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Pattanam adu sheep farming in the breeding tract: The socio-economic dimensions

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Abstract

A study on the socio-economic status of *Pattanam adu* sheep farmers was conducted in the breeding tract of Tamil Nadu, India. Two district Ramanathapuram (3 blocks -Mudukulathur, Kamuthi and Paramakudi) and Virudhunagar (2 blocks - Aruppukottai and Thiruchuli) and 6 villages from each block and 2 flocks from each village were selected randomly. A total number of 60 flocks were included in this study. The data were collected by personal interview method with the help of pretested interview schedule. The flock size of *Pattanam adu* sheep in the study area is 77.33±1.15, 133.67±3.99 and 243.00±20.21 in small, medium and large flocks, respectively. The study revealed that the majority of the sheep farmers were Hindus (96.66%), from backward community (83.33%), having nuclear type family (51.66%) and illiterate (33.33%). The majority of the sheep farmers (85.00%) were absolute owners of the flock, vast majority of the sheep farmers (73.33%) had above 20 years of experience. Small flock owning families dependent ratio was higher (0.62±0.18) followed by medium (0.54±0.11) and large (0.33±0.04) families. The large flock owners owned large land holding (7.09 acres) followed by small (3.89 acres) and medium (3.79 acres). The annual income was higher in large flocks followed by medium and small flocks owners in the study area. The study on socio-economic status of *Pattanam adu* sheep farmers revealed that the sheep farming is a way of livelihood for the rural communities with different socio-economic background and inclusion of sheep farming in welfare scheme would improve the livelihood in rural areas.

Introduction

Sheep production is a major source of livelihood for the poor people of India including the state of Tamil Nadu. The small ruminant (sheep and goats) contributes to the rural economy in terms of meat, milk, wool, hair and manure. They account for 15% of total meat production in India. Sheep act as a means of asset retention with high liquidity. They help in adsorbing family labours with otherwise goes unemployed [1]. The latitude and longitude of Ramanathapuram and Virudhunagar Districts are 9.3639° N, 78.8395° E and 9.5680° N, 77.9624° E, respectively. The climate of breeding tract of *Pattanam adu* sheep is tropical and the temperature ranging from 22.3 to 37.8 °C. The minimum and maximum relative humidity was 68% (range 62–83) and 75% (range 62–88), respectively. The average annual rainfall was 827 mm and maximum rainfall was received from the northeast monsoon (501.6 mm) season. The major part of the breeding tract was covered with black cotton soil [2].

Pattanam adu is one of the unrecognized sheep breed accounts for highest sheep population of southern region of Tamil Nadu with an estimated population of 2,22,870 in its breeding tract [2]. *Pattanam adu* sheep is an important mutton type animal and is popular among sheep farmers for its heavy body weight. Hence the present study will help to understand the socio-economic status of *Pattanam adu* sheep farmers.

Materials and Methods

This study was conducted in a native tract of *Pattanam adu* sheep in the southern Agro climatic zone of Tamil Nadu. In Ramanathapuram district, three blocks and in Virudhunagar district two blocks were selected, from each block six villages and each village two flocks were selected by multi stage random sampling method. A total number of 60 flocks were included to study the socio economic status of the sheep farmers. Data were collected by personal interview through pretested interview schedule.

The flocks were divided as small (less than 80), medium (81 to 160) and large (above 160) based on the flock size for comparison. The base line information about religion, caste community, family type, literacy level, dependent ratio, land holding, flock size, Experience in sheep rearing, ownership status and annual income were collected. The data collected were tabulated and a standard statistical procedure was used for a logical conclusion.

Result and Discussion
Social status of *Pattanam adu* sheep farmers
Table 1 shows that majority of sheep farmers were Hindus (96.66%), followed by Christians (3.34%). The majority of *Pattanam adu* sheep farmers were belonging to 'Konars' (73.33%) community, followed by Mukulathor (16.66%), Nayakkar (8.34%) and Pillaimar (1.67%). Majority of the farmers were from Backward community (83.33%) followed by the most backward community (16.67%). [3, 4, 5, 6, 7, 8, 9] reported similar findings in different areas of sheep farming in Tamil Nadu and other states of India.

Family type and literacy level
Majority (51.66%) of the sheep farmers were having a nuclear type family (Table 2) and were illiterate (33.33%). As far as family type is concerned, the present study coincides well with sheep family systems of South India reported by [3, 5, 6, 7, 8], whereas the sheep farmers in Northern India were of joint family type as reported by [4, 9].

Literacy levels among sheep farmers varied in different areas of sheep farming; [4, 7, 8, 9] observed that majority of the sheep farmers were illiterates. Whereas, [5] and [6] observed that majority of sheep farmers were educated up to primary schools.

Dependent Ratio, Annual income and Land holding (acres)
It is observed from Table 3, in small flock owning families' dependent ratio were higher (0.62 ± 0.18) followed by medium (0.54 ± 0.11) and large (0.33 ± 0.04) families. It is noteworthy to observe that those small families were mainly dependent on sheep farming for their livelihood compared to medium and large families. In the present study, it was found that the income status of the farmers was observed to be in ascending order from small to large flock farmers which was much lower in the studies of [6, 10, 11, 12, 13]. It was found that at least one among the family male member worked in Malaysia and Gulf countries in the study area. The large flock owners owned large land holding (7.09 acres) followed by small (3.89 acres) and medium (3.79 acres) flock owners in the present study, which were higher than reported by earlier workers in other sheep rearing areas in different parts of the country [4, 5, 7, 8, 10, 12, 13, 14]. In the study area most of the land areas were rainfed and hence sheep husbandry is the main source of livelihood.

Table 1: Social status of *Pattanam* sheep farmers based on their religion, caste and their community

Social parameters	Small (n=15)	Medium (n=30)	Large (n=15)	Total (n=60)	Chi – Square test value
Religion					
Hindu	15 (25.90)	28 (48.30)	15 (25.90)	58 (96.66)	2.07[NS]
Christian	-0 (0.00)	2 (100)	0 (0.00)	2 (3.34)	
Muslim	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	
Total	15 (25.00)	30 (50.00)	15 (25.00)	60 (100.00)	
Caste					
Konar	14 (31.80)	24 (54.50)	6 (13.60)	44 (73.33)	13.67**
Mukkulathor	1 (10.00)	4 (40.00)	5 (50.00)	10 (16.66)	
Nayakkar	0 (0.00)	2 (40)	3 (60)	5 (8.34)	
Pillaimar	0 (0.00)	0 (0.00)	1 (100)	1 (1.67)	
Total	15 (25.00)	30 (50.00)	15 (25.00)	60 (100.00)	
Community					
BC	14 (28.00)	26 (52.00)	10 (20.00)	50 (83.33)	4.32[NS]
MBC	1 (10.00)	4 (40.00)	5 (50.00)	10 (16.67)	
Others	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	
Total	15 (25.00)	30 (50.00)	15 (25.00)	60 (100.00)	

Figures in the parentheses indicate per cent to the total
[NS]- Not significant, **-$P< 0.01$

Flock size
The flock size of *Pattanam adu* sheep in the study area is 77.33 ± 1.15, 133.67 ± 3.99 and 243.00 ± 20.21 in small, medium and large flocks, respectively (Table 4). Similar observation were reported by [6]; [7] and [8] in Tamil Nadu, whereas the average flock size were lesser in other parts of India as reported by [9, 11, 12, 13].

Table 2: Family type and Literacy level of *Pattanam* sheep farmers

Family type	Small (n=15)	Medium (n=30)	Large (n=15)	Total (n=60)	Chi – Square test value
Joint	7 (24.13)	11 (37.93)	11 (37.93)	29 (48.34)	5.41[NS]
Nuclear	8 (25.80)	19 (61.30)	4 (12.90)	31 (51.66)	
Total	**15 (25.00)**	**30 (50.00)**	**15 (25.00)**	**60 (100.00)**	
Literacy level					
Illiterate	7 (35.00)	8 (40.00)	5 (25.00)	20 (33.33)	10.58[NS]
Primary (1-5)	4 (25.00)	9 (56.30)	3 (18.80)	16 (26.67)	
Middle (6-8)	3 (50.00)	2 (33.30)	1 (16.70)	6 10.00)	
Higher (8-10)	0 (0.00)	5 (50.00)	5 (50.00)	10 (16.66)	
Higher Secondary	1 (12.50)	6 (75.00)	1 (12.50)	8 (13.34)	
Total	15 (25.00)	30 (50.00)	15 (25.00)	60 (100.00)	

Figures in the parentheses indicate the per cent to the total
[NS] - Not significant

Table 3: Dependent Ratio, Annual income and Land holding (acres) of *Pattanam* sheep farmers (Mean±SE)

Particulars	Small (n=15)	Medium (n=30)	Large (n=15)	Overall (n=60)
Dependent Ratio	0.62±0.18[a]	0.54±0.11[b]	0.33±0.04[c]	0.51±0.07
Annual income	5,29,233.33±54,481.65[c]	6,21,900±2,855.78[b]	11,94,433.33±84,112.95[a]	7,41,866.67±44,491.75
Land holding in acres	3.89±0.84[b]	3.79±0.45[b]	7.09±1.02[a]	4.66±0.46

Means in the same row with different superscripts differ significantly

Table 4: Flock size of *Pattanam* sheep (Mean±SE)

Particulars	Small (n=15)	Medium (n=30)	Large (n=15)	Overall (n=60)
Sheep flock size	77.33±1.15[c]	133.67±3.99[b]	243.00±20.21[a]	146.92±9.46

Means in the same row with different superscripts differ significantly

Table 5: Classification of *Pattanam* sheep farmers based on their primary occupation

Occupation	Small (n=15)	Medium (n=30)	Large (n=15)	Total (n=60)	Chi – Square test value
Sheep rearing	15 (27.30)	29 (52.70)	11 (20.00)	55 (91.66)	
Others	0 (0.00)	1 (20.00)	4 (80.00)	5 (8.34)	8.95[NS]
Total	15 (25.00)	30 (50.00)	15 (25.00)	60 (100.00)	

Figures in the parentheses indicate per cent to the total
[NS] - Not significant

Table 6: Experience of farmers in sheep rearing

Experience	Small (n=15)	Medium (n=30)	Large n=15	Total (n=60)	Chi – Square test value
1-10 years	0 (0.00)	4 (100)	0 (0.00)	4 (6.66)	
11-20 years	1 (7.70)	7 (53.80)	5 (38.50)	13 (20.01)	7.67*
Above 20 years	14 (31.80)	20 (45.50)	10 (22.70)	44 (73.33)	
Total	15 (25.00)	30 (50.00)	15 (25.00)	60 (100)	

Figures in the parentheses indicate per cent to the total
*-$P < 0.05$

Table 7: Ownership status of *Pattanam* sheep farmers

Type of ownership	Small (n=15)	Medium (n=30)	Large (n=15)	Total (n=60)	Chi – Square test value
Fully owned	12 (23.50)	26 (51.00)	13 (25.50)	51 (85.00)	
Taken for lease	2 (40.00)	2 (40.00)	1 (20.00)	5 (8.34)	13.27*
Both	1 (25.00)	2 (50.00)	1 (25.00)	4 (6.66)	
Total	15 (25.00)	30 (50.00)	15 (25.00)	60 (100.00)	

Figures in the parentheses indicate per cent to the total
*-$P < 0.05$

Classification of *Pattanam adu* sheep farmers based on their primary occupation

Sheep farmers based on their primary occupation were presented in Table 5, it was observed that majority of *Pattanam adu* sheep farmers (91.66%) were having sheep husbandry as their primary occupation. [5, 6, 8] also have reported similar findings. Whereas, [11, 15] observed that agriculture was the main occupation of sheep farmers in Telangana state and North coastal zone of Andhra Pradesh.

Experience of farmers in sheep rearing

It was observed that the vast majority of the sheep farmers (73.33%) had above 20 years of experience followed by 11-20 years (20.01%) and 5-10 years of experience (6.66%) [Table 6]. This coincides well with the findings of [5, 6, 7, 8, 11, 12, 15]. Sheep husbandry is carried out as a traditional occupation by different communities throughout India. The sheep rearing ancestry is passed over a generation which is the main cause for long experience in sheep farmers.

Ownership status

It was observed that the majority of the sheep farmers (85.00%) were absolute owners of the flock (Table 7). Only a few farmers (8.34%) were rearing sheep on a hire basis and

6.66% of the farmers had both ownership and hiring status. The practice of hiring sheep for night penning by shepherds in migratory flocks was reported by [6, 8, 16] in Tamil Nadu.

In the present study area two types of hiring of sheep are prevalent. In the first method a landlord allots a breedable flock to a person who is willing to graze the animal daily, and after a certain period (one to one and half years) the person who hired the sheep from the landlord will repay the value of the initial breedable stock in instalments. After the full payment of money for the value of initial hired stock, a value will be fixed for the flock as of date and 50% of the value belongs to the landlord and 50% of the value belongs to shepherd. The shepherd has to bear the expenses of the entire hired period. The shepherd is dominated by the landlord and can sell the lamb crop only in his presence. However the shepherd is free to earn from night folding and penning of sheep in the agricultural field, and at the end of the hired period either parties can break the agreement by paying the money for the value of the stock on the day.

Conclusion

The results of the present study demonstrated that majority of the sheep flock owners in its breeding tract of Tamil Nadu were Hindu 'Konars' (73.33%), illiterates (33.33%). Nuclear

family type (51.66%) was predominant among the flock owners. The flock owners had more than 20 years of experience (73.33%) in *Pattanam* sheep farming. Majority of the flock owners (75%) were small and marginal dry land farmers with a mean land holding of below4 acres of land. The study on socio-economic status of *Pattanam adu* sheep farmers and husbandry practices of the *Pattanam adu* sheep revealed that the sheep farming in the breeding tract was traditional and adoption of the improved technologies was low. Scientific sheep management practices are generally not practiced by most of the farmers, except the adoption of vaccination against a few diseases and deworming. Adoption of scientific methods in sheep management and by following the suggestion of veterinarians regarding health care would reduce morality percentage in sheep there by increasing the economic status of the shepherds.

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