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Constraints in commercial broiler farming: A comprehensive assessment

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Abstract

The present investigation entitled “Studies on Adoption of Management Practices Followed at Commercial Broiler Farms in Udgir Tahsil of Latur District” was conducted in the Department of Animal Husbandry and Dairy Science, College of Agriculture, Latur, during 2025-2026. The study aimed to assess the adoption of recommended feeding and management practices, identify adoption gaps, evaluate the economics and marketing of broiler farming, and document the constraints faced by commercial broiler farmers. A total of 36 broiler farms were selected using purposive and stratified random sampling and categorized into small (500-1500 birds), medium (1500-2500 birds), and large (>2500 birds) farms.

The results indicated a high adoption of recommended practices. Most respondents followed the All-In-All-Out system (75.00%), deep litter housing (94.44%), electricity-based brooding (100%), and the recommended vaccination schedule (100%). All farmers practiced anti-transport stress feeding, provided crushed maize immediately after chick placement, and adopted the all-mash feeding system, while 94.44 per cent relied on commercial feed. The overall adoption of recommended feeding and management practices was 79.26 and 75.17 per cent, with adoption gaps of 20.74 and 24.83 per cent, respectively. Major deficiencies were observed in biosecurity, feed quality assessment, mortality record maintenance, and isolation of diseased birds.

The Producer → Consumer marketing channel was the most efficient, providing the highest producer's share (94.39-95.16%). Major constraints included dependence on middlemen (80.55%), high feed cost, price fluctuations, labour wages, transportation, and electricity-related issues. Economic analysis revealed increasing profitability with farm size, as indicated by cost-benefit ratios of 1:1.10, 1:1.17, and 1:1.22 for small, medium, and large farms, respectively. The study concluded that strengthening extension services and promoting scientific management practices can further improve the productivity and profitability of commercial broiler farming.

Keywords: Commercial broiler farming, management practices, feeding practices, adoption gap, marketing, constraints, economics, profitability

1. Introduction

The total poultry in the country is 851.81 million in 2019, increased by 16.8% over previous Census. Whereas, total backyard poultry in the country is 317.07 million in 2019, increased by 45.8% over previous census. The total commercial poultry in the country is 534.74 million in 2019, increased by 4.5% over previous census. In India, 260 million layers generate 3.4 million tonnes (74 billion) of eggs per year, while 3000 million broilers create 3.8 million tonnes of chicken meat. The poultry industry contributes over Rs.70,000 crores to the national GDP and employs over 4 million people directly and indirectly. (Pathak *et.al* 2022) [5] The Indian poultry industry is experiencing robust growth, ranking as the world's 3rd largest egg producer (142.77 billion in 2023-24) and 5th largest in chicken meat production.

In Latur district, as per the 20th Livestock Census (2019), the total poultry population was 4,88,826, comprising 2,99,827 commercial poultry and 1,88,999 backyard poultry. The purpose of the "Studies on adoption of management practices followed at commercial broiler farms in Udgir tahsil of Latur district" was to investigate the actual situation, major challenges, profitability-influencing factors, market structure, and broiler farmers' reliance on different agencies with specific objectives of studying.

Broiler farming constitutes a major segment of the commercial poultry industry and plays a significant role in meeting the increasing demand for high-quality animal protein. Broilers are specialized meat-type chickens genetically selected for rapid growth, superior feed efficiency, and high meat yield within a short production period. The success of broiler production largely depends on the adoption of efficient farm management practices that optimize growth performance, maintain flock health, and ensure economic sustainability. Scientific broiler management integrates housing, nutrition, environmental control, health care, biosecurity, and waste management to achieve maximum productivity under intensive production systems. The economic success of commercial broiler farming is determined by the efficient conversion of production inputs into marketable output. The profitability of broiler farming is further enhanced through improved production efficiency, reduced mortality, effective marketing, and optimum utilization of available resources. Conversely, fluctuations in feed prices, disease outbreaks, labour shortages, and unstable market conditions adversely affect farm income and economic sustainability. Hence, periodic economic evaluation of broiler enterprises is indispensable for assessing production efficiency, identifying cost constraints, and formulating strategies to improve profitability and long-term sustainability.

2. Materials and Methods

The present study was conducted in both urban and rural areas of Udgir tahsil of Latur district, which comprises a total of ten tahsils. For this research, Udgir tahsil was selected under the jurisdiction of VNMKV, Agricultural University, Parbhani. The Broiler farms were categorized into the three groups based on their size: small, medium, and large. Farms with 500-1500 birds were considered as small-size farms, those with 1500-2500 birds were classified as medium-size, and farms with more than 2500 birds were classified as large-size. Each group had twelve broiler farms that raised broilers of each category.

2.1 Selection of respondents

The selection of respondents for the present study was carried out using a purposive and stratified sampling technique. The study area was first identified based on the concentration of broiler farms, and a list of commercial broiler farmers was obtained from local veterinary offices and extension agencies. The respondents were then categorized into different groups based on farm size, such as small, medium, and large-scale commercial broiler farmers. All the total 36 respondents were selected randomly, from each category 12 farms were selected to ensure adequate representation of all groups.

2.2 Pretesting

For study, a questionnaire was developed and pre-tested randomly at some commercial broiler farmers, and then a structured interview schedule was prepared, pre-tested, and administered personally for data collection. The data was gathered through a questionnaire based on one-on-one interviews of total 36 commercial broiler farmers.

3. Results and discussion

The study revealed that the availability and quality of foundation stock, particularly Day-Old Chicks (DOCs),

played a crucial role in the successful operation of commercial broiler farms. Farmers procured chicks from both private hatcheries and government agencies depending on their accessibility and availability. The cost of chicks in the study area was found to vary in accordance with prevailing market prices at the national level. Most of the respondents relied on government veterinary laboratories and private diagnostic centres for disease diagnosis, health monitoring, and vaccination-related services.

An analysis of factors such as chick quality, bird productivity, Feed Conversion Ratio (FCR), disease incidence, availability of chicks, and input costs indicated that these variables significantly influenced the performance of broiler farms. The findings further showed that the majority of broiler farmers in Udgir tahsil had adopted improved and scientific management practices. This may be attributed to their better financial status and awareness regarding modern poultry production technologies. Adoption of these advanced management practices contributed to improved flock performance, higher productivity, and increased profitability of broiler farming enterprises in the study area.

3.1 Constraints in broiler farming in Udgir tahsil

The factors influencing farmers to adopt broiler farming and the impact of the vertically integrated broiler farming system on farm income were examined. Various constraints affecting broiler production were also identified, and suitable measures for overcoming these challenges were explored to improve profitability. The survey focused on the major problems faced by broiler farmers, including financial, psychological, feed-related, marketing, transportation, labour and electricity-related constraints.

Financial constraints in broiler farming

Table 1: Financial constraints faced by small, medium and large size group of broiler farms

Sr No.	Particulars	Small (%)	Medium (%)	Large (%)	Overall Percentage
A	Loan not borrowed	12 (100%)	12 (100%)	12 (100%)	36 (100%)
B	Borrowed	0 (0%)	0 (0%)	0 (0%)	0 (0%)
	1. Get in time	-	-	-	-
	2. Delayed	-	-	-	-
	3. Get less than required	-	-	-	-
	4. Get required	-	-	-	-
	5. High rate of interest	-	-	-	-
	6. Reasonable rate of interest	-	-	-	-

The above table shows the distribution of broiler farmers according to the availability and utilization of institutional credit for broiler farming. Finance is one of the important factors influencing the establishment and expansion of broiler enterprises. The results presented in Table 8 revealed that none of the broiler farmers in the study area had availed themselves of loan facilities for broiler farming.

According to the data, all the farmers belonging to small, medium and large farm categories (100 per cent) reported that they had not borrowed any loan for their broiler farming activities. Consequently, no responses were recorded

regarding the timeliness of loan disbursement, delay in obtaining loans, adequacy of loan amount or rate of interest. The findings indicate that broiler farmers in the study area were managing their enterprises through their own financial resources or alternative sources of capital.

Timely availability of credit is considered an important factor in broiler farming, as it enables farmers to purchase essential inputs and expand production activities. However, the absence of loan utilization among all the respondents suggests that institutional credit played no significant role in financing broiler farming in the study area. Similar observations were reported by Puram (2022)^[7].

Technical know-how constraints in broiler farming

Table 2: Managemental (technical know-how) constraints faced by small, medium and large size group of broiler farms

Sr No.	Particulars	Small (%)	Medium (%)	Large (%)	Overall Percentage
1	Having technical know how	9 (75%)	11 (91.66%)	12 (100%)	32 (88.88%)
2	Lack of technical know how	3 (25%)	1 (8.33%)	0 (0%)	4 (11.11%)

According to Table 9, the majority of broiler farmers in the study area possessed technical knowledge related to broiler farming. It was observed that all large farmers (100 per cent) had adequate technical know-how, followed by 91.66 per cent of medium farmers and 75 per cent of small farmers. Overall, 88.88 per cent of the respondents were found to possess technical knowledge regarding broiler farming practices.

The data further revealed that lack of technical know-how was reported by 25 per cent of small farmers, 8.33 per cent of medium farmers and none of the large farmers. Overall, only 11.11 per cent of the respondents lacked technical knowledge related to broiler farming. Similar findings were reported by Dinka *et al.* (2010)^[2]. Based on the findings, it can be concluded that technical knowledge was not a major constraint for most broiler farmers in the study area. Farmers possessing adequate technical know-how were better able to adopt scientific management practices and overcome various production-related constraints, thereby improving the efficiency and profitability of broiler farming.

Marketing constraints in broiler farming

Table 3: Marketing constraints faced by small, medium and large size group of broiler farms

Sr No.	Particulars	Small (%)	Medium (%)	Large (%)	Overall Percentage
1	Market availability	11 (75%)	12 (100%)	12 (100%)	21 (87.5%)
2	Non - availability of market	1 (25%)	0 (0%)	0 (0%)	3 (12.5%)
3	Involvement of middleman	8 (66.66%)	10 (83.33%)	11 (91.66%)	29 (80.55%)
4	Direct marketing	4 (33.33%)	2 (16.66%)	1 (8.33%)	7 (19.44%)
5	Price fluctuation in market	8 (66.66%)	10 (83.33%)	10 (83.33%)	28 (77.77%)
6	Get reasonable price	4 (33.33%)	2 (16.66%)	2 (16.66%)	8 (22.22%)

According to the survey, broiler farmers in the study area faced various marketing constraints related to market availability, involvement of middlemen and price fluctuations (Table 10). The data revealed that 12.5 per cent of the respondents faced the problem of non-availability of markets. This problem was reported by 25 per cent of small farmers, whereas none of the medium and large farmers reported such a constraint. Overall, 87.5 per cent of the farmers had access to markets for the sale of broilers, including 75 per cent of small farmers and 100 per cent each of medium and large farmers.

Overall, 19.44 per cent of the farmers were engaged in direct marketing, comprising 33.33 per cent of small farmers, 16.66 per cent of medium farmers and 8.33 per cent of large farmers. On the other hand, the majority of the respondents (80.55 per cent) marketed their broilers through middlemen. The involvement of middlemen was reported by 66.66 per cent of small farmers, 83.33 per cent of medium farmers and 91.66 per cent of large farmers.

The findings further revealed that only 22.22 per cent of the respondents were able to obtain a reasonable price for their produce, including 33.33 per cent of small farmers and 16.66 per cent each of medium and large farmers. In contrast, price fluctuation was identified as a major marketing problem, affecting 77.77 per cent of the respondents. The problem was reported by 66.66 per cent of small farmers and 83.33 per cent each of medium and large farmers. These findings are comparable to those reported by Tuffour and Sedegah (2013)^[8].

Transport constraints in broiler farming

Table 4: Transport constraints faced by small, medium and large size group of broiler farms

Sr No.	Particulars	Small (%)	Medium (%)	Large (%)	Overall Percentage
1.	Having road facility	8 (66.66%)	9 (75%)	12 (100%)	29 (80.55%)
2.	No road facility	4 (33.33%)	3 (25%)	0 (0%)	7 (19.44%)
3.	Having vehicle facility	3 (25%)	7 (58.33%)	10 (83.33%)	20 (55.55%)
4.	No vehicle facility	9 (75%)	5 (41.66%)	2 (16.66%)	16 (44.44%)
5.	Reasonable transport charges	3 (25%)	7 (58.33%)	10 (83.33%)	20 (55.55%)
6.	High transport charges	9 (75%)	5 (41.66%)	2 (16.66%)	16 (44.44%)

According to the statistics presented in Table 11, lack of road facilities was one of the important transportation constraints faced by broiler farmers. The problem was reported by 33.33 per cent of small farmers and 25 per cent of medium farmers, whereas none of the large farmers faced this constraint. Overall, 19.44 per cent of the respondents reported the absence of road facilities for transportation of inputs and broiler produce. However, 66.66 per cent of small farmers, 75 per cent of medium farmers and all large farmers (100 per cent) had access to road facilities, accounting for 80.55 per cent of the respondents.

Overall, 55.55 per cent of broiler farmers had their own vehicle facilities, including 25 per cent of small farmers, 58.33 per cent of medium farmers and 83.33 per cent of large farmers. The remaining 75 per cent of small farmers,

41.66 per cent of medium farmers and 16.66 per cent of large farmers did not possess vehicle facilities and depended on hired or private vehicles for transportation purposes.

The results further revealed that high transportation charges were reported by 75 per cent of small farmers, 41.66 per cent of medium farmers and 16.66 per cent of large farmers, accounting for 44.44 per cent of the respondents overall. However 25 per cent of small farmers, 58.33 per cent of medium farmers and 83.33 per cent of large farmers were able to transport their produce at reasonable charges similar findings were reported by Praveena & Bojira (2017) ^[6].

Feed constraints in broiler farming

Table 5: Feed constraints faced by small, medium and large size group of broiler farms

Sr No.	Particulars	Small (%)	Medium (%)	Large (%)	Overall Percentage
A.	Homemade feed	0 (0%)	1 (8.33%)	1 (8.33%)	2 (75%)
B.	Purchase of readymade feed from market	12 (100%)	11 (91.66%)	11 (91.66%)	34 (75%)
	1. High cost	9 (75%)	8 (66.66%)	11 (91.66%)	28 (77.77%)
	2. Reasonable cost	3 (25%)	4 (33.33%)	1 (8.33%)	8 (22.22%)
	3. Poor quality	3 (25%)	0 (0%)	0 (0%)	3 (8.33%)
	4. Good quality	9 (75%)	12 (100%)	12 (100%)	33 (91.66%)
	5. Scarcity of feed	6 (50%)	0 (0%)	0 (0%)	6 (16.66%)
	6. Ample supply of feed	6 (50%)	12 (100%)	12 (100%)	30 (83.33%)

According to the study, a majority of broiler farmers faced problems due to the high cost of feed. The data revealed that 75 per cent of small farmers, 66.66 per cent of medium farmers and 91.66 per cent of large farmers considered feed prices to be high. Overall, 77.77 per cent of the respondents reported high feed cost as a major constraint in broiler farming.

According to the results presented in Table 12, most of the broiler farmers were dependent on ready-made feed available in the market. It was observed that 100 per cent of small farmers and 91.66 per cent each of medium and large farmers purchased commercial feed. Overall, 94.44 per cent of the respondents adopted the practice of purchasing ready-made feed from the market. Only a few farmers prepared homemade feed, accounting for 8.33 per cent each of medium and large farmers, while none of the small farmers prepared feed on their own.

The findings further revealed that only 22.22 per cent of the respondents were able to obtain feed at a reasonable cost, including 25 per cent of small farmers, 33.33 per cent of medium farmers and 8.33 per cent of large farmers. In contrast, the majority of broiler farmers purchasing ready-made feed had to pay prices higher than what they considered reasonable. Similar results were reported by Ghasura *et al.* (2013) ^[3].

With regard to feed quality, the majority of broiler farmers reported satisfactory feed quality. Good-quality feed was reported by 75 per cent of small farmers and all medium and large farmers (100 per cent), accounting for 91.66 per cent

of the respondents overall. However, poor-quality feed was reported by 25 per cent of small farmers, while none of the medium and large farmers faced this problem.

Feed availability was generally satisfactory in the study area. Ample supply of feed was reported by 50 per cent of small farmers and all medium and large farmers (100 per cent), accounting for 83.33 per cent of the respondents. However, feed scarcity was experienced by 50 per cent of small farmers, whereas none of the medium and large farmers reported such a problem. The findings indicate that high feed cost was the major feed-related constraint faced by broiler farmers in the study area.

Labour constraints in broiler farming

Table 6: Labour constraints faced by small, medium and large size group of broiler farm

Sr. No.	Particulars	Small (%)	Medium (%)	Large (%)	Overall Percentage
Labour					
A.	Scarcity of labour	9 (75%)	5 (41.66%)	2 (16.66%)	16 (44.44%)
B.	Ample supply of labour	3 (25%)	7 (58.33%)	10 (83.33%)	20 (55.55%)
C.	High wages of labour	8 (66.66%)	9 (75%)	11 (91.66%)	28 (77.77%)
D.	Reasonable wages	4 (33.33%)	3 (25%)	1 (8.33%)	8 (22.22%)

According to the survey, labour-related constraints were commonly faced by broiler farmers in the study area. Labour scarcity was observed to be highest among small farms (75 per cent), followed by medium farms (41.66 per cent) and large farms (16.66 per cent). Overall, 44.44 per cent of broiler farmers reported that they were unable to obtain the required labour for their farming activities. However, 25 per cent of small farmers, 58.33 per cent of medium farmers and 83.33 per cent of large farmers reported an ample supply of labour. Overall, 55.55 per cent of the respondents did not face any problem regarding labour availability. Similar findings were reported by Puram (2022) ^[7].

The constraints experienced by broiler farmers were ranked according to their influence on farm profitability. High labour wages were identified as one of the major constraints affecting broiler production. Labour charges above the level considered affordable by farmers were regarded as high wages, whereas wages within the acceptable range were considered reasonable. According to the study, 33.33 per cent of small farmers, 25 per cent of medium farmers and 8.33 per cent of large farmers were able to obtain labour at reasonable wage rates. Overall, only 22.22 per cent of broiler farmers considered labour charges to be reasonable.

It was seen that reasonable labour wages were Rs. 4 per bird while in contrast, 66.66 per cent of small farmers, 75 per cent of medium farmers and 91.66 per cent of large farmers had to pay higher labour charges. Overall, 77.77 per cent of the respondents reported high labour wages as a major constraint in broiler farming. The findings indicate that although labour was available to a majority of farmers, the increasing cost of labour substantially reduced farm profitability. These findings are in agreement with those reported by Malarvizhi and Geetha (2015) ^[4].

Electricity constraints in broiler farming

Table 7: Electricity constraints faced by small, medium and large size group of broiler farm

Sr No.	Particulars	Small (%)	Medium (%)	Large (%)	Overall Percentage
Electricity					
A.	Regular power Supply	9 (75%)	11 (91.66%)	11 (91.66%)	31 (86.11%)
B.	Irregular power supply	3 (25%)	1 (8.33%)	1 (8.33%)	5 (13.88%)
C.	Required voltages	11 (91.66%)	9 (75%)	7 (58.33%)	27 (75%)
D.	Low voltage	1 (8.33%)	3 (25%)	5 (41.66%)	9 (25%)

Many of the respondents reported facing electricity-related constraints in broiler farming, particularly due to irregular power supply and low voltage. Electricity is an essential requirement in broiler farming for brooding, lighting, ventilation and operation of farm equipment. The data revealed that 25 per cent of small farmers, 8.33 per cent of medium farmers and 8.33 per cent of large farmers experienced irregular power supply. Overall, 13.88 per cent of the respondents faced problems due to interruptions in electricity supply. However, 75 per cent of small farmers, 91.66 per cent of medium farmers and 91.66 per cent of large farmers reported receiving regular power supply.

The findings further indicated that low voltage was another important electricity-related constraint. About 8.33 per cent of small farmers, 25 per cent of medium farmers and 41.66 per cent of large farmers reported problems due to low voltage. Overall, 25 per cent of the respondents faced low-voltage issues, which affected the efficient functioning of electrical equipment used in broiler farming. In contrast, the required voltage supply was available to 91.66 per cent of small farmers, 75 per cent of medium farmers and 58.33 per cent of large farmers, accounting for 75 per cent of the respondents overall. Similar observations were reported by Adei and Asante (2012) ^[1].

The results indicate that although most broiler farmers had access to regular electricity supply, problems related to low voltage and occasional power interruptions continued to affect farm operations. Since electricity plays a vital role in maintaining proper environmental conditions for broilers, ensuring an uninterrupted and adequate power supply would contribute significantly to improving the efficiency and profitability of broiler farming enterprises.

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