



Contribution of Commercial Desi Bird Venture to Socio-economic Well being of Households in Tamil Nadu, India

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ABSTRACT

The present study attempts to assess the contribution of commercial desi bird venture to socio-economic well being of the households in Tamil Nadu. A descriptive research design was adopted for the study. Data were collected from 60 farmers involved in commercial desi bird venture in Namakkal district of Tamil Nadu using proportionate random sampling. The average poultry meat and egg consumption of families rearing commercial desi venture was 56 kg and 385 eggs, respectively per annum. The average net income generated in commercial desi bird venture was Rs.2.2 lakh and contribution to total family income was 30.0%. Flock size, investment and expenditure on feed were the factors that significantly influenced the net income from poultry in commercial desi bird venture. The income generated was utilized for household purpose, to increase flock size, agriculture expenses and education of children. Incidence of disease, predator problem, damage to crops and lack of government support were ranked as important constraints. Thus, it could be concluded that commercial desi bird venture is a viable and profitable enterprise and flock size, investment and expenditure on feed were the factors that significantly influenced the net income from poultry in commercial desi bird venture.

Key Words: Commercial desi bird, Constraints, Contribution, Income, Utilization.

INTRODUCTION

Due to changing tastes, costs and income over time, meat consumption has shifted over time from beef, veal, lamb, mutton and chevon to a greater consumption of poultry and fish (Akbar and Boz, 2005). The popularity of poultry meat is on the rise during the last two decades and presently accounting for about 45 per cent of the total meat consumed, therefore has become the most popular meat from any single livestock species (Singh, 2019). The preference and consumption of chicken meat can be considered as a universal phenomenon accepted by consumers in India. The increase of chicken meat consumption is due to relatively low cost in comparison to other meat, and the acceptance by all religions (Devi *et al*, 2014). Ahmad and Singh (2019) concluded that Srinidhi birds performed

better in terms of body weight gain, age at sexual maturity, egg production and egg weight. The bird adopted well in the local climatic conditions of Ambala District. So, farmers from rural areas of Ambala could rear the Srinidhi birds for their livelihood and nutritional security. Saikia *et al* (2017) reported that Vanaraja birds adapted well under traditional backyard rearing system among the tribal communities in Dhemaji district of Assam. Likewise, Deori (2015) stated that the average body weight gain and feed conversion ratio were better in probios fed group compared to the control group of Kuroiler birds in Arunachal Pradesh.

The consumers polarised with unfavourable attitude towards broiler chicken, perceive desi chicken meat as more natural food in comparing with broiler meat. Thus, a niche market for desi bird

meat and eggs has emerged in late 2000s. This paved way for shifting the backyard poultry production from subsistence to commercial in nature. Thus, a commercial desi bird venture has evolved on the account of homogenisation of mass market. This structural transformation offers opportunities for poverty reduction and an increase in food security (FAO, 2019). Against this background, an attempt was made to assess the contribution of commercial desi bird venture to socio-economic well being of the households in Tamil Nadu to advocate it as a self employment venture in rural areas.

MATERIALS AND METHODS

A descriptive research design was adopted for the study. Farmers rearing more than 50 desi birds were operationalized as commercial desi bird farmers (Ahuja and sen, 2007). List of commercial desi bird farmers were collected from krishi vigyan kendra, hatcheries, chick suppliers and also from other commercial desi bird farmers. Finally, a list of 92 farmers who were rearing desi birds as commercial venture was prepared and this list constituted the sample frame. By using Dalenius and Hodges method, the farmers were grouped into three categories as low, medium and high based on flock size. By using proportionate random sampling, 60 commercial poultry farmers were selected from all the three categories for the study. A well semi structured pre tested interview schedule was used for data collection. The collected data were tabulated and subjected to analysis by using statistical tools such as frequency, percentage, cumulative square root frequency method, Rank Based Quotient and ordinal logistic regression.

RESULTS AND DISCUSSION

Sources of motivation to start commercial desi bird venture

Majority (83.34%) of the respondents were motivated by non-institutional sources like family members, neighbours, friends and other commercial desi bird farmers to start commercial desi bird venture. The result was in accordance

with the finding of Rogers (2004) who stated that the members within the social system are more influential in decision making process. The other sources were poultry service providers (33.33%); institutional sources (28.34%) such as veterinary dispensaries, Krishi Vigyan Kendra and veterinary college and mass media (8.33%).

Push and pull factors influencing the farmers to start commercial desi bird venture

It could be inferred from Table 1, the need for additional income (18.33%), nutritional security of the family (11.67%), availability of unused / uncultivated land (10.0%) and low agricultural income (8.33%) were the push factors influenced the respondents to enter into commercial desi bird venture. Low workload (90.0%) was the main pull factor influenced the respondents to enter into commercial venture. High income (75.0%) and less expenditure (45.0%) were the other pull factors that influenced the respondents to prefer this venture. Semi intensive system of rearing in commercial desi venture requires minimum workload, less investment, less expenditure and better returns and this might have influenced the respondents to start commercial desi bird venture. Thus it could be concluded that the pull factors highly influenced the respondents to take up this commercial desi bird venture than push factors.

Nutritional security of the households

Nutritional security of the households of commercial farms was studied in terms of meat and egg consumption of the households per annum. More than two-third (45.00%) of the respondents family consumed 26 to 73 kg of meat per annum followed by more than 73 kg and up to 26 kg by 31.67 per cent and 23.33 per cent respectively. The average annual meat consumption of the family was 56 kg. Regarding egg consumption, two-third (40.0%) of the respondents' family consumed 200 to 400 eggs per annum followed by more than 400 eggs (35.0%) and up to 200 eggs (25.0%) per annum. The average annual egg consumption of the family was 385 eggs. The ICMR recommendation for meat is

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Table 1. Push and pull factors influencing the farmers to start commercial desi bird venture.

(n=60)

Sr. No	Factor	Frequency*	Percentage
A	Push factors		
1	Need for additional income	11	18.33
2	Nutritional requirement of the family	7	11.67
3	Availability of unused / uncultivated land	6	10.00
4	Low agriculture income	5	8.33
B	Pull factors		
1	Low work load	54	90.00
2	High income	45	75.00
3	Low expenditure	27	45.00
4	Low land requirement	5	8.33
5	Interest	2	3.33
6	Easy marketability	1	1.67

* Multiple responses

10.95 Kg/person/annum and egg was 180 numbers /person/annum (Borah and Halim, 2014). With majority of the families having a family size of five members, the meat consumption was at par with the ICMR recommendation while the egg consumption needs to be improved. But the consumption of meat and egg among the households commercial desi bird venture was more than the country's per capita availability of eggs and meat i.e., 69 eggs and 2.5 kg of meat per annum, respectively (Kumar *et al*, 2019).

Benefit cost ratio in commercial desi bird venture

An equal proportion (41.67%) of the respondents had the benefit cost ratio of up to 4.3 and 4.3 to 9.7 in commercial desi bird venture. Only 16.66 per cent of the respondents had the benefit cost ratio of more than 9.7. Marketing method and system of rearing such as direct sale of birds to consumers and semi-intensive system in commercial desi bird venture might have influenced the benefit cost ratio. The finding on benefit cost ratio derives support from Awasthi *et al* (2015) who found that the average

benefit cost ratio in backyard poultry production was 8.32.

Income from commercial desi bird venture

More than half (56.67%) of the respondents had the annual net income of Rs.1 lakh to 3 lakh from commercial desi bird venture followed by Rs.0.5 lakh to 1 lakh (18.33%), Rs.3 lakh to 5 lakh (10.0%), more than Rs.5 lakh (8.33%) and up to Rs.0.5 lakh (6.67%). The average net income in commercial desi bird venture was 2.2 lakh. The volume of operation in commercial farming might be attributed for high income. However, Srinivas *et al* (2017) reported that BPL families of Telangana state received Rs. 8950/- as net profit from 20 backyard birds per annum. Thus, it can be concluded that commercial desi bird venture is more profitable and advantageous to backyard poultry rearing and the reason being economies of scale.

Contribution of commercial desi bird venture income to total family income

For half of the respondents (50.0%), 15 to 45 per cent of the total family income was contributed by commercial desi bird venture. More than 45 per

Table 2. Nutritional security of the households. (n=60)

Sr. No	Variable	Category	No. (%)
1	Meat consumption	Up to 26 kg	14 (23.33)
		26-73 kg	27 (45.00)
		More than 73 kg	19 (31.67)
2	Egg consumption	Up to 200 eggs	15 (25.00)
		200-400 eggs	24(40.00)
		More than 400 eggs	21(35.00)

cent and up to 15 per cent of the total family income was contributed by poultry for 26.67 per cent and 23.33 per cent of the respondents respectively. However, Kumatakar (2000) informed that 54% of the backyard poultry farmers received 11 to 20 per cent of total income from back yard poultry farming. The substantial contribution of income from commercial desi bird venture to total family income might be due to large volume of operation of commercial desi bird venture than rearing in backyard.

Income utilization by commercial desi bird farmers

The utilization of income generated from commercial desi bird venture by the farmers was studied and analysed by using Rank Based Quotient (Table 3). The income was mainly utilized for household purpose and ranked first with RBQ value of 75.83 followed by increase the flock size (33.06), agricultural expenses (29.72), education of children (25.83) and savings (21.39). Most of the farmers utilized the major income for day-to-day activities and emergency purposes since the birds are easily

liquidated. The finding was in line with the finding of Chaturvedani *et al* (2015). They also revealed that majority (87.15%) of the respondents utilized the income generated from backyard poultry rearing for household purpose followed by poultry production (77.50%), recreational purpose (74.20%), medical expenses (43.30%), children education (29.20%), agriculture (10.0%) and livestock purchase (5.80%).

Relationship between socio-economic characteristics of commercial desi bird farmers and income from commercial desi bird venture

In order to understand the relationship between socio-economic characteristics of the respondents and income from commercial desi bird venture, ordinal logistic regression was carried out. It could be depicted (Table 4) that 81.20 per cent of the variance in dependent variable was contributed by selected independent variables such as educational status of the respondents, attitude towards commercial desi bird venture, entrepreneurial behaviour, flock size, investment on infrastructure, livability of birds, expenditure on feed, weight at marketing and source

Table 3. Income utilization by commercial desi bird farmers. (n=60)

Sr. No	Purpose	RBQ value	Rank
1	Household purpose	75.83*	I
2	Increase the flock size	33.06	II
3	Agricultural expenses	29.72	III
4	Education of children	25.83	IV
5	Savings	21.39	V

*Multiple responses

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Table 4. Model summary of logistic coefficients of income from commercial venture.

Step	Cox & Snell R Square	Nagelkerke R Square
1	0.573	0.812

Table 5. Relationship between socio-economic characteristics of farmers and income from desi bird venture.

Variable		Estimate	Std. Error	Wald	df	Sig.	95% confidence interval		Exp (B)
							Lower Bound	Upper Bound	
Threshold	Net income (Low level)	4.70	14.61	0.10	1	0.75	-23.94	33.34	
	Net income (Medium level)	27.19	19.30	1.99	1	0.16	-10.64	65.014	
Location	Educational status of the respondents	-0.32	0.55	0.33	1	0.57	-1.40	0.77	0.728
	Entrepreneurial behaviour	0.20	0.14	2.19	1	0.14	-0.07	0.47	1.222
	Attitude towards commercial venture	0.03	0.10	0.13	1	0.72	-0.15	0.22	1.034
	Flock size	0.03	0.01	5.39	1	0.00	0.01	0.05	1.028*
	Investment on infrastructure	1.4x10 ⁻⁵	0.00	2.89	1	0.09	-2.24	3.15	1.000
	Liveability of birds	-0.02	0.09	0.05	1	0.83	-0.20	0.16	0.980
	Expenditure on feed	-0.13	0.06	4.09	1	0.04	-0.26	-0.01	0.878*
	Marketing weight	0.59	1.20	0.25	1	0.62	-1.75	2.94	1.810
	Sources of chicks (own)	14.64	9.99	2.14	1	0.14	-4.96	34.23	2.2 x 10 ⁶
	Sources of chick (purchased)	0a	.	.	0	.	.	.	

of chicks. In logistic regression, the logit model is in terms of log of the odds ratio or logit. In logistic model, 'B' coefficients the effect of one unit change in independent variables on the log odds. The ExpB column presents the exponentiated value of B.

This parameter is set to zero because it is redundant

The data (Table 5) show that flock size and expenditure on feed were significant at 5 per cent level. Investment on infrastructure was significant

at 10 per cent level. This could be interpreted that if the farmer increases one unit of flock size, the odds of income from commercial desi bird venture could increase by a factor of 1.028 units while other variables are kept constant. Similarly, if the farmer increases the investment and feed expenditure by one unit, the odds of income from commercial desi bird venture could increase by the factor of 1.00 and 0.878 units, respectively when other variables are kept constant.

Table 6. Constraints perceived by the farmers in commercial desi bird venture. (n=60)

Sr. No	Constraint	RBQ value	Rank
1	Incidence of disease	50.19	I
2	Predator problem	45.74	II
3	Damage to crops	41.67	III
4	Lack of government support	37.22	IV
5	Low market price	25.37	V
6	Low weight gain	7.41	VI
7	Marketing difficulties	3.33	VII
8	High feed cost	2.96	VIII
9	Cannibalism	1.67	IX

*Multiple responses

Constraints perceived by the farmers in commercial desi bird venture

The incidence of diseases was ranked as the first and foremost constraint by the respondents with RBQ value of 50.19. Non availability of scientific package of practices for preventive measures might be the reason for ranking the incidence of diseases as first constraint. Predator problem and damage to crops were ranked as second and third constraints with the RBQ value of 45.74 and 41.67, respectively. Most of the farmers were rearing birds in semi intensive system and this might be the reason for predator problem as well as damage to field crops. Lack of government support, low market price, low weight gain, marketing difficulties, high feed cost and cannibalism were the other constraints perceived by the respondents with RBQ value of 37.22, 25.37, 7.41, 3.33, 2.96 and 1.67 respectively. Similar results were reported by Ponnusamy (2010) and Khandit *et al* (2011) in backyard poultry farming. Ponnusamy (2010) reported that the major constraint in backyard poultry production were disease incidence, damage to agriculture crops and cattle feed, problem of predators, low genetic potential and polluting house environment with RBQ values of 81.91, 72.52, 66.78, 66.61 and 61.74, respectively. Khandit *et al* (2011) also expressed that the major constraints in backyard poultry farming was high disease incidence (100.0%) followed by

attack of predators (89.17%), lack of knowledge about scientific poultry management practices (56.25%), lack of time due to farm work (51.25%) and destruction of vegetable crops (42.50%). Thus, it could be concluded that farmers need to be educated in control of diseases in desi bird rearing, ways and means to protect the birds from predators and preventing the birds from causing damage to crops while taking up backyard poultry farming irrespective of rearing method.

CONCLUSION

It could be concluded that commercial desi bird venture was a viable and profitable enterprise and flock size, investment and expenditure on feed were the factors that significantly influenced the net income from poultry in commercial desi bird venture. Hence promoting commercial desi bird venture as self-employment enterprise among the farmers in rural areas and would help to alleviate poverty and achieving nutritional security of the rural households.

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