

A study on constraints faced by small poultry farmers in highlands

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Abstract

Poultry farming has big scope and marketing opportunities. Poultry enterprise is increased by 12.5 per cent. This is one of the most noteworthy activities for the rural people. Past researches revealed that in rural area majority of poultry farmers were facing various problems due to lack of knowledge, information and education on many aspects. Present research investigation was conducted during farmer's fair held in GBPUA&T, Pantnagar 2020-21. A total sample of 120 poultry farmers were selected. Structured interview schedule was divided into two parts viz; general information and constraints faced by poultry farmers. For analysis of constraints Friedman two-way ANOVA was used. The results revealed that majority of poultry farmers were middle age group, educated and had medium annual income. Majority of poultry farmers were using coal as Method of Brooding and thatched type of Roofing for the shed. Majority of poultry farmers were facing production and feeding constraints, marketing constraints, lack of information reach constraints, institutional constraints.

Key words: Constraints, Knowledge, Information, Poultry farmers.

Introduction

India has ranked as the fifth largest poultry producer in the World, behind the United States, Brazil, the European Union (EU), and China. According to US Department of Agriculture estimates, India's poultry meat production grew about 6 per cent annually during the 1990's, accelerated to 11 per cent annually in the 2000s and to nearly 19 per cent during 2020-2021. India with over 60 per cent of its living in villages has not found out alternate livelihood for its rural poor. The farmers without any investment and marketing risk of selling the produce chicken get extra income once in 45 days, throughout the year. (Sridharan, 2017)

Past researches revealed that poultry farming is alternative livelihood to the small and marginal farmers. In the previous time, poultry farming involved raising chickens in the back yard for daily egg production and family consumption. Poultry farming today is a large sector of business that is split into several operations including hatcheries, pullet farms for meat production, or farms for egg production. Poultry farmers were facing various problems as lack of institutional credit, shortage of labour force, cost escalation of coal, electricity, high mortality of birds especially in summer, loss owing to bird flu, payment issues with integrators etc. Poultry farmers are facing various constraints. (Singh et. al., 2021). Poultry farming is the process of raising housebreak birds such as chickens ducks, turkeys and geese for the purpose of forming meat or eggs for food. (Chawke et.al, 2021). Poultry farmers raise more than 50 billion chickens annually as a source of food, both for their meat and for the eggs. According to National Sample Survey (NSS) report (Pant and Singh, 2002) on livestock ownership, landless marginal and small farmer accounted for about 90 per cent of the population having 85 per cent of the total poultry stock. Moreover, poor transport facilities, infrastructure facilities and lack of cold chain facilities currently limit the feasibility of handling significant volumes of chilled or frozen products. (Saiful et.al., 2012)

Kumari et.al. (2021) reported that poultry farmers were facing the problems as high price of feed grains, No Insurance policy for poultry, High interest rate on loan, lack of money for opening farm, lack of proper marketing channels. Swain et.al. (2009) reported that main problems encountered by the poultry farmers, in making their poultry a successful enterprise was high feed cost followed by competition with outside farmers, high labour cost, trading, high cost of electricity, high cost of chicks and non-availability of health services. Ogunlade et.al. (2017) reported that major constraints faced by farmers in waste management practices were lack of awareness on how to use the wastes productively (mean = 4.06), no agricultural land nearby where wastes can be used (mean = 3.69), excessive odour from waste (mean = 3.66), high cost of chemical treatment (mean = 3.56), high transportation cost (mean = 3.24) and high cost of private waste management agencies (mean = 3.01). Saini et.al. (2022) revealed that non-availability of day old chick in time (45.00%), high mortality in birds (43.33%) and delay in lifting the produce (33.33%) were perceived as 'most serious constraints' by contract broiler poultry farmers. Market price fluctuation (66.67%), high mortality in birds due to diseases (55.00%) and high initial investment (51.67%) perceived as 'most serious constraints' by non-contract broiler poultry farmers and selling of frequent price fluctuations in international markets (75.00%) was perceived as 'most serious constraint' by employees of integrating firms.

From the above researches, this can be concluded that poultry farmers are facing many problems due to lack of information, education on many aspects. Thus, present research investigation was conducted with the objectives: [1] To study socio-economic characteristics of poultry farmers. [2] To assess the constraints faced by poultry farmers.

Material and method

Present research investigation was conducted during farmer's fair held in GBPUA&T, Pantnagar of Udham Singh Nagar district in 2020-21. Farmer's Fair is the grand event and organized twice a year by Directorate of Extension Education, Pantnagar. This is also known as Krishi Kumbh where farmers from all over the country used to come with great enthusiasm. The fair used to showcase latest advancements in the field of poultry, fish farming, agriculture, goat farming etc. Farmers belong to different district viz; Pithoragadh, Almora, Bageswar, Udham Singh Nagar district. In this fair, a total sample of 120 poultry farmers were selected purposively.



Fig. Map of Uttarakhand

Data was collected through Semi-structured interview schedule. Semi-Structured interview schedule was divided into two parts viz; general information and constraints faced by poultry farmers. Suitable statistical tools have been used to draw inferences using SPSS (21.0 version) for Windows. For analysis of constraints Friedman two-way ANOVA was used.

Friedman two-way ANOVA: Friedman test analysis was used to study the constraints faced by poultry farmers. The prime advantage of this technique over simple frequency distribution is that the constraints are arranged based on their severity from the point of view of respondents. Constraints were divided into five main division with sub heads viz; Production and Feeding Constraints, Financial Constraints, Marketing constraints, Institutional Constraint, information reach constraint. The responses to these constraints were recorded on a three-point continuum of 'most severe, severe and not severe' with the respective weightage of 3, 2 and 1. Nonparametric test i.e., Friedman two-way ANOVA by ranks test, as elucidated by Tripathi in 2014 and this method is also used to identify the most severe constraints among the five broad constraints faced by poultry farmers by using the following formula:

$$F_r = \frac{12}{nk(k+1)} \left(\sum_{j=1}^k R_j^2 \right) - 3n(k+1)$$

Results and Discussion

General Information of respondents

Age: The findings revealed that more than half of the respondents (67.50%) belonged to middle age group (36 to 57) followed by 16.67 per cent respondents who belonged to young age group (upto 36 years) category and rest 15.84 per cent who belonged to old age group (more than 57 years) category. Thus, majority of poultry farmers were middle age group.

Education: Majority of respondents (40.84 per cent) were educated till Intermediate level followed by the 25 respondents have completed high school education and 16.67 were educated upto primary school. About 8.34 per cent of the respondents were education up to graduation and above. Thus, we can say that most of the poultry farmers were educated. Based on the observation this can be revealed that most of the poultry farmers have less scientific knowledge about the poultry.

Family size: Majority of the respondents (69.17%) have medium family size (3-6) category followed by the respondents (8.34%) who belonged to large family size (more than 6 family members). It was followed by 5 per cent of the respondents who belonged to small family size category (less than 3).

Annual income (whole Agri-operation): Majority of the respondents (67.50%) had medium annual income (1,08,650 to ₹1,51,300) followed by the respondents (25.83%) with low annual income (less than ₹1, 08,650). Total 6.66 per cent of the respondents have high annual income (more than 1,51,300). These findings are similar to the findings of Sharma et.al, (2018).

Land Holding: Majority (56.67 percentage) of the respondents are holding less than 5 acres of land. This is harsh reality on the village, where farmers are either small or marginal with very little livelihood and thus dependent on additional income from other sources like poultry farming. No. of poultry birds: Majority of poultry farmers were medium farmers (50.84 per cent) followed by large (29.17 per cent) and small (20.00 per cent).

Poultry Experience: About 65.00 per cent of the respondents had medium poultry farming experience (9-25 years), followed by 19.16 per cent of the respondents who had high poultry farming experience (more than 25 years). Total 15.84 per cent of the respondents have low poultry farming experience (less than 9). These findings are in line with the findings of Pant and Singh (2002).

Method of Brooding: Majority of the respondents (58.34 per cent) are using coal method of brooding in their poultry farm. Majority of poultry farmers belong to interior areas of hills where electricity is not available all the times. That's why people used the Singri-coal method for brooding. The coal brooding is the most economical form than gas and electricity. The findings are in line with Pant and Singh (2012).

Type of Roofing for the Shed: Majority (55.84 Percent) of the respondents have thatched roofing for their shed. This is basically because this form of roofing is economical and can be removed and refitted again during cleaning operations. Information seeking behavior: Majority of the respondents (59.16%) had medium level of information seeking behaviour followed by 22.50 per cent of those who had low level of information seeking behaviour and 18.34 per cent of the respondents had high level of information seeking behaviour.

Mass Media Exposure: Majority of the respondents (65.84%) had a medium level of mass media exposure followed by 18.33 per cent of respondents who have high and 15.83 per cent low level mass media exposure. The findings of the present study are in line with the study of Sharma et.al. (2021).

Table 1: Distribution of respondents according to socio-economic characteristics (n=120)

Categories	Frequency	Percentage
<i>Age</i>		
Young age (upto 36 years)	20	16.67
Middle age (36 to 57 years)	81	67.50
Old age (more than 57 years)	19	15.84
<i>Education</i>		
Can Read and Write	11	9.17
Primary school	20	16.67
High school	30	25
Intermediate	49	40.84
Graduate and above	10	8.34
<i>Family type</i>		
Small (<3)	83	22.50
Medium (3-6)	27	69.17
Large (>6)	10	8.34
<i>Annual Income</i>		
Low (< ₹1,08,650)	31	25.83
Medium (₹1,08,650 to ₹1,51,300)	81	67.50
High (> ₹ 1,51,300)	8	6.66
<i>Land Holding</i>		
Less than 5 acres	68	56.67
5-10 acres	28	23.34
10-15 acres	15	12.50
15&above	9	7.50
<i>No. of poultry birds</i>		
Small (<5)	24	20.00
Medium (5-20)	61	50.84
Large (>20)	35	29.17
<i>Poultry Farming Experience</i>		
Short (<9 years)	19	15.84
Medium(9-25 years)	78	65.00
Long (>25 years)	23	19.16
<i>Method of Brooding</i>		
Coal	70	58.34
Gas	37	30.84
Electricity	13	10.84
<i>Type of Roofing for the shed</i>		
Thatched	67	55.84
Tiles	35	29.17
Asbestos	18	15
<i>Information seeking behaviour</i>		
Low	27	22.50
Medium	71	59.16
High	22	18.34
<i>Mass Media Exposure</i>		
Low	19	15.83
Medium	79	65.84
High	22	18.33

Table 2: Distribution of respondents according to constraints faced by poultry farmers

	Constraints	Most Severe	Severe	Least Severe	Mean Score (X)	Overall Rank
1.	<i>Production and Feeding Constraints</i>	(Friedman Mean Rank value Score= 4.86)				
i	High initial investment	62 (51.67)	21 (17.50)	37 (30.84)	2.57	V
ii	Disease attack	67 (55.84)	25 (20.84)	28 (23.34)	2.43	VII
iii	Continuous outages electricity	45 (37.50)	47 (39.17)	28 (23.34)	2.02	X
iv	High losses of feed	81 (67.50)	29 (24.17)	10 (8.34)	2.31	VIII
v	Poor quality of medicines and feed	81 (67.50)	28 (23.34)	11(9.17)	1.43	XII
vi	Lack of quality feeds	77 (64.17)	22 (18.34)	21 (17.50)	1.34	XIII
vii	Inappropriate environmental conditions	71 (59.17)	30 (25)	19 (15.84)	2.94	II
viii	Poor quality chicks	56 (46.67)	29 (24.17)	35 (29.17)	2.41	IX
ix	Scarcity of trained labor	51 (42.50)	40 (33.34)	29 (24.17)	2.01	XI
x	High mortality rate	83 (69.17)	20 (16.67)	17 (14.17)	1.30	XIII
xi	High mortality in birds due to diseases	63 (52.50)	32 (26.67)	25 (20.84)	2.51	VI
xii	Lack of technical knowledge in poultry production	71(59.17)	37 (30.84)	12 (10)	3.31	I
xiii	Inadequate space & lack of storage facilities	66 (55)	37 (30.84)	17 (14.17)	2.67	IV
xiv	Adverse climate	43 (35.84)	65 (54.17)	12 (10)	2.92	III
2.	<i>Financial Constraints</i>	(Friedman Mean Rank value Score= 3.12)				
i	High cost of labor	46 (38.34)	56 (46.67)	18 (15)	2.67	VI
ii	High cost of energy	76 (63.34)	23 (19.17)	21 (17.50)	2.13	VII
iii	High cost of chicks	65 (54.17)	32 (26.67)	23 (19.17)	2.79	IV
iv	High cost of feed	50 (41.67)	43 (35.84)	37 (30.84)	3.42	I
v	Lack of capital	56 (46.67)	31(25.84)	33 (27.50)	2.14	VIII
vi	High cost of drug and vaccines	75 (62.50)	29 (24.17)	16 (13.34)	1.57	IX
vii	Non-availability of credit	69 (57.50)	32 (26.67)	19 (9.50)	3.37	II
viii	High costs of veterinary supervision	69 (57.50)	54 (45.00)	15 (12.50)	2.78	V
ix	High medicines cost	76 (63.34)	25 (20.84)	19 (15.84)	3.32	III
3.	<i>Marketing constraint</i>	(Friedman Mean Rank Value Score= 3.92)				
i	Poor marketing information	50 (41.67)	43 (35.84)	37 (30.84)	3.42	I
ii	Market/price fluctuation	63 (52.50)	32 (26.67)	25 (20.84)	2.51	III
iii	Competition from imported frozen chicken	71 (59.17)	29 (24.17)	20 (16.67)	1.87	IV
iv	Lack of marketing availability	67 (55.84)	37 (30.84)	30 (25)	2.83	II
4.	<i>Institutional Constraint</i>	(Friedman Mean Rank Value Score= 3.27)				
i	Lack of training on modern poultry production practices	83 (69.17)	20 (16.67)	17 (14.17)	1.45	II
ii	Poor poultry producers association	64 (53.34)	43	13	2.31	I
5.	<i>Information Reach constraint</i>	(Friedman Mean Rank Value Score= 3.69)				
i	Poor communication facilities	80 (66.67)	40 (33.34)	20 (16.67)	1.09	III
ii	Inadequate extension advisory services	87 (72.50)	17 (14.17)	16 (13.34)	2.11	I
iii	Non-availability of veterinary services from public sector	76 (63.34)	23 (19.17)	21 (17.50)	2.13	II

Constraints faced by poultry farmers

Production and feeding Constraints: Table 2 depicts that most severe production constraint perceived by poultry farmers was lack of technical knowledge in poultry production followed by inappropriate environmental conditions and adverse climate. The fourth major constraint was found to be inadequate space and lack of storage facilities followed by high initial investment. Majority of poultry farmers reported that high mortality in birds due to diseases and disease attack were also some of the constraints. High losses of feed, poor quality chicks, continuous outages electricity and scarcity of trained labor were also some constraints faced by poultry farmers. These findings are similar to the findings of Rani and Subhadra (2009).

Financial Constraints: Majority of poultry farmers reported that high cost of feed followed by non-availability of credit. The third constraint perceived by poultry farmers was high feed and medicines cost followed by high cost of chicks and high costs of veterinary supervision. The eight constraint was lack of capital followed by high cost of drug and vaccines. **Marketing constraints:** Majority of poultry farmers reported that poor marketing information was the severe constraint followed by competition of chicken from other province. The third constraint was market/price fluctuation followed by competition from imported frozen chicken.

Institutional Constraint: Majority of poultry farmers were facing poor poultry producers association as a major constraint followed by lack of training on modern poultry production practices.

Information Reach constraint: Majority of poultry of farmers were facing inadequate extension advisory services followed by non-availability of veterinary services from public sector and poor communication facilities. These findings are in line with the results of previous researcher in India (Gasura et.al. 2013) and Africa (Baruwa & Idowu, 2021).

Table 3 also showed that asymptotic significance obtained from the Friedman test was 0.000 ($p < 0.01$) and chi-square value was 56.78 with 3 degrees of freedom. Significance value showed, Monte Carlo Significance at 99 percent Confidence Interval. Hence, it can be interpreted that there was significant difference between seven different sub-dimensions of constraints faced by the poultry farmers.

Table 3 further revealed that the mean ranks obtained using Friedman test was highest for production and feeding constraints, which means that it was most severe constraint among all the five broad constraints. The second most severe constraint was the marketing constraints. Third most severe constraint was lack of information reach constraints followed by Institutional constraints, which implied that it was the least severe broad constraints.

Table 3. Friedman test result

Test Statistics	Values
N	120
Chi square	56.78
df	3
Asymp. sign	.001
Monte Carlo Sig.	.001
99% Confidence Interval	.001

Conclusion

On the basis of findings of the present study, it can be concluded that the poultry farmers were middle age group, educated and had medium annual income. Majority of poultry farmers were using Coal as Method of Brooding and Thatched type of Roofing for the shed. Majority of poultry farmers were facing production and feeding constraints, marketing constraints, lack of information reach constraints and Institutional constraints. This research investigation provide the data on demographic profile as well as constraints of poultry farmers which will be useful for the extension personnel, veterinary extension officers and field workers to develop strategy for the poultry farmers.

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