Haryana Vet. (December, 2024) **63(2),** 178-183 ISSN 0033-4359 (P) **Research Article**

AN APPRAISAL OF CONSTRAINTS PERCEIVED BY BACKYARD POULTRY FARMERS OF PUNJAB

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ABSTRACT

Among rural and landless families, the Backyard or Homestead Poultry Farming (BPF) serves as a beneficial source of additional income and a source of nutritional security. The current study was specifically focused on understanding the constraints perceived by Backyard Poultry farmers of Punjab. Two districts namely District Barnala (having maximum Poultry population, Group-I, n=70) and District Tarn Taran (having minimum Poultry population, Group-II, n=70) were purposively selected. Respondents were selected by Random Selection method among these selected districtsand personal interviewing method is adopted for recording constraints faced by farmers. The data was analyzed using Garrret's ranking technique. The ranking pattern of General constraints, Management constraints, Personal constraints, Situational constraints, technical constraints and Marketing constraints are III, I, IV, V, II and VI for Group-I; II, III, V, IV, I and VI for Group II; III, II, V, IV, I and VI for total backyard poultry farmers, respectively. These constraints should be addressed to provide support to farmers in overcoming challenges faced in backyard Poultry farming. By identifying and implementing appropriate strategies, backyard poultry rearers can make better farming practices and ensure sustainable and profitable outcomes.

Keywords: Backyard poultry, Constraints, Punjab

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The total backyard poultry population in India reached a whopping population of 317.07 million in 2019, showing a remarkable increase of 45.8% compared to the previous census (Anonymous, 2019). Punjab has a poultry population of 16.79 million which is 2.30% of the total poultry population of the country. About 0.88 million households are engaged in backyard poultry (National Action Plan for Egg and Poultry-2022). Backyard or homestead poultry farming is common among rural and landless families in India. It not only provides them with a source of additional income but also helps to meet their household needs. It involves small investment and yields high economic returns, and can be easily managed by women, children, and elders. Meat and eggs from such birds are of low-cost and rich source of protein and energy for poor households (Rathod, 2020). Another factor that makes it an extra supportable source of revenue for rural households through backyard chicken rearing is its low dependency on natural factors like soil topography, rainfall and climate (Singh *et al.*, 2021). However, backyard poultry farmers might be facing certain constraints. Analyzing the constraints perceived by backyard bird rearers can be incredibly helpful in addressing their problems in a timely manner. However, the comprehensive studies regarding constraints perceived by Backyard Poultry owners are scanty. So, current work was designed to know about Constraints perceived by Backyard Poultry rearers of Punjab.

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MATERIALS AND METHODS

The present study was carried out in Punjab state. The District Barnala and District Tarn Taran of Punjab were purposively selected for a comparative study on backyard poultry farming practices. This selection was based on data from the Statistical Abstract of Punjab (2022), which indicated that District Barnala has the highest number of birds, while District Tarn Taran has the lowest number of birds among all districts in Punjab (Anonymous, 2023). A total of 140 backyard Poultry farmers allied to Group-I (belonging to District Barnala, n=70) and Group-II (belonging to District Tarn Taran, n=70) were selected by random selection method. The constraints perceived by backyard Poultry farmers were classified in to General constraints, Management constraints, Personal constraints, Situational constraints, Technical constraints and Marketing constraintsafter discussing with Subject matter specialists and after scrutinizing relevant literature. The farmers were personally interviewed and were asked to rank these constraints. The data was tabulated and analysed with the help of Garrett's ranking technique, which is a systematic approach to determine the relative importance of each constraint dependingupon the responses of the participants.

According to Garrett's ranking technique (Garrett and Woodworth, 1969), the intervieweewere asked to enlist and give ranks to different problems or constraints. This ranking helped in prioritizing the constraints based on their

perceived importance. The orders of level as given by the interviewee were assigned ranks, with the help of following formula:

Percent position = $[100 (R_{ij} - 0.50)]/N_j$

Where,

R_{ij} = Rank given for i^{th} problem by j^{th} individual.

N_j = Number of problems ranked by the j^{th} individual.

After the respondents assigned ranks to the different problems, the percent position of each and every rank was transformed into scores by the use of Garrett's table. The counts for each and every responder were then totaled and divided by the total number of responders. This resulted in mean scores for each problem. Finally, the mean scores were arranged in descending order, and ranks were allotted to sort the constraints.

RESULTS AND DISCUSSION

Table 1 describes categorization of constraints perceived by Backyard Poultry farmers.

a) General constraints: Both Group-I and Group-II have a significant number of farmers (42.85% and 45.71%, respectively) facing challenges due to extreme weather conditions. This could include excessive heat, heavy rainfall, drought or other weather-related factors that impact agricultural practices. Interestingly, both groups reported no constraints related to feed quality or availability. This suggests that farmers in both the groups have approach to sufficient and good quality feed for their birds. Both Group I and Group II did not report any constraints related to waste management. This indicates that farmers in both groups have effective waste management practices in place, ensuring proper disposal and utilization of agricultural waste. Moreover Group I has a slightly higher percentage (10%) of farmers facing challenges related to protecting their birds from predators compared to Group-II (5.71%). This could include issues with wild animals or pests that pose a warning to the well-being of the birds. Also Group-I reported a lower percentage (10%) of farmers facing constraints because of the lesser finance compared to Group-II (30%). This suggests that farmers in Group-I may have better approach to financial resources or alternative means of financing their agricultural activities. Further on Both Group-I and Group-II have a significant number of farmers (52.85% and 57.14%, respectively) facing challenges because of the high price of feed and medicines. This could impact the overall cost of backyard poultry farming and profitability for farmers in both groups. Singh *et al.* (2020) observed various limitations like death rate in chicks is high due to disease outbreaks, the deficit infrastructure, the low productivity of desi chickens, the unavailability of technical knowledge, predators attacks, hunger, weather changes, and insecure feed provision and rates throughout the year. Rajkumar *et al.* (2020) reported that most of the farmers face preserving biosecurity, emerging and re-emerging diseases, dietary deficiency problems. Sangamitra *et al.* (2021) reported that the farmers mentioned that the predatation was a serious issue (84.00%), followed by a less scientific knowledge about diseases (81.33%) and lucrative profits (76.67%).

b) Personal constraints: According to the data, 61.42% of farmers in Group-I and 64.28% of farmers in Group-II reported being unable to pay constant awareness to the respective activities. This indicates that a significant portion of farmers face challenges in allocating their attention effectively, which could affect their net productivity. Religious constraints were reported by 22.85% of farmers in Group-I and 10.00% of farmers in Group-II. These constraints could include religious obligations or practices that may stuck their ability to fully engage in poultry rearing activities. Lack of help from family was cited as a constraint by 22.85% of farmers in Group-I and 30.00% of farmers in Group- II. This lack of support can have a direct impact on farmers' ability to carry out tasks efficiently and make important decisions. Addressing these personal constraints is crucial to ensure the well-being and productivity of farmers. By providing support systems, training programs, and resources tailored to their needs, one can help farmers overcome the problems and enhance their agricultural practices.

c) Situational constraints: A perusal of Table 1 shows that 61.42% of farmers in Group I and 11.42% of farmers in Group-II were facing risks and uncertainties in their agricultural activities. This indicates that farmers often have to navigate uncertain factors that can affect their outcomes and profits. Secondly, a significant number of farmers in both groups (28.57% in Group-I and 28.57% in Group-II) reported difficulty in accessing electric supply. This can pose challenges in terms of powering agricultural equipment and carrying out essential tasks. Lastly, 20% of farmers in Group-II faced difficulty in accessing water. Adequate water supply is crucial for irrigation and other agricultural activities, so this constraint can seriously affect farmer's productivity. These challenges highlight the necessity for supportive infrastructure and policies to highlight the risks, ensure reliable access to electricity, and improve water supply for farmers. By addressing these issues, we can help create a more conducive environment

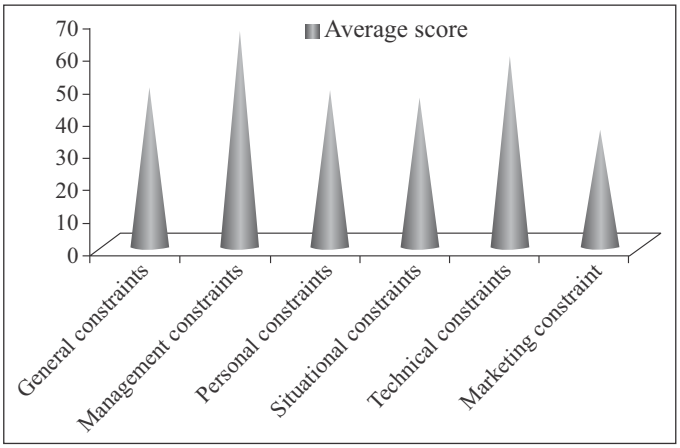

Fig. 1. Average Score of Constraints Faced By Group I Farmers

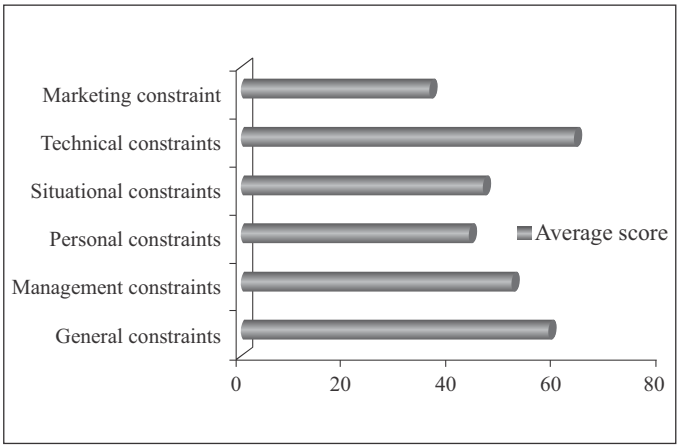

Fig. 2. Average Score of Constraints Faced By Group II Farmers

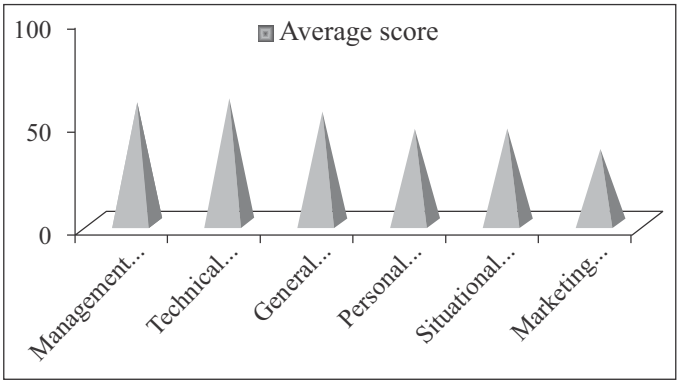

Fig. 3. Average Score of Constraints Faced by Overall Farmers

for agricultural practices. Sadef *et al.* (2015) discussed that most of the farmers face water scarcity at the farm site.

d) Technical constraints: Unavailability of Veterinary services was reported by 61.42% of farmers in Group-I and 65.71% of farmers in Group-II. This reflects that most of the farmers struggle with accessing veterinary services for their animals, which can impact animal health and overall productivity. Insufficient technologies were cited as a constraint by 61.42% of farmers in Group-I and 65.71% of farmers in Group-II. This indicates that farmers may lack access to modern agricultural techniques that could upgrade their efficiency and yield. Interestingly, there is no reported data for the unavailability of training programs. This could mean that farmers in both groups have access to training programs, which is beneficial for their skills development and staying updated with the latest agricultural practices. Lack of guidance was mentioned by 22.85% of farmers in Group-I and 20.00% of farmers in Group-II. This suggests the importance of providing farmers with proper guidance and support in making informed decisions related to their agricultural activities. Addressing these technical constraints by improving access to veterinary services, providing advanced technologies and offering guidance can significantly benefit farmers and contribute to the widening of the agricultural industry. Sadef *et al.* (2015) highlighted that majority of the backyard poultry farmers face major constraint was the lack of veterinary facilities, occurrence of health related problems and shortage of financial funds.

e) Marketing constraints: Fluctuation in the sale of poultry products was reported by 20.00% of farmers in Group-I and 18.57% of farmers in Group-II. This indicates that poultry farmers may experience variations in the demand and sales of their products, which can impact their profitability. Low prices of eggs in the summer season were mentioned by 41.42% of farmers in Group-I and 20.00% of farmers in Group-II. It seems that during the summer season, the prices of eggs tend to decrease, which can affect the income of poultry farmers. Damage of eggs during transportation was reported by 20.00% of farmers in Group-I and 0% of farmers in Group-II. This highlights the importance of proper transportation methods to ensure that eggs reach the market in good condition, reducing potential losses for farmers. These problems in the poultry industry emphasize the need for strategies to manage fluctuating sales, address price fluctuations and improve transportation practices to minimize egg damage. Rajkumar *et al.* (2020) reported that one of the main problem that backyard poultry farmers were facing is poor marketing of desi birds and their products.

f) Management constraints: Non-availability of Veterinary services was reported by 80.00% of farmers in Group-I and 84.28% of farmers in Group-II. This indicates that most of farmers struggle with accessing veterinary services for their animals, which can impact animal health and overall productivity. Lack of guidance/training was mentioned by 37.14% of farmers in Group-I and 45.71% of farmers in Group-II. This highlights the importance of providing farmers with proper guidance and training to enhance their experience in poultry farming practices.

Table 1. Constraints faced by the Backyard Poultry farmers of Punjab

Constraints		Group-I (n=70)	Group-II (n=70)	Total (n=140)
A)	**GENERAL**			
I.	Extreme weather conditions	30 (42.85)	32 (45.71)	62 (44.28)
II.	Feed quality	0 (0)	0 (0)	0 (0)
III.	Feed availability	0 (0)	0 (0)	0 (0)
IV.	Waste management	0 (0)	0 (0)	0 (0)
V.	Protection from predators	7 (10.00)	4 (5.71)	11 (7.85)
VI.	Lack of finance	7 (10.00)	21 (30.00)	28(20.00)
VII.	High price of feed and medicines	37 (52.85)	40 (57.14)	77 (55.00)
B)	**PERSONAL**			
I.	Unable to pay constant attention	43 (61.42)	45 (64.28)	88 (62.85)
II.	Religious constraints	16 (22.85)	7 (10.00)	23 (16.42)
III.	Lack of support from family member	16 (22.85)	21 (30.00)	37 (26.42)
C)	**SITUATIONAL**			
I.	Risk and uncertainty	43 (61.42)	8 (11.42)	51 (36.42)
II.	Difficulty in getting electric supply	20 (28.57)	24 (28.57)	44 (31.42)
III.	Difficulty in water	0 (0)	20 (28.57)	20 (14.28)
D)	**TECHNICAL**			
I.	Unavailability of veterinary services	43 (61.42)	46 (65.71)	89 (63.57)
II.	Insufficient technologies	43 (61.42)	46 (65.71)	89 (63.57)
III.	Unavailability of training programs	0 (0)	0 (0)	0 (0)
IV.	Lack of guidance	16 (22.85)	21 (20.00)	37 (26.42)
E)	**MARKETING**			
I.	Fluctuation in sale of poultry products	14 (20.00)	13 (18.57)	27 (19.28)
II.	Low prices of eggs in summer season	29 (41.42)	14 (20.00)	43 (30.71)
III.	Damage of eggs during transportation	14 (20.00)	0 (0)	14 (10.00)
F)	**MANAGEMENTAL**			
I.	Non availability of veterinary services	56 (80.00)	59 (84.28)	115 (82.14)
II.	Lack of guidance/training	26 (37.14)	32 (45.71)	58 (41.42)
III.	Lack of storage facility of eggs and meat	29 (41.42)	0 (0)	29 (20.71)
IV.	Unavailability of vaccination material	0 (0)	0 (0)	0 (0)

Figure in parenthesis indicate percentage

Table 2. Ranking pattern of responses of Group-I Backyard Poultry farmers (n=70) for different constraints in Garret's ranking technique

Constraint	Rank order					
	1st	2nd	3rd	4th	5th	6th
General constraints	9	9	18	10	10	14
Management constraints	35	15	9	8	2	1
Personal constraints	6	9	15	18	11	11
Situational constraints	3	7	15	15	22	8
Technical constraints	15	29	10	3	6	7
Marketing constraint	2	1	3	16	19	29

Table 3. Ranking pattern of responses of Group-II Backyard Poultry farmers (n=70) for different constraints in Garret's ranking technique

Constraint	Rank order					
	1st	2nd	3rd	4th	5th	6th
General constraints	16	29	9	6	4	6
Management constraints	12	12	18	8	10	10
Personal constraints	3	6	15	18	12	16
Situational constraints	6	5	15	16	19	9
Technical constraints	31	16	10	7	4	2
Marketing constraint	2	2	3	15	21	27

Lack of storage facility for eggs and meat was reported by 41.42% of farmers in Group-I and 0% of farmers in Group-II. Having adequate storage facilities is crucial to make sure the quality and safety of poultry products. Unavailability of vaccination material was not reported by any farmers in both groups. This suggests that farmers

have access to the necessary vaccination materials for their poultry. Addressing these challenges by improving access to veterinary services, providing guidance and training, and ensuring proper storage facilities can greatly benefit poultry farmers and contribute to the growth of the industry.

Table 2, Table 3 and Table 4 represent ranking pattern of responses of Group-I, Group-II and Total Poultry farmers group for different constraints in Garret's ranking technique.

Table 5, Table 6 and Table 7 represent Garret value calculation and ranking of constraints perceived by Group I, II and Total Backyard Poultry farmers, respectively.

Table 4. Ranking pattern of responses of Backyard Poultry farmers (n=140) for different constraints in Garret's ranking technique

Constraint	Rank order					
	1st	2nd	3rd	4th	5th	6th
General constraints	25	38	27	16	14	20
Management constraints	47	27	27	16	12	11
Personal constraints	9	15	30	36	23	27
Situational constraints	9	12	30	31	41	17
Technical constraints	46	45	20	10	10	9
Marketing constraint	4	3	6	31	40	56

Table 5. Calculation of Garret Value and Ranking of Group-I Backyard Poultry farmers (n=70)

Constraint	Rank order						Total Score	Average Score	Rank
	1st	2nd	3rd	4th	5th	6th			
General	693	567	972	460	370	322	3384	48.34	III
Management	2695	945	486	368	74	23	4591	65.59	I
Personal	462	567	810	828	407	253	3327	47.53	IV
Situational	231	441	810	690	814	184	3170	45.29	V
Technical	1155	1827	540	138	222	161	4043	57.76	II
Marketing	154	63	162	736	703	667	2485	35.50	VI

Table 6. Calculation of Garret Value and Ranking of Group-II Backyard Poultry farmers (n=70)

Constraint	Rank order						Total Score	Average Score	Rank
	1st	2nd	3rd	4th	5th	6th			
General	1232	1827	486	276	148	138	4107	58.67	II
Management	924	756	972	368	370	230	3620	51.71	III
Personal	231	378	810	828	444	368	3059	43.70	V
Situational	462	315	810	736	703	207	3233	46.19	IV
Technical	2387	1008	540	322	148	46	4451	63.59	I
Marketing	154	126	162	690	777	621	2530	36.14	VI

Table 7. Calculation of Garret Value and Ranking of Total Backyard Poultry farmers (n=140)

Constraint	Rank order						Total Score	Average Score	Rank
	1st	2nd	3rd	4th	5th	6th			
General	1925	2394	1458	736	518	460	7491	53.51	III
Management	3619	1701	1458	736	444	253	8211	58.65	II
Personal	693	945	1620	1656	851	621	6386	45.61	V
Situational	693	756	1620	1426	1517	391	6403	45.74	IV
Technical	3542	2835	1080	460	370	207	8494	60.67	I
Marketing	308	189	324	1426	1480	1288	5015	35.82	VI

It is clear from Fig. 1, Fig. 2 and Fig. 3 that, the ranking pattern of General constraints, Management constraints, Personal constraints, Situational constraints, Technical constraints and Marketing constraints is III, I, IV, V, II and VI for Group-I; II , III, V, IV, I and VI for Group-II; III, II, V, IV, I and VI for total backyard poultry farmers.

CONCLUSIONS

In Punjab state, technical constraint was reported to

be major constraint followed by management constraint, general constraints, situational constraints, personal constraints and marketing constraints. These constraints should be addressed to uplift the backyard Poultry farmers.

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