

A study on the marketing efficiency of broiler in Bhagalpur district of Bihar,
India

ABSTRACT

A study on broiler marketing was carried out in the Bhagalpur district of Bihar, and the results were presented using tabular analysis. A multi-stage stratified sampling method was utilized to select marketing intermediaries, encompassing those in both primary and secondary markets. The study focused on these intermediaries to collect data on total marketing costs, marketing margins, price spreads, marketing efficiency, and the producer's share of consumer rupees. Additionally, the research aimed to identify the various marketing channels used in the broiler marketing process. The study was undertaken through a bench mark survey method by contacting 70 broiler farms, representing small, medium and large farms. The average number of birds was 280 on small farms, 780 birds on medium farms. and 2970 on large farms. It was clear that the highest being on large farms indicating direct relationship with the farm size.

KEYWORDS: Marketing channel, price spread, marketing cost, marketing efficiency, marketing margin and producer share in consumer rupee.

Introduction

Broiler chickens (*Gallus gallus domesticus*) are specifically raised for meat production. This meat is a crucial source of high-quality proteins, minerals, and vitamins that help balance the human diet. Based on 2023 production data from the Food and Agriculture Organization Corporate Statistical Database (Source: FAOSTAT), India is the fifth-largest meat producer in the world. From 6.69 million tonnes in 2014–15 to 9.29 million tonnes in 2021–22, the nation produced more meat. In 2023–2024, the domestic poultry sector is expected to rise by 8–10%.

Chicken accounted for the majority of India's 9.29 million tonnes of meat production in 2022 (Source: DAHD, 2022). In 2022, India produced over 4.2 million tonnes of poultry meat. The popularity of broiler meat has been rising over the past two decades, currently accounting for about 45% of total meat consumption and being the most popular meat from a single livestock species. Chicken dominates poultry meat production in India, with Haryana, West Bengal, and Uttar Pradesh leading in broiler meat production.

The Indian government often implements various schemes and programs aimed at promoting the development of the livestock and poultry sector, including broiler production. These schemes may include subsidies, financial assistance, and training programs for broiler farmers. India has laws and regulations governing the welfare of animals, including those raised for food production. **The Prevention of Cruelty to Animals Act, 1960, and the various rules and guidelines under it regulate the treatment of animals, including broiler chickens, in farms and slaughterhouses.** (Source: Ministry of Fisheries, Animal Husbandry, and Dairying, 2023)

MATERIALS AND METHODS:

This study used multistage sampling to select districts, blocks, villages, and participants. A total of 70 farmers were selected from six villages in the Nathnagar block of Bhagalpur district through a random sampling technique. Farms are divided into three different size groups; the average number of broilers per farm was 280, 780, and 2970 in the small, medium, and large farm groups, respectively. Qualitative interview techniques and preliminary interviews were used to collect detailed information from respondents about various aspects of broiler marketing.

The marketing functionaries from Ulta Pul Mandi Bhagalpur and Bhagalpur Sabzi Mandi were organized, out of which 10% were selected randomly from each primary and secondary market. The observer regarding market functionaries was taken into consideration to gather data regarding total marketing cost and marketing margin and to identify different marketing channels used in broiler marketing. With the help of this data, the price spread, total marketing cost, marketing margin, marketing efficiency, and producer share in the consumer's rupee were calculated. (Table 1)

Table 1: Selection of market functionaries

SI. No.	Market (Primary & Secondary)	Market Functionaries no.	Total

1	Ulta pul mandi, Bhagalpur	Producers	15
		Retailers	12
2	Bhagalpur Sabzi mandi, Bhagalpur	Producers	6
		Retailers	10
		Wholesalers	12
	Total		55

ANALYTICAL TOOLS

Techniques such as arithmetic mean, tabular analysis, and formulas were used to calculate different marketing concepts like marketing cost, marketing efficiency, marketing margin, price spread, and producer share in the consumer's rupee.

Marketing cost

$$C = C_f + CM_1 + C_2 + CM_3 + \dots + CM_n$$

Where;

C = Total cost of marketing of commodity

C_f = Cost paid by the producer from the time of produce leave the farm till the sale it

CM_i = Cost incurred by the i^{th} middleman in the process of buying and selling the product.

Marketing margin

$$MM = P_r - P_g$$

Where;

P_r = price paid by the consumer

P_g = price received by the producer

Price spread

$$\text{Price Spread} = MC + MM$$

Where;

MC = total market cost

MM = net marketing margin

Marketing efficiency:

By Acharya's Approach

$$\text{MME} = \text{PF} \div (\text{MC} + \text{MM})$$

Where;

MME = Modified measure of Marketing Efficiency

MC = Total marketing costs

MM = Net marketing margin

PF = Prices received by the farmer

RESULTS AND DISCUSSION

The marketing channels were identified in Bhagalpur district.

Channel I: Producer-consumer.

Channel II: Producer-Retailer-Consumer.

Channel III: Producer-Wholesaler-Retailer-Consumer.

Disposal of broiler in different marketing channels. (in quintal.)

From table 2, it was revealed that the maximum broilers were sold through channel II, which was 16.26 quintal, followed by channel III, which was 10.5 quintal, and then channel I, which was 6.55 quintal. In Channel I, maximum broilers were sold by large farms (14.5), followed by medium farms (3.6 quintal), and small farms (1.55 quintal). In Channel II, maximum broilers were sold by large farms (35.5 quintal), followed by medium farms (9.8 quintal), and small farms (3.5 quintal). In Channel III, maximum broilers were sold by large farms (23.85 quintal), followed by medium farms (5.85 quintal) and small farms (1.8 quintal). Total broilers sold in all three channels were highest in large farms (73.85 quintal), followed by medium farms (19.25) and small farms (6.85 quintal).

Table 2: Disposal of broiler in different marketing channels. (in quintal.)

S. No.	Channels	Number of intermediaries involved	Different size Group			Sample average
			Small	Medium	Large	

1	Channel I	Producer ---> Consumer	1.55	3.6	14.5	6.55
2	Channel II	Producer ---> Retailer ---> Consumer	3.5	9.8	35.5	16.26
3	Channel III	Produce---> Wholesalers---> Retailer---> Consumer	1.8	5.85	23.85	10.5
	Total		6.85	19.25	73.85	33.31

Total marketing cost in channel I (Per quintal)

Table 3 indicates that in Channel I, charges borne by the producer include packing charge (Rs. 200), transportation charge (Rs. 80), miscellaneous charge (Rs. 100), and weighing charge (Rs. 100). The total cost incurred by the producer was Rs. 480. The price paid by the consumer was Rs. 12000. The net price received by the producer was Rs. 11,520. The price spread was Rs. 480. The producer's share in the consumer's rupee was 96%. Marketing efficiency was 24%.

Table 3: Total marketing cost in channel I (Per quintal)

SI. No.	Particulars	Rs/quintal.
A.	Charges borne by the producer	
i.	Packing charges	200 (41.67)
ii.	Loading & unloading	0
iii.	Transportation charges	80 (16.67)
iv.	Miscellaneous charges	100 (20.33)

v.	weighing charges	100 (20.33)
1.	Total cost incurred by producer	480 (100)
2.	Price paid by consumer	12000
3.	Net price received by producer	11520
4.	Price spread	480
5.	Producer's share in consumer's rupee (%)	96
6.	Marketing efficiency by Acharya's approach formula	24

(Note: figures in parenthesis represent percentage to respective column total)

Total marketing cost in channel II (Per quintal)

Table 4 indicates that in Channel II, charges borne by the producer include packing charge (Rs. 200), transportation charge (Rs. 100), miscellaneous charge (Rs. 100), weighing charge (Rs. 80), and loading and unloading charge (Rs. 100). The total cost incurred by the producer was Rs. 580. Charges borne by the retailer include weighing charge (Rs. 100), packing charge (Rs. 100), transportation charges (Rs. 150), loading and unloading charges (Rs. 100), and other expenses (Rs. 80). The total cost incurred by the retailer was Rs. 530. The price paid by the consumer was Rs. 12500. The net price received by the retailer was Rs. 11970. The price spread was Rs. 3080. The producer's share in the consumer's rupee was 73.36%. Marketing efficiency was 3.05%.

Table 4: Total marketing cost in channel II (Per quintal)

Sl. No.	Particulars	Rs/qtl.
A.	Producer/Sellers	
i.	packing charges	200 (18.01)
ii.	Loading & unloading	100 (9.00)
iii.	Miscellaneous charges	100 (9.00)
iv.	Transportation charges	100 (9.00)

v.	weighing charges	80 (7.20)
1	Total cost incurred by producer	580
2	Producer's sale price	10000
3	Net price received by producer	9420
B.	Charges borne by retailer	
i.	weighing charges	100 (9.00)
ii.	packing charges	100 (9.00)
iii.	Transportation Cost	150 (13.51)
iv.	Loading & unloading	100 (9.00)
v.	Other expenses	80 (7.20)
4.	Total cost incurred by retailer	530
5.	Total Marketing Cost	1110
6.	Sale price of retailer	12500
7.	Net price received by retailer	11970
8.	Net margin of retailer	1970
9.	Price spread	3080
10.	Producer's share in consumer's rupee (%)	75.36
11.	Marketing efficiency by Acharya's approach formula	3.05

Total marketing cost in Channel III (Per quintal)

Table 5 indicates that in Channel III, charges borne by the producer include packing charge (Rs. 200), miscellaneous charge (Rs. 100), weighing charge (Rs. 180), and loading and unloading charge (Rs. 100). The total cost incurred by the producer was Rs. 580. Charges borne by the wholesaler include weighing charges (Rs. 180), packing charge (Rs. 200), transportation costs (Rs. 100), loading and unloading charges (Rs. 100), and miscellaneous charges (Rs. 80). The total cost incurred by the wholesaler was Rs. 660. Wholesaler's net margin is Rs. 1340, with a sale price of Rs. 11500. Charges borne by the retailer include the weighing charge (Rs.

180), loading and unloading (Rs. 100), and other expenses (Rs. 80). The total cost incurred by the retailer was Rs. 360. The total marketing cost was Rs. 1600. The price paid by consumers was Rs. 13,500. The net price received by the retailer was Rs. 13,140. The net retailer's margin is Rs. 1640. The price spread was Rs. 3240. The producer's share in the consumer's rupee was 66.06%. Marketing efficiency was 2.71%.

Table 5: Total marketing cost in Channel III (Per quintal)

SI. No.	Particulars	Rs/qtl.
A.	Producer/Sellers	
i.	packing charges	200 (12.5)
ii.	Loading & unloading	100 (6.25)
iii.	Miscellaneous charges	100 (6.25)
iv.	weighing charges	180 (11.25)
1.	Total cost incurred by producer	580
2.	Producer's sale price	9500
3.	Net price received by producer	8920
B.	Charges borne by wholesaler	
i.	weighing charges	180 (11.25)
ii.	packing charges	200 (12.5)
iii.	Transportation Cost	100 (6.25)
iv.	Loading & unloading	100 (6.25)
v.	Miscellaneous charges	80 (5)
4.	Total cost incurred by wholesaler	660
5.	Sale price of wholesaler	11500
6.	Net margin of wholesaler	1340
C.	Retailer	
i.	weighing charges	180 (11.25)
ii.	Loading & Unloading charges	100 (6.25)
iii.	Miscellaneous charges	80

7.	Total cost incurred by the retailers	360
8.	Total marketing cost	1600
9.	Sale price of retailer	13500
10.	Net price received by retailer	13140
11.	Net retailers' margin	1640
12.	Price spread	3240
13.	Producer's share in consumer's rupee (%)	66.07
14.	Marketing efficiency by Acharya's approach formula	2.71

(Note: figures in the parenthesis indicates percentage to the column total)

Marketing cost, market margin, marketing efficiency, Price spread and Producer's share in Consumer's rupee in Different Marketing Channels. (Rs/qtl.)

Table 6 shows that the percentage of producer's share in consumer's rupees in channels first, second, and third is 96.00, 75.36, and 66.07, respectively. Total marketing costs in channels first, second, and third are Rs. 480.00, Rs. 1110.00, and Rs. 1600.00, respectively. The price paid by consumers was highest in Channel I (Rs. 12000), followed by Channel II (Rs. 10000), and Channel III (Rs. 9500). The net price received by the producer was highest in channel I (Rs. 11520), followed by channel II (Rs. 9420), and channel III (Rs. 8920). The total price spread was highest in channel III (Rs. 3240), followed by channel II (Rs. 3080) and channel I (Rs. 480). Total marketing efficiency was highest in channel I (24%), followed by channel II (3.05%) and channel III (2.71%). Channel I demonstrated the highest marketing efficiency at 24, followed by Channel II with a slightly lower efficiency of 4.78. In contrast, Channel III recorded the lowest efficiency at 2.75, attributable to the involvement of intermediaries such as wholesalers or retailers.

Table 6: Marketing cost, market margin, marketing efficiency, Price spread and Producer's share in Consumer's rupee in Different Marketing Channels. (Rs/qtl.)

SI. No.	Particulars	Channel		
		I	II	III

1	Net price received by producer	11520	9420	8920
2	Marketing cost incurred by producer	480	580	0
6	Price paid by Wholesaler	-	-	9500
7	Market cost Incurred by wholesaler	-	-	660
9	Price paid by Retailer	-	10000	11500
10	Marketing cost incurred by retailer	-	530	360
11	Net margin of retailer	-	1970	1640
12	Price paid by consumer	12000	12500	13500
13	Total marketing cost	480	1110	1600
15	Price spread	480	3080	3240
16	Marketing efficiency (Acharya's approach)	24	3.05	2.71
17	Producer's share in consumer's rupee (%)	96	75.36	66.07

CONCLUSION:

From the analysis, it has been concluded that most producers sell their broiler meat using channel II. The total marketing cost incurred was highest in channel III (₹1600 per quintal) due to the involvement of more intermediaries. Consequently, the price spread was also highest for channel III. In channel I, producers earned more profit by selling their broiler meat directly to consumers, resulting in a higher producer's share of the consumer's rupee compared to channels II and III.

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