

*Original Research***Identification of Determinants of Choice of Preferences in Attapadi Tribal Farmers for Alternative Livestock Enterprises****A. Nisha^{1*}, N. Vimal Rajkumar², N. Kumaravelu³, T. Senthilkumar⁴ and Amal Sasi⁵**

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Abstract

The present study was conducted purposively during November 2018 to March 2019 in Attappadi block of Palakkad district in Kerala as this is one among the largest tribal settlements of Kerala with considerable livestock population. Expost facto research design was adopted for the study. The sample was comprised of 120 tribal livestock farmers as respondents (n=120). The respondents belonged to three different tribal communities viz., Irulas (92.5 %), Mudugas (5.83 %) and Kurumbas (1.67 %). The data showed that majority of the respondents had low herd size unit (<1 unit) of livestock (88.33 %) followed by medium herd unit size (7.50 %) and large (4.17 %) respectively. Data pertaining to Knowledge level revealed that majority of the respondents (56.67 %) had low level of knowledge followed by medium level of knowledge (41.67 %) and only a few of the respondents (1.66 %) had high level of knowledge regarding scientific management including breeding, feeding and health care practices of animal husbandry. The data found that majority of the farmers (93.33 %) had choice of preferences for alternative livestock enterprises. The relationship analysis of socio-economic attributes as determinants with choice of preferences for alternative livestock enterprises revealed that the independent variable, gross annual income of the tribal farmers was found to have positive and significant correlation at 1 per cent level of significance ($r=0.252$). Economic motivation of farmers had positive and significant (0.181) relationship while experience of the tribal farmers in farming had negative and significant relationship ($r= -0.228$) at 5 per cent level of significance.

Key words: Alternative Enterprises, Choice of Preferences, Livestock, Scientific Practices, Tribal Farmers

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Introduction

The tribes of Central and Western Ghats are expanded towards the south and considered as the tribes of western Andhra Pradesh, Karnataka, western Tamil Nadu and Kerala. Among them the most important tribes include Toda, Kota, Kurumba, Irula, Allar and Bagada. About eight per cent of the Indian population belongs to a category listed as “Scheduled Tribes” deemed under article 342 of the constitution of India. In Kerala, there are 36 tribal communities with a total population 4, 84,839 (Census, 2011). One among the largest and diverse tribal concentrated districts of Kerala, Palakkad has 10.1 per cent of the total tribal population of the state. Attappadi is the largest tribal settlement area of Palakkad district with three tribes viz., Irulas (84 %), Mudugas (10 %) and Kurumbas (6 %) who are traditionally engaged in agricultural activities. Crop farming and livestock keeping are the major source for livelihood and an essential part of the culture of the tribes of Attappadi. In general, the crop enterprise could not help the tribal community to increase their income and employment because of poor productivity, low availability of per capita arable land and lack of other income generating avenues (Gour *et al.*, 2015). Hence, there is heavy dependence of tribal households on animal husbandry activities (Meganathan *et al.*, 2010). The tribal livestock farmers are not able to exploit the full potential of their livestock enterprises and to explore the vantages of other livestock enterprises. Hence, it is a time demanding challenge to probe into their choices of preferences for alternative livestock enterprises to design programmes and activities by development agencies. Considering the above facts, the present study was undertaken with the following objectives-

- i. To study the socio-economic profile of tribal livestock farmers and their knowledge level in scientific animal husbandry practices.
- ii. To determine the relationship between antecedent characteristics of farmers and their choice of preferences for alternative livestock enterprises.

Materials and Methods

The present study was conducted purposively during November 2018 to March 2019 in Attappadi block of Palakkad district in Kerala as this is one among the largest tribal settlements with considerable livestock population. Attappadi block comprised of three panchayats, Agali, Pudur and Sholayoor. A total of 40 tribal livestock farmers from each of the three panchayats, thus a total of 120 tribal livestock farmers were selected randomly as respondents for the study. Expost facto research design was employed. Personal interviews by pretested interview schedule and Participatory Rural Appraisal (PRA) approach was used to serve the purpose of data collection. The following variables namely age, sex, community, education, family size, family

type, land holding, occupation, annual gross income, herd size, experience in livestock farming, economic motivation and risk orientation were studied.

Results and Discussion

Socio-Economic Profile of the Tribal Livestock Farmers

According to their age the tribal livestock farmers were categorized into three groups, viz., young, middle and elders. The data presented in Table 1 reveal that majority of the tribal livestock farmers (76.66 %) belonged to elder age group, while 16.67 per cent of the respondents were from middle age group and 6.67 per cent were young. This might be due to the lack of interest among youth in crop farming and livestock rearing. Henceforth, while planning programmes in livestock sector more attention should be given to attract vibrant and enthusiastic young age groups to livestock farming like Indian Council of Agricultural Research (ICAR) initiated programme - "Attracting and Retaining Youth in Agriculture" (ARYA) project. Regarding community, 92.5 per cent respondents belonged to Irula tribes, whereas, only 5.83 per cent and 1.67 per cent belonged to Muduga and Kurumba tribes respectively. Majority of the respondents were female (64.17 %) and 35.83 per cent were male. It could be observed that majority of the tribal livestock farmers (67.50%) were illiterate, followed by 24.17 per cent had ability to read and write, 3.33 per cent were educated up to primary and only 1.67 per cent respondents were educated up to secondary school level and none of the respondents were graduate and above level. Similar findings were reported by Gour *et al.* (2015). Thus, in order to popularize the scientific animal husbandry practices among tribal farmers, it is essential to develop extension programmes and promote use of teaching aids that are easily understood by the farmers and that tends to motivate the farmers to change and adopt. Further, all the respondents (100%) were in joint family system. A perusal of Table 1 points out that 38.33 per cent of respondents were marginal farmers, the majority of the respondents (44.17%) were landless while, 4.17 per cent of the respondents had land on lease, where 10.83 per cent were small scale farmers and 2.5 per cent were large scale farmers. The average land holding of tribal livestock farmers is less due to fragmentation of land, forest buffer zone issues and population explosion. Majority of the respondents had high experience in livestock farming (60.83%), followed by medium (25.84%) and low (13.33%). This evidences that the tribal farmers have rich experience in livestock farming.

Table 1: Socioeconomic profile of the tribal livestock farmers (n = 120)

Variable	Category	No.	%
Age	Young (< 36 years)	8	6.67
	Middle (36 – 45 years)	20	16.67
	Elder (> 45 years)	92	76.66
Tribal community	Irulas	111	92.5
	Mudugas	7	5.83
	Kurumbas	2	1.67
Gender	Male	43	35.83
	Female	77	64.17
Education	Illiterate	81	67.5
	Can read	4	3.33
	Can read and write	29	24.17
	Primary	4	3.33
	Secondary	2	1.67
Family type	Nuclear	0	0
	Joint	120	100
Land holding	Landless (No land)	53	44.17
	On lease	5	4.17
	Marginal (Upto 2.5 acres)	46	38.33
	Small (2.5 to 5 acres)	13	10.83
	Large (> 5 acres)	3	2.5
Experience in livestock farming(years)	Low (5 – 15 years)	16	13.33
	Medium (15 – 20 years)	31	25.84
	High (> 20 years)	73	60.83
Occupation	Crop farming	4	3.33
	Animal husbandry	4	3.33
	Agriculture Labour	1	0.84
	Daily Wages	105	87.5
	Others	6	5
Annual income	Low (Rs. 12000 - 30000)	20	16.67
	Medium (Rs.30000 - 40000)	58	48.33
	High (Rs. 40000 – 1,25000)	42	35
Herd Size	Low (< 6 Livestock Units)	106	88.33
	Medium (6 – 10 LU)	9	7.5
	Large (> 10 LU)	5	4.17
Economic Motivation	Low (<12)	46	38.33
	Medium (12 – 14)	46	38.33
	High (> 14)	28	23.34
Risk orientation	Low (< 8.67)	72	60
	Medium (8.67 – 11.34)	42	35
	High (> 11.34)	6	5

The main occupation of tribal livestock farmers was daily wages job (87.50%) however almost all the tribal households kept livestock as subsidiary occupation, which corresponded to the finding of Rao (2013). Both crop farming and animal husbandry were the primary livelihood source to 6.66 per cent of the respondents, whereas, 0.84 per cent respondents earned through agricultural labour. Regarding herd size, majority of the respondents (88.33%) had small herd size followed by 7.50 per cent and 4.17 per cent had medium and large herd size respectively (Ponnusamy *et al.*, 2017). Surprisingly, none of the respondents were involved in sheep and buffalo rearing. Hence, there is a scope to popularize these enterprises among tribal farmers by overcoming the existing constraints.

The study shows that all the respondents kept some livestock and majority of them had a small herd size which is in consonance, with the findings of Prasad *et al.* (2019). Regarding annual income, majority of the respondents (48.34 %) were earning between Rs. 30000-40000 followed by 35 per cent had an income between Rs. 45000-75000, while 16.67 per cent had an income of less than Rs. 28000 per annum as they rely on temporary jobs. Majority of the respondents had medium level of economic motivation (38.33 %) and low risk orientation (60 %).

Table 2: Distribution of respondents according to overall knowledge level in scientific animal husbandry practices (n = 120)

Variable	Category	No. (f)	Per cent (%)
Overall knowledge level	Low	68	56.67
	Medium	50	41.67
	High	2	1.66

Table 2 shows that 56.67 per cent and 41.67 per cent of tribal livestock farmers possessed low and medium level of knowledge in general management, breeding, feeding and health care practices of animal husbandry respectively. These findings are in consonance with the findings of Ponnusamy *et al.* (2009), Khandi *et al.* (2010) and Shekhawat *et al.* (2013). A mere proportion of the respondents (1.66%) had high level of knowledge in scientific animal husbandry practices. Regarding knowledge level of tribal farmers in scientific animal husbandry practices, which is a pre-requisite for the proper utilization of innovation by the farmers that need to be supported by developmental agencies through training programmes and extension activities.

Choice of Preferences for Alternative Livestock Enterprises

'Preferences' in this study refers to the objectives and motivations of the farmers in choosing different enterprises over the existing one. As the Table 3 reveals, that majority of the respondents (93.34 %) had preference to take up an alternative livestock enterprise over the existing one comprising 40 per cent of the respondents preferring poultry enterprise as their alternative choice, 34 per cent for dairy and 26 per cent on goat enterprises. But none of the respondents preferred swine farming as a choice which may be attributed to social limitations. Preferences for choosing alternative livestock enterprises by tribal farmers

could be attributed to reduced returns, lack of easiness in management and marketing, unavailability of land, water and fodder, social limitations and poor financial support from institutions. Hence, it is essential to understand the choice of preferences of tribal farmers and the determinants which make them to choose those livestock enterprises should be given due consideration before drafting any developmental programmes.

Table 3: Distribution of respondents according to choice of preferences for alternative livestock enterprises (n=120)

Variable	Choice	Dairy Enterprises		Goat Enterprises		Poultry Enterprises		Total No. (f)	Per cent (%)
		No. (f)	Per cent (%)	No. (f)	Per cent (%)	No. (f)	Per cent (%)		
Choice of preferences for alternative livestock enterprises	Yes	38	34	29	26	45	40	112	93.34
	No	-	-	-	-	-	-	8	6.66

Identification of Determinants of Choice of Preferences for Alternative Livestock Enterprises by Correlation Between Antecedent Characteristics and Choice of Preferences for Alternative Livestock Enterprises of Tribal Farmers

The relationship analysis given in Table 4 revealed that the independent variable annual gross income of the tribals was found to have positive and significant correlation (0.252) at 1 % level of significance. This might be due to that once the farmer earns more income, his access and decision to go for alternative choices increases proportionately. Economic motivation of farmers had positive and significant relationship (0.181) while farming experience of the tribal farmers had negative and significant correlation ($r = -0.228$) at 5 % level of significance. This can be explained by the concept that when the economic motivation increases, farmers tend to bear risks and opt for other choices of enterprises, and in contrary experience in farming increases, farmers become acclimatized with the existing enterprise and resist changes which corresponded to the findings of Bhattacharjee *et al.* (2016).

Table 4: Identification of determinants of choice of preferences for alternative livestock enterprises

Independent Variables	Correlation coefficient
	('r') value
Age (X1)	-0.045
Education (X2)	0.029
Farm Experience (X3)	-0.228*
Land Holding (X4)	0.036
Occupation (X5)	0.061
Annual gross income(X6)	0.252**
Herd size (X7)	0.051
Economic motivation (X8)	0.181*
Risk orientation (X9)	-0.024

Conclusion

Information about choice of preferences in alternative livestock enterprises and their determinants would help to formulate employment-oriented farmer friendly programmes for tribals. Tribal livestock farmers could be easily motivated if the alternative livestock enterprise if it suits their immediate needs. The preference of tribal farmers towards poultry enterprises need to be encouraged by establishing Tribal poultry Hubs and Commodity Interest Groups, that facilitates better market for tribal produce which are supported by STDCC, TRIFED, MoTA. Hence, exposure to appropriate information regarding their preference in livestock enterprises will help the planners and extension agencies to manifest the most compatible plan for them.

References

1. Bhattacharjee, S., Sarkar, A., Devarani, L., & Feroze, S.M. (2015). Temporally Changing Livelihood Pattern of Rural people: A Case Study on Tribes of Tripura. *Environment & Ecology*, 34 (4A), 1834-1838.
2. Gour, S., Mandal, M.K., & Singh, R. (2015). Assessing Knowledge of Tribal Farmers Regarding Scientific Animal Husbandry Practices. *Indian Research Journal of Extension Education*, 15(2), 91-94.
3. Khandi, S.A., Gautam, Mandal, M.K., & Hamdani, S.A. (2010). Knowledge level of Gujjars about modern animal husbandry practices. *Environment and Ecology*, 28 (2), 1257-1260.
4. Meganathan, N., Selvakumar, K.N., Prabu, M., Pandian, A.S.S., & Kumar, G.S. (2010). Constraints analysis of tribal livestock farming in Tamilnadu. *Tamilnadu Journal of Vet. and AH Sci.*, 6 (1), 12-18.
5. Population census 2011. (2013). Retrieved from <http://censusindia.gov.in/>.
6. Prasad, N., Sureshkumar, M., Pande, Y. K., Soni, S., Saha, N., Chand & Arya, S. (2019). Socio-Economic Status and Problems Faced by Dairy Farmers of Sardhana Block of Meerut District. *International Journal of Livestock Research*, 9(4), 120-128.
7. Rao, P.D. (2013). Socioeconomic status of scheduled tribes. *MERC Global's Intl. J. of Mgt.*, 1, 36-50.
8. Scheduled Tribes of Kerala At A Glance. (2003). Retrieved from <https://kirtads.kerala.gov.in/>.
9. Shekhawat, L.S., Mahajan, K.C., & Jaiswal, A. (2013). Cattle farmers and their extent of knowledge about individual animal husbandry practices. *Journal of Progressive Agri.*, 4 (2), 41-44.