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Source, cost of chicks and housing structure of commercial poultry farmers in temperate and sub-tropical areas of Jammu and Kashmir: A comparison

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Abstract

This study investigates the sourcing and cost dynamics of chicks, feed, and housing infrastructure among commercial broiler poultry farmers in the temperate and sub-tropical regions of Jammu and Kashmir. Based on field surveys from 120 poultry farms (60 in each climatic zone), we compare supply sources, breed preferences, feed procurement practices, and housing design. Results reveal significant regional variations: farmers in temperate zones use insulated, elevated, solid (pakka) housing due to harsh winters, whereas those in sub-tropical zones favor ventilation and cost-effective feeds. Chicks in temperate zones cost more, likely due to transportation and climate impacts. Vencobb is the predominant breed, and all farms follow deep litter systems. Insights from this study provide guidance for policymakers, extension agents, and poultry entrepreneurs to enhance productivity and profitability in climate-sensitive regions.

Keywords: Broiler farming, chick sourcing, feed procurement, poultry housing, climatic regions

Introduction

Poultry farming is a crucial segment of agriculture in Jammu and Kashmir, providing income, employment, and nutrition. Over the past decade, broiler and layer production have grown steadily (ICAR, 2020) [2]. The region's diverse agro-climatic zones — temperate (Kashmir Valley) and sub-tropical (Jammu) — pose unique challenges. Cold conditions in temperate zones increase chick mortality and necessitate insulated housing, while sub-tropical zones require ventilation to manage heat and humidity. Chick sources—government or private hatcheries—impact cost, quality, and flock health.

This research paper aims to investigate the key components influencing commercial poultry farming in these two distinct climatic zones: the sourcing and cost of chicks, and the nature and economics of housing structures. Through field surveys, interviews, and data collection from relevant government and private sources, the study intends to highlight regional differences, cost structures, and adaptive strategies employed by farmers. The insights drawn from this analysis can serve as a valuable resource for policymakers, agricultural planners, and poultry entrepreneurs seeking to optimize production systems in climate-sensitive regions.

Methodology

A structured questionnaire was administered to 120 commercial broiler farms (60 per zone) selected randomly. Data was collected on the source and cost of chicks and feed, chick breeds, and housing factors including orientation, structure, size, elevation, wall height, and mesh area. Statistical comparisons were made using independent-sample t-tests to determine significant differences ($p < 0.05$; $p < 0.01$) between climatic zones.

Results and Discussion

1. Source and cost of chicks

1.1 Source of chicks

The data given in the table 01 reveals that in temperate area, 33.33 percent of the broiler poultry farmers were purchasing chicks from Mansoravar hatchery, followed by Venkys (30%), Neel kanth (11.67%), Skylark (10%), Noor hatchery (6.67%), Janak hatchery (6.66%)

and Ganga hatchery (1.67%). While in sub-tropical area, 48.33 percent of the broiler poultry farmers purchases their chicks from Venkys hatchery, followed by Skylark hatchery (28.33%), Mansoravar hatchery (11.67%), Panipat hatchery (10%), Ganga hatchery (6.67%) and Janak hatchery (5%). The pooled data depicts that majority (39.17%) of the broiler poultry farmers were purchasing their chicks from

Venkys hatchery, followed by Mansoravar (22.5%), Skylark hatchery (19.17%), Neek kanth hatchery and Janak hatchery (5.83% each), Panipat hatchery (5%), Ganga hatchery (4.17%) and Noor hatchery (3.33%). The data further reveals that poultry broiler farmers in both the areas are dependent on private hatcheries for the supply of chicks.

Table 1: Distribution of broiler poultry farmers according to source of chicks

Source of chicks	Temperate area (n = 60)	Sub-tropical area (n = 60)	Pooled (N = 120)
Venkys hatchery	18(30.00)	29(48.33)	47(39.17)
Mansoravar hatchery	20(33.33)	07(11.67)	27(22.50)
Skylark hatchery	06(10.00)	17(28.33)	23(19.17)
Noor hatchery	04(6.67)	00(0.00)	04(3.33)
Neel kanth hatchery	07(11.67)	00(0.00)	07(5.83)
Ganga hatchery	01(1.67)	04(6.67)	05(4.17)
Janak hatchery	04(6.66)	03(5.00)	07(5.83)

(Figures in the parentheses indicate percentage)

1.2 Cost of chicks

The table 02 depicts that in temperate area, majority (63.33%) of the broiler poultry farmers purchased chicks on with high price per chick (₹ 37-42), followed by medium (36.67%, ₹ 31-36) and none of the broiler poultry farmers purchased chicks at low prices. While in case of sub-tropical area, 41.67 percent of the broiler poultry farmers purchased chicks at low price (₹ 24-30), followed by high (30%) and medium (28.33%) price. The pooled data reveals that majority 46.67 percent of the broiler poultry farmers purchased chicks at high price, followed by medium (32.5%) and low (20.83%) price. The average cost per chick in temperate area and sub-tropical area was ₹ 37.85 and ₹ 31.9 respectively. The overall average in both areas was ₹

34.88. It was evident from the independent sample 't' test analysis that there was significant difference ($p < 0.05$) in cost of chicks in temperate and sub-tropical area. The broiler poultry farmer of temperate area were getting chicks at high prices as compared to sub-tropical area poultry farmers. The high transportation cost may be the reason for high price. Climate influences chick sourcing and housing design. Temperate farmers incur higher chick and feed costs due to transport and cold climate requirements. Housing adaptations—elevated floors, thicker walls, and reduced ventilation—aid in temperature control, though they require greater capital. Sub-tropical farms prioritize ventilation and lower-cost inputs (Kumar & Sinha, 2017) [4].

Table 2: Distribution of broiler poultry farmers according to cost of chicks

Cost of chicks (in rupees)	Temperate area (n = 60)	Sub-tropical area (n = 60)	Pooled (N = 120)
Low (24-30)	0(0.00)	25(41.67)	25(20.83)
Medium (31-36)	22(36.67)	17(28.33)	39(32.50)
High (37-42)	38(63.33)	18(30.00)	56(46.67)
Mean $\pm$ SD	37.85 $\pm$ 2.95	31.90 $\pm$ 4.89	34.88 $\pm$ 5.01
t value	8.0728*		

(Figures in the parentheses indicate percentage) (* significant at 5% level of significance)

1.3 Breed of chick

The table 03 reveals that in temperate area, huge majority (90%) of the broiler poultry farmers were rearing Vencobb breed of chicks and 10 percent Hubbard. Whereas in sub-tropical area, majority (71.67%) of the broiler poultry farmers were rearing Vencobb breed of chicks and 28.33

percent Hubbard breed of chicks. The pooled data depicts that huge majority (80.83%) of the broiler poultry farmers were rearing Vencobb breed of chicks and 19.17 percent Hubbard breed of chicks. The table further reveals that these breeds were sold by all hatcheries in the area, however these breeds belong to two hatcheries.

Table 3: Distribution of broiler poultry farmers according to breed of chicks

Breed of chicks	Temperate (n = 60)	Sub-tropical (n = 60)	Pooled (N = 120)
Vencobb	54(90.00)	43(71.67)	97(80.83)
Hubbard	06(10.00)	17(28.33)	23(19.17)

(Figures in the parentheses indicate percentage)

2. Source and cost of feed

2.1 Source of feed

The data in the table 04 reveals that in temperate area, 43.33 percent of the broiler poultry farmers purchased feed from Maha company, followed by Sampoorna company (25.25%), Ratan gold company (11.67%) and Easy and Anmol company (10% each). While in sub-tropical area, the 46.67 percent of the broiler poultry farmers purchased feed

from JK feeds, followed by Venkys (21.67%) and Gold Mohar (21.67% each) and Godrej feeds (10%). The pooled data depicts that maximum 23.33 percent of the broiler poultry farmers purchased feed from JK feeds, followed by Maha company (21.67%), Sampoorna feed company (12.5%), Venkys and Gold Mohar (10.83% each), Ratan gold (5.84%) and Easy, Anmol and Godrej (5% each). This indicates that all the broiler poultry farmers purchased feed

from private companies and none of the broiler poultry farmers had its own feed production.

Table 4: Distribution of broiler poultry farmers according to source of feed

Supplier companies	Temperate (n = 60)	Sub-tropical (n = 60)	Pooled (N = 120)
Maha feeds	26(43.33)	00(0.00)	26(21.67)
Ratan gold feeds	07(11.67)	00(0.00)	07(5.84)
Sampoorna feeds	15(25.00)	00(0.00)	15(12.50)
Easy feeds	06(10.00)	00(0.00)	06(5.00)
Anmol feeds	06(10.00)	00(0.00)	06(5.00)
Godrej feeds	00(0.00)	06(10.00)	06(5.00)
JK Feeds	00(0.00)	28(46.67)	28(23.33)
Venkys	00(0.00)	13(21.67)	13(10.83)
Gold Mohar	00(0.00)	13(21.66)	13(10.83)

(Figures in the parentheses indicate percentage)

2.1 Comparison of feed price (per quintal) between two areas

Table 05 reveals that in temperate area, the price per quintal of pre-starter, starter and finisher feed was ₹ 4962.33, ₹ 4743.38, and ₹ 4665 respectively. Whereas in sub-tropical area the price per quintal of pre-starter, starter and finisher feed was ₹ 4768.33, ₹ 4668.78, and ₹ 4568.57 respectively. It was evident from the independent sample 't' test analysis that there was highly significant difference ($p < 0.01$) in price per quintal of feed in temperate and sub-tropical area. The poultry farmers of temperate area were purchasing feed at higher prices as compared to poultry farmers of sub-tropical area.

Table 05. Comparison of feed price (per quintal) in the two areas

Average feed price (per quintal)			
Feed type	Temperate area	Sub-tropical area	
	Mean ± SD	Mean ± SD	t-value
Pre-starter feed	₹ 4962.33±343.70	₹ 4768.33±182.11	9.9083**
Starter feed	₹ 4743.38±316.96	₹ 4668.78±176.11	8.0109**
Finisher feed	₹ 4665.00±327.20	₹ 4568.57±173.11	8.2689**

(** significant at 1% level of significance) (** significant at 1% level of significance)

3. Housing structure

3.1 Orientation of sheds

Table 06 reveals that in temperate area, huge majority (81.67%) of the broiler poultry farmers had East-West longitudinal direction of poultry sheds, followed by North-South (18.33%). While in case of sub-tropical area, overwhelming majority (91.67%) of the broiler poultry farmers had East-West longitudinal direction of poultry sheds, followed by North-South (8.33%). The pooled data depicts that huge majority (86.67%) of the broiler poultry farmers had East-West longitudinal direction of poultry sheds, followed by North-South (13.33%).

3.2 Rearing system

Table 06 reveals that in temperate as well as sub-tropical area all (100%) the broiler poultry farmers were having deep litter type of rearing system. This may be due to the reason of more accommodation of birds and less investment in deep litter as compared to cage system. Shahnaz (2010) [6] found the similar results that all the poultry farmers were having deep litter type of rearing system.

3.3 Type of sheds

The perusal of data from table 06 reveals that in temperate area all (100%) the broiler poultry farmers were having *pakka* type of poultry sheds. While as in sub-tropical area, majority (78.33%) of the broiler poultry farmers had *pakka* type of poultry shed and remaining 21.67 percent had thatched type of poultry shed.

3.4 Size of sheds

The perusal of data from the table 06 reveals that in temperate area, majority of the broiler poultry farmers (60%) had small size (1200-3400 ft²) of sheds, followed by medium (3401-5600 ft², 38.33%) and large (5601-7800 ft², 1.67%). While as in case of sub-tropical area, majority (65%) of broiler poultry farmers had small sized farms, followed by medium (30%) and large (5%). The pooled data reveals that majority (62.5%) of the broiler poultry farmers had small sheds, followed by medium (34.16%) and large (3.33%).

3.5 Elevation from the ground

Table 06 reveals that in temperate area, majority (58.33%) of the farms were constructed at an elevation of 2-2.5 ft from the ground, followed by 2.6-3 ft (41.67%) from ground. While in sub-tropical area, all (100%) of the farms were constructed at 1-1.5 ft elevation from ground. The pooled data depicts that half (50%) of the farms were constructed at 1-1.5 ft of elevation from ground, followed by 2-2.5 ft (29.16%) and 2.6-3 ft (20.83%). The table further revealed that poultry farms in temperate area were constructed at more elevation from ground as compared to sub-tropical area. It may be because of prolonged winter and cold waves as it protects in winter.

3.6 Brick wall

Table 06 reveals that in temperate area, huge majority (81.67%) of the poultry farms had 6.1-7 ft height of brick wall from plinth, followed by 5.1-6 ft (18.33%). While in sub-tropical area, 55 percent farms had 3-4 ft height of brick wall from plinth, followed by 4.1-5 ft (45%). The pooled data depicts that 40.83 percent of the poultry farmers had 6.1-7 ft height of brick wall from plinth, followed by 3-4 ft (27.5%), 4.1-5 ft (22.5%) and 5.1-6 ft (9.17%). The table further revealed that poultry farms in temperate area were having more brick wall from the plinth as compared to sub-tropical area. It might be because of the reason to protect the birds from the cold waves in the severe winter and temperature maintenance inside the sheds becomes easy.

3.7 Wire mesh area

Table 06 reveals that in temperate area, all (100%) of the poultry farms had 2.5*4.5 ft² of wire mesh area. While in sub-tropical area, huge majority (85%) of the poultry farms had 7*4 ft² wire mesh area, followed by 7*5 ft² (15%). The pooled data depicts that half (50%) of the poultry farms were having 2.5*4.5 ft² wire mesh area, followed by 7*4 ft² (42.5%) and 7*5 ft² (7.5%). The table further revealed that poultry farms in temperate area had less open area (less wire mesh area) as compared to sub-tropical area. The temperate area had prolonged winter and temperature maintenance becomes difficult if more open space for ventilation, hence less open area is necessary.

Table 6: Distribution of broiler poultry farmers according to their poultry housing structure

Characteristics	Temperate area (n = 60)	Sub-tropical area (n = 60)	Pooled (N = 120)
Orientation of sheds			
East-west	49(81.67)	55(91.67)	104(86.67)
North-South	11(18.33)	05(8.33)	16(13.33)
Rearing system			
Cage system	0(0.00)	0(0.00)	0(0.00)
Deep litter	60(100)	60(100)	120(100.00)
Type of sheds			
<i>Pakka</i> (brick wall + mesh + asbestos + iron sheet)	60(100.00)	47(78.33)	107(89.16)
Thatched	0(0.00)	13(21.67)	13(10.83)
Size of sheds			
Small (1200-3400 ft ²)	36(60.00)	39(65.00)	75(62.5)
Medium (3401-5600 ft ²)	23(38.33)	18(30.00)	41(34.16)
Large (5601-7800 ft ²)	01(1.67)	03(5.00)	04(3.33)
Elevation from the ground			
(1-1.5 ft)	00(0.00)	60(100)	60(50.00)
(1.6-2ft)	00(0.00)	00(0.00)	00(0.00)
(2-2.5 ft)	35(58.33)	00(0.00)	35(29.16)
(2.6-3 ft)	25(41.67)	0(00.00)	25(20.83)
Brick wall			
3-4 ft	0(0.00)	33(55.00)	33(27.50)
4.1-5 ft	0(0.00)	27(45.00)	27(22.50)
5.1-6 ft	11(18.33)	00(0.00)	11(09.17)
6.1-7 ft	49(81.67)	00(0.00)	49(40.83)
Wire mesh size			
2.5*4.5 ft ²	60(100.00)	00(0.00)	60(50.00)
7*4 ft ²	00(0.00)	51(85.00)	51(42.50)
7*5 ft ²	00(0.00)	09(15.00)	09(07.50)

(Figures in the parentheses indicate percentage)

Conclusion

Climatic conditions significantly shape economic and structural decisions in poultry farming in Jammu and Kashmir. Tailored housing strategies are essential: insulated and raised structures in cold zones, ventilated sheds in warm zones. Policymakers and farmers should consider climate-driven factors in planning infrastructure and supply chains to enhance efficiency and profitability (Shahnaz, 2010) [6]. The findings emphasize the need for climate-specific planning, especially in cost management and infrastructure development, to enhance productivity and profitability for poultry farmers in Jammu and Kashmir.

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