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RESEARCH ARTICLE

CONSTRAINTS ANALYSIS OF BROILER POULTRY FARMING UNDER CONTRACT AND
NON-CONTRACT SYSTEMS IN KARNATAKA, INDIA

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ABSTRACT

The objective of this study was to identify and rank constraints in contract and non-contract broiler poultry farming in India's Karnataka state. The data was collected from 90 contract and 90 non-contract broiler poultry farmers from Shivamogga, Davanagere and Chitradurga Districts. The data was analysed by using Garrett's ranking technique. The most significant constraints faced by the contract broiler poultry farmers were high mortality due to diseases, commercial tariff for electricity charges, lack of financial support, quality of medicines and feed and inadequate extension advisory services. Most significant constraints faced by the non-contract broiler poultry farmers were, fluctuation in the market price, high mortality due to diseases, non-availability of chicks in time, inadequate extension advisory services and commercial tariff for electricity charges. The related implications for policy are discussed.

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INTRODUCTION

Broiler poultry farming is playing vital role in livelihood security of small holder farmers and increasing the overall nutritional security of nation by means of supplying good source animal protein. Poultry segment is growing at a much faster rate than any other element of agriculture or agriculture allied sector. The Indian poultry-meat industry has been growing at a very rapid rate in recent decades, by transforming gradually from unorganized, small-scale backyard farming into large-scale, organized farming. A contract farming arrangement involves a wage contract between an integrator who supplies the intermediate inputs and procures the output (as per pre-decided terms) and a poultry farmer who provides inputs such as management, rearing and care taking. The sector has evolved over the years from a backyard activity to an organized and scientific large scale poultry industry.

India is the fifth largest producer of poultry meat and as produced 3.16 million tons of broiler meat in 2012, up from 1.8 million tons in 2005, 1.65million tons in 2004 and 1.6 million tons in 2003 and the per capita availability of poultry meat is

2.15 kg as against recommended level of 11 kg of meat per annum (Sasidhar 2013). According to US Department of Agriculture estimates, India's poultry meat production grew about 6 percent annually during the 1980s, accelerated to 11 percent annually in the 1990s and to nearly 19 percent during 2007 – 2011 and 20 percent during 2012. (Karthikeyan and Nedunchezian 2013) Integration has helped to propel poultry to a commercial level. The increase in scale has provided the 'push factor' to take care of the 'pull factor' caused by the growth in the per capita income thereby providing choices to the consumer and keeping the price in check. Approximately 40 percent of the broiler production in India comes from contract farming (Fairoze et al., 2006). Poultry sector in India has undergone a shift in both structure and functioning in last two decades. Large scale integrators started implementing contract broiler farming. The change in the poultry sector is seen because of notable amount of investment done in the breeding, hatching, and management and as well as poultry meat processing industry. As per the 19th livestock census (2012) of Karnataka, the poultry population is 5.344 crores which is only 7.33 per cent (Ranks 4th) in the country. Indian broiler meat consumption is growing at the pace of production, which is estimated at approximately 10 percent annually. India consumes nearly all of the broiler meat it produces. Post forecasts Calendar Year (CY) 2012 broiler meat consumption at 3.2 million tons, up by 10 percent over 2011. India's

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per capita consumption of poultry meat is estimated around 3 kg per annum, with chicken emerging as a preferred non-vegetarian protein option. Industry estimates suggest that broiler meat consumption will be doubled by 2014-15. (USDA-FAS 2011) Major drivers of consumption are: an expanding middle class, increasing employment levels and incomes, new demand for ready-to-eat products and the growing presence of affordable quick service restaurants, and a general preference for poultry meat over other meats due to low prices and cultural and religious non-preferences for pork and beef. Hence, Keeping in view of these points, the present study was conducted to assess the constraints faced by contract and non-contract broiler poultry farmers and to elicit the suggestions to address constraints in broiler poultry farming.

MATERIALS AND METHODS

The study was conducted with Ex post facto research design by collecting data from the broiler poultry farmers of Shivamogga, Davanagere and Chitradurga districts of Karnataka. these districts were purposively selected as they have moderately dense broiler poultry population of mid-Karnataka. The data was collected from 90 contract and 90 non-contract broiler poultry farmers by taking 30 farmers each from the three districts. The data collected were coded, tabulated and Garrett's ranking technique was used to analyse the constraints perceived by poultry farmers. Farmers were asked to list and rank all constraints that they deemed as important which were limiting broiler poultry production.

These factors were then transformed into units of scores by using the following formula:

$$\text{Per cent position} = 100 (R_{ij} - 0.50) / N_j$$

Where R_{ij} is the Rank given for the i^{th} factor by the j^{th} individual, N_j is the Number of factor ranked by the j^{th} individual. The percent position was converted into scores by referring to the table given by Garrett and Woodworth (1969). The scale values for first rank to tenth rank are 81, 70, 63, 57, 52, 48, 42, 37, 29 and 18 respectively. Then for each constraint, the scores of the individual respondents were added together and divided by the total number of respondents for whom scores were added. These mean scores for all the factors were arranged in descending order separately for Contract broiler farmers and Non-contract broiler farmers and the most significant constraints were identified through the ranks assigned.

RESULTS AND DISCUSSION

Data presented in Table 1 on constraints of contract broiler farmers revealed that, high mortality in birds due to diseases was ranked as First constraint with a mean score of about 63.81, followed by charging for the electricity at the rate of commercial tariff (60.00), lack of financial support (53.55), Quality of medicines and feed (50.54), inadequate extension advisory services (50.01), non-availability of veterinary services from public sector i.e. government veterinary dispensaries (48.89), non-availability skilled labourers (48.40), non-supply of chicks in time (46.57), high feed and medicines

cost (44.39) and too much fluctuation in market price of chicken (43.71) in that order respectively.

Data presented in Table 2 on constraints of non-contract broiler farmers revealed that, too much fluctuation in market price of chicken was perceived as major constraint with a mean score of 64.20, followed by high mortality in birds due to diseases (58.94), non-availability of chicks in time (53.06), inadequate extension advisory services (52.27), charging for the electricity at the rate of commercial tariff for the power supplied to the poultry farms (51.97), high feed and medicines cost (49.40), lack of financial support (45.79), non-availability of veterinary services from public sector i.e. government veterinary dispensaries (45.28), Quality of medicines and feed (43.42) and non-availability of skilled labourers (43.05) in that order respectively.

Among the constraints identified in this study, the constraint of non-availability of veterinary services is in contrast and the constraint of fluctuation in the market price which identified as risk and uncertainty in market is in agreement with the findings of Ghasura *et al.* (2013). Constraint of fluctuation in the market price and High mortality due to diseases, are in agreement with the findings of Shiraz Zakir (2008). Constraint of non-availability of extension advisory services is in agreement with the findings of Olaniyi *et al.* (2008).

The Constraint of non-availability of chicks (major input) and constraint of high feed prices are in agreement with the findings of Kalamkar (2012).

The constraint of high feed cost is in agreement with the findings of Sedagha and Tuffour (2013) and Irene Ogali (2011).

The constraint of Non availability of day old chicks, constraint of financial support from government, non-availability of extension advisory services are in agreement with the findings of Nath *et al.* (2012).

The constraint of high feed and medicines cost, Constraint of non-availability of veterinary health services, constraint of commercial tariff for electricity charges are in agreement with the findings of Swain *et al.* (2012).

The constraint of quality of medicines and feed is in agreement with the findings of Bhende (2006).

The constraints of financial support is in contrary to the finding of Mohanraj and Manivannan (2012).

Based on the findings, it is concluded that the most significant constraints that are faced by the contract broiler poultry farmers are, High mortality due to diseases, Commercial tariff for electricity charges, Lack of financial support, Quality of medicines and feed and inadequate extension advisory services. The most significant constraints that are faced by the non-contract broiler poultry farmers are Fluctuation in the market price, high mortality due to diseases, non-availability of chicks in time, inadequate extension advisory services and Commercial tariff for electricity charges.

Table 1. Distribution of Contract poultry farmers based on the constraints in broiler poultry farming

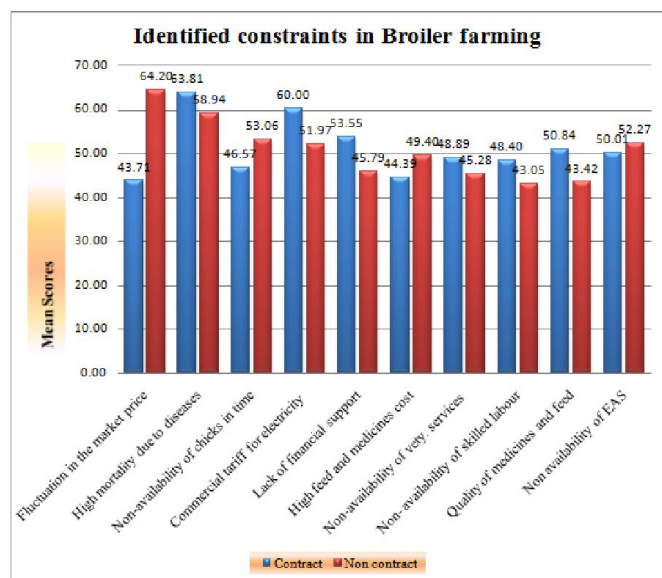
Constraints	Ranks										Total	Total score	Mean Score	Rank	
	I	II	III	IV	V	VI	VII	VIII	IX	X					
Scale	81	70	63	58	52	48	42	37	29	18					
Fluctuation in the market price	f	0	0	1	2	2	4	3	1	3	1	17	743	43.71	10
	fx	0	0	63	116	104	192	126	37	87	18				
High mortality due to diseases	f	29	15	11	10	8	5	5	3	2	2	90	5743	63.81	1
	fx	2349	1050	693	580	416	240	210	111	58	36				
Non-availability of chicks in time	f	7	5	9	4	8	10	8	8	12	10	81	3772	46.57	8
	fx	567	350	567	232	416	480	336	296	348	180				
Commercial tariff for electricity charges	f	15	28	9	6	7	5	8	3	5	3	89	5340	60.00	2
	fx	1215	1960	567	348	364	240	336	111	145	54				
Lack of financial support	f	12	6	9	9	5	7	9	6	8	3	74	3963	53.55	3
	fx	972	420	567	522	260	336	378	222	232	54				
High feed and medicines cost	f	1	5	2	10	6	8	23	16	7	5	83	3684	44.39	9
	fx	81	350	126	580	312	384	966	592	203	90				
Non-availability of veterinary Services	f	6	8	10	5	7	2	2	8	6	11	65	3178	48.89	6
	fx	486	560	630	290	364	96	84	296	174	198				
Non-availability of skilled labour	f	2	6	17	8	5	6	4	15	13	2	78	3775	48.40	7
	fx	162	420	1071	464	260	288	168	555	377	10				
Quality of medicines and feed	f	9	8	7	10	14	7	4	2	1	15	77	3915	50.84	4
	fx	729	560	441	580	728	336	168	74	29	270				
Non-availability of Extension advisory services	f	9	7	8	10	11	17	3	6	8	10	89	4451	50.01	5
	fx	729	490	504	580	572	816	126	222	232	180				
Total $\sum f$		90	88	83	74	73	71	69	68	65	62				

NOTE: x= Scale value; f=Number of broiler poultry farmers; fx= Score

Table 2. Distribution of Non-Contract poultry farmers based on the constraints in broiler poultry farming

Constraints	Ranks										Total	Total score	Mean Score	Rank	
	I	II	III	IV	V	VI	VII	VIII	IX	X					
Scale	81	70	63	58	52	48	42	37	29	18					
Fluctuation in the market price	f	30	14	10	13	8	5	4	1	3	2	90	5778	64.20	1
	fx	2430	980	630	754	416	240	168	37	87	36				
High mortality due to diseases	f	18	16	14	9	6	4	8	4	5	4	88	5187	58.94	2
	fx	1458	1120	882	522	312	192	336	148	145	72				
Non-availability of chicks in time	f	7	5	11	14	17	11	6	8	5	2	86	4563	53.06	3
	fx	567	350	693	812	884	528	252	296	145	36				
Commercial tariff for electricity charges	f	6	6	9	5	8	12	10	7	4	2	69	3586	51.97	5
	fx	486	420	567	290	416	576	420	259	116	36				
Lack of financial support	f	4	4	10	6	12	10	10	9	11	10	86	3938	45.79	7
	fx	324	280	630	348	624	480	420	333	319	180				
High feed and medicines cost	f	7	9	8	8	12	10	8	7	10	8	87	4298	49.40	6
	fx	567	630	504	464	624	480	336	259	290	144				
Non-availability of veterinary Services	f	3	4	9	11	9	5	12	10	13	9	85	3849	45.28	8
	fx	243	280	567	638	468	240	504	370	377	162				
Non-availability of skilled labour	f	3	8	6	7	4	6	9	15	12	14	84	3616	43.05	10
	fx	243	560	378	406	208	288	378	555	348	252				
Quality of medicines and feed	f	5	10	5	5	5	4	8	13	11	17	83	3604	43.42	9
	fx	405	700	315	290	260	192	336	481	319	306				
Non-availability of Extension advisory services	f	7	12	6	9	5	19	10	6	5	4	83	4338	52.27	4
	fx	567	840	378	522	260	912	420	222	145	72				
Total $\sum f$		90	88	88	87	86	86	85	80	79	72				

NOTE: x= Scale value; f=Number of broiler poultry farmers; fx= Score



To address these constraints it is suggested to strengthen the co-operative system in poultry marketing for the benefit of non-contract farmers, provide public veterinary Services as well as extension advisory services to poultry farmers, Government control over the main inputs like raw feed ingredients for poultry, subsidized power supply as given to agriculture and also financial support from nationalized banks and private banks for small and medium farmers.

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