7
3	Water tank	2937.5	3255.55	5333.33
4	Feeder	3543.75	9822.22	12,800
5	Waterer	4618.75	12,233. 33	17,700
6	Brooder	2875	6113.33	10,333.33
7	Electricity fitting	3725	6766.66	11,350
8	Ventilation cloth	6125	9877.78	17,066. 67
9	Sprayer	1275	2375	500
10	Fan	312.5	1500	2333.33
11	Spray pump	537.5	1500	1666.67
12	Weighing machine	1500	1991.24	2666.66
13	Total fixed cost (Rs)	370137.5	779757	1148016
14	Interest on total fixed cost @ 10%	37013.75	77975.74	114801.63
15	Depreciation on total fixed cost	208993. 6	418004. 11	613876. 3
16	Annual fixed cost (Rounded)	161144	361752	534140

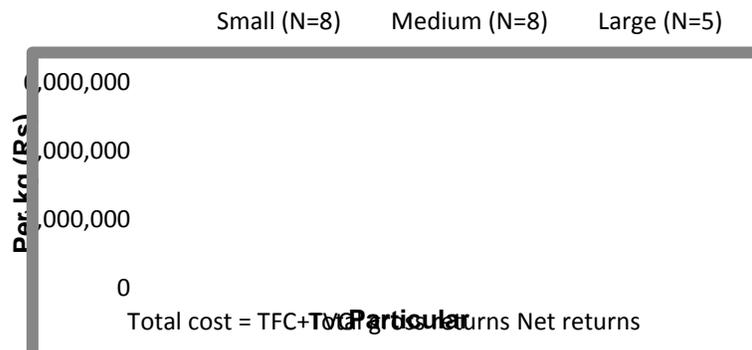
Table.4 Total annual variable cost for poultry production (Rs)

Sr. No.	Particular	Small (N=8)	Medium (N=8)	Large (N=5)
1	Cost of chicks	170000	362627	576687
2	Cost of feed	7,40,118.8	16,86,022	23,17,667
3	Cost of litter	1275.00	23,33.33	4166.66
4	Cost of medicine	15,937.5	33,333.33	57,541.67
6	Electricity bill	12,000	30,666.67	56,000
7	Transportation	0	0	4000
8	Disinfectant			
	I) Lime	193.75	244.44	400
	II) Chemicals	506.25	555.55	1433.33
9	Human labour			
	I) Hired male	26,500	50,000	66,666.67
	II) Hired female	4125	10,888.89	25,916.67
	III) Family male	4250	6666.66	11666.67
10	Electric bulb	308.75	477.77	803.33
11	Mortality losses	74,957.5	2,06,490.9	2,72,691.7
11	Miscellaneous (Repairing)	1237.5	1944.44	4000
12	Interest on total variable cost @ 6%	72,277.68	1,45,056.3	2,15,741.6
13	Total variable cost	976452.55	2526418.39	3511132.29

Table.5 Total annual cost of poultry production, gross return and cost of production of poultry per kg (Rs)

Sr. No.	Particular	Small (N=8)	Medium (N=8)	Large (N=5)
III	Total cost = TFC+TVC	11,24,360	25,26,301	35,60,277
IV	Total gross returns	12,52,611	29,46,877	42,65,065
V	Net returns	1,28,251	4,20,566	7,04,788
VI	B:C ratio	1 : 1.11	1 : 1.17	1 : 1.20
VII	Per kg cost of poultry production (Rs./kg.)	65.27	63.29	61.44

Fig.1



The B:C ratio was high in large poultry owners units 1:1.20 followed by medium units 1:1.17 and low in small poultry owners units 1:1.11.

Cost of poultry production per kg was revealed that the cost per kg is high in small poultry owners unit i.e. Rs.65.27 followed by medium units Rs.63.29 and low cost observed in large poultry owners units was Rs.61.44 because of large scale of production.

Similar results were observed by Bhende (2006) in his study on production and cost of poultry meat in Karnataka.

Halkatti *et al.*, (2010) studied economics of broiler production by trained and untrained farmers. The study conducted at Haveri district of Karnataka revealed that feed cost was the major expenditure in broiler production, which accounted for nearly 60 per cent of the total cost. The total cost of production per bird for the trained and untrained farmers was Rs. 46.57 and Rs. 54.25, respectively.

Conclusions of the study are as follows:

There was no relationship found between size of poultry unit and land holding.

Mortality losses accounted higher in large units followed by small and medium units. It was concluded that mortality percentage was lessened by taking intensive care of chicks and purchase of chicks from authorized hatcheries.

Cost of poultry production per kg was higher in small units i.e. Rs.65.27 and lower in large units i.e. Rs. 61.44 it was concluded that cost of production is low in large units because of scale of production.

B:C ratio was higher in large unit 1 : 1.20 followed by medium unit 1 : 1.17 and low in

small unit 1 : 1.11. The small and medium unit needs Government support.

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