

Extent of Willingness to Pay for Dairy Husbandry Services by Milk Producers of Salem District of Tamil Nadu

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ABSTRACT

This study was undertaken in Salem district of Tamil Nadu to assess the extent of dairy husbandry services delivered by milk procurement agencies viz., co-operative and a private agency and willingness of respondents to pay for the services. A total of 150 milk producers (75 of co-operative and 75 of private) were randomly selected out of five selected villages to represent five randomly selected blocks of Salem district. Selected milk marketing agencies were procuring milk of the milk producers and also delivering dairy husbandry services such as breeding, therapeutic, supply of inputs, preventive, extension and marketing services to their member producers as paid or subsidized service. The findings of the study are majority of the respondents of DCS (89.33 %) and private agency (100 %) expressed their willingness to pay for AI, obstetrical, gynecological and therapeutic services delivered at their doorsteps. However, none of the respondents was willing to pay for the preventive and extension services. Both agencies did not concentrate on delivery of these services and depended upon the Department of Animal Husbandry (DAH) for their delivery. Both the milk marketing agencies supply cattle feed, fodder seeds and mineral mixture on payment basis only to their respective members. The willingness of the respondents to pay for breeding and therapeutic services opened the scope for privatization of these services. The results also showed that most of the respondents of private agency were not facing any serious constraints in availing dairy husbandry services. However, the unique role of DAH in providing preventive and extension services to all livestock owners needed more emphasis.

Keywords: Dairy husbandry services; DAH; Dairy Co-operatives;

Livestock sector plays a crucial role in providing livelihood and nutritional security to the rural farmers in India. Provision of dairy husbandry services has been an important component for sustainable dairy development in India. The provision of dairy husbandry services (DHS) viz., breeding, therapeutic, input supply and preventive and extension services are under the domain of Department of Animal Husbandry (DAH), dairy co-operatives and Private milk procurement agencies. The major policies drive the livestock sector services privatization are national livestock policy draft, state level policies and Milk and Milk products order 1992 which have direct and immediate impacts on public delivery system by making private agencies to enter veterinary service delivery (Jothilakhmi *et al* 2011). Girma (2008) stated that even though the public sector dominated in providing dairy husbandry service, the

private sector is also increasing its presence in providing cattle feed, microfinance and veterinary services. The distinct increase in the demand for dairy products made many private players to compete with dairy cooperatives for procuring milk from the milk producers. To make the milk producers to pour milk in their pot, private players provide doorstep DHS to their member producers. Scarcity of funds for extension services and limited staff availability for doorstep treatment and breeding service delivery have contributed to deterioration in the accessibility and timeliness of DHS provided by public sector. The willingness to pay for the veterinary services to depend on various factors such as herd size, annual income from livestock enterprise, age of respondent, etc., which can be considered while fixing the charges for veterinary services by the veterinary services providers in both public and private domain (Kumar *et*

al, 2011). This paper aims at presenting the extent of DHS and willingness expressed by the respondents for availing Dairy Husbandry services by the prominent milk procurement agencies in Salem district.

METHODOLOGY

The study was conducted in Salem district of Tamil Nadu state where personnel of co-operative, corporate milk marketing agencies, staffs of State DAH and Private Practitioners are involved in delivery of dairy husbandry services to the milk pourers. Multistage random sampling was adopted to select 150 respondents. In the first stage five blocks were selected randomly. From each block one village was selected randomly where both milk marketing agencies (Co-operatives and Private agency) have operation. Lists of milk producers/members were collected from the dairy co-operatives and private milk procurement centres separately from the selected villages. From the list, 15 milk pourers from each of the milk collection agencies were selected randomly. Thus, a total of 30 respondents from one village were included as the sample respondents for this study. Thus the total of 150 sample respondents from five villages (75 from co-operatives and 75 milk pourers from private agencies) were included for this study. The collected data were categorized and analyzed by using various statistical tools/techniques such as mean, standard deviation, range, chi-square and t-test for interpretation of result by using SPSS and MS-Excel.

RESULTS AND DISCUSSION

Socio-economic Profile : A comparative study of socio-economic characteristics of milk producers of Dairy co-operatives and selected Private agency was carried out with special reference to Age, Sex, Education, Family size, Primary occupation, secondary occupation, Herd size and experience in cattle rearing (Table 1). The study revealed that majority of the respondents was middle age category. The mean age of overall the respondents was 47. A perusal of the Table 1 revealed that majority of the respondents were male (71 %) in co-operatives and female (64%) in private agency. Though the dairy farming activity was mainly done by women in the area the contact person and membership in the milk procurement agency was in the name of male member of the family. It's evident from Table 1 that more number

of illiterate respondents was in co-operative whereas more number of higher secondary level educated milk producers was in private agency. The critical observation of the distribution of respondents regarding occupation indicated that respondents were practicing mixed farming system (Agriculture and livestock) in the study area. Agriculture was the primary occupation for majority (of the respondents in both co-operative and private agency. Majority of small families (57 %) were pouring milk to the co-operative whereas majority of large families (62%) were selling their milk to private agency. More number of small farmers was attracted by private agency whereas more number of marginal farmers was continuing with co-operatives. Table 1 also revealed that there was no much difference between the respondents' household income of co-operative and private agency. It was also clear that maximum number (87%) of the overall respondents family earned annual income of Rs. 24,000 to 2,00,000 that reflected the general economic status of the milk producers and as such they were found to be above poverty line in Salem district. There was no significant difference between the respondents of cooperatives and private agency with regards to social participation. Majority of the respondents had neither membership nor they took part in activities of any social organization. The number of respondents who possessed larger herds was less (5%) in private agency and more (28%) in co-operative. This difference might be due to the more traditional milk producers who supply milk continuously to co-operative societies than private agency which were started recently. Almost all the respondents of co-operative (97%) had more than 10 years of experience and only two respondents (3%) had less than 10 years of experience in cattle rearing. From this result it could be inferred that new generation dairy farmers in slightly higher number were attached to private agencies.

Data in Table 2 revealed that there was no significant difference between the respondents of two marketing agencies with respect to sex whereas there was significant difference existed with respect to primary occupation and secondary occupation. A Glance at the Table 3 revealed mean difference between the socio-economic characteristics of milk producers of DCS and Private. There was no significant difference observed between the respondents of two agencies with respect to their Age, Family size and Education.

Table 1: Distribution of the respondents of Co-operatives and Private agency based on socio economic profile (N=150)

Variables	Co-operative		Private		Total	
	No.	%	No.	%	No.	%
<i>Age</i>						
Young(<34)	11	14.67	14	18.67	25	16.67
Middle(34-59)	51	68	48	64	99	66
Old(>59)	13	17.33	13	17.33	26	17.33
Mean:	47					
S.D:	12					
Range:	20-75					
<i>Sex</i>						
Male	53	70.67	48	64	101	67.33
Female	22	29.33	27	36	49	32.67
<i>Education</i>						
Illiterate	24	32.00	18	24	42	28
Primary	22	29.33	18	24	40	26.67
Secondary	21	28	24	32	45	30
Higher sec.	4	5.33	11	14.67	15	20
Gradu.and above	4	5.33	4	5.33	8	10.67
<i>Family size</i>						
Small(Upto 4)	43	57.33	28	37.33	71	47.33
Large(Above 4)	32	42.67	47	62.67	79	52.67
Mean:	4.74					
S.D:	1.82					
Range:	2-10					
<i>Social Participation</i>						
Participated	17	22.67	13	17.33	30	20
Not participated	58	77.33	62	82.67	120	80
<i>Primary occupation</i>						
Agriculture	61	81.33	66	88	127	84.67
Agri. Labour	8	10.67	3	4	11	7.33

Livestock rearing	4	5.33	4	5.33	8	5.33
others	2	2.67	2	2.67	4	2.67
<i>Secondary occupation</i>						
Agriculture	6	8.00	1	1.33	7	4.67
Agri. Labour	11	14.67	1	1.33	12	8.00
Livestock rearing	55	73.33	71	94.67	126	84
others	3	4	2	2.67	5	3.33
<i>Land holding</i>						
Landless	4	5.33	06	8.00	10	6.66
Marginal	37	49.33	17	22.67	54	36.00
Small	27	36	40	53.33	67	44.67
Medium & large	7	9.33	12	16	19	12.67
Mean:	3.0					
S.D:	2.85					
Range:	0-15					
<i>Annual income</i>						
<24,000	2	2.67	4	5.33	6	4.00
24,000-1 lakh	36	48.00	36	48.00	72	48.00
1-2 lakh	27	36.00	31	41.33	58	38.67
Above 2 lakhs	10	13.33	4	5.33	13	9.33
Mean:	1,14,641					
S.D:	80,452					
Range:	1,000-312000					
<i>Herd size</i>						
1-3	14	18.67	15	20	29	19.33
4-7	40	53.33	56	74.67	96	64
>7	21	28	4	5.33	33	22
Mean:	5					
S.D:	2.37					
Range:	2-13					
<i>Experience in cattle rearing</i>						
Upto 10	02	2.67	19	25.33	21	14
More than 10	73	97.33	56	74.67	129	86

Table 2: Association between qualitative Socio-economic status variables of respondents of DCS and Private agency

Variables	Pearson χ^2 value	p-value
Sex	0.141 ^{NS}	0.707
Primary Occupation	2.347*	1.00
Secondary Occupation	46.11*	0.00

* Significant at 0.05 level

However, the significant differences was noticed between the respondents of two marketing agencies with respect to annual income which showed that milk producers with higher annual income were pouring the milk to DCS. The mean difference of herd size was statistically significant between the milk producers of DCS and Private which again showed that milk producers with higher herd size preferred DCS for

Table 3: Association between Socio-economic status of respondents of DCS and Private agency

Variables	Mean (Private)	Mean (DCS)	Mean difference	t-value
Age	45.63	47.95	2.32	-1.11 ^{NS}
Family size	4.85	4.63	0.22	-0.76 ^{NS}
Education	6.06	4.65	1.41	1.91 ^{NS}
Income	32,334	48407	16073	2.37*
Herd size	5.06	5.89	0.83	2.16*
Exp. in cattle rearing	12.85	15.12	2.27	-4.06**
Land owned	3.80	2.80	1.0	2.16*

**Significant at 0.01 level *Significant at 0.05 level

pouring milk. The land owned by the respondents was statistically significant between the milk producers of DCS and Private (P < 0.05). The t-test revealed that

there was a highly statistically significant differences between the experiences of dairying of DCS and Private ($P < 0.01$). This showed that traditional milk producers perceived that DCS was the government sector and preferred to continue pouring milk to them. Whereas milk producers with less experience in dairying were attracted towards private agency for pouring the milk due to high milk price paid, mechanization and incentive by the agency.

Extent of availing dairy husbandry services provided by milk marketing agencies : Although both agencies were providing different dairy husbandry services their availability and accessibility needed to be judged from the angle of dairy farmers. The agencies claimed that they were providing range of services for the benefit of their producers. But to what extent these services were accessible to the milk producers as perceived by them indicated the true picture of these services.

Table 4: Extent of availing dairy husbandry services from milk marketing agencies

Type of services	Co-operative(n=75)	Private(n=75)
AI	16 (21.33%)	49 (65.33%)
Therapeutic	0 (0.00%)	35 (46.67%)
Deworming	4 (5.33%)	7 (9.33%)
Vaccination	0 (0.00%)	0 (0.00%)
Extension	0 (0.00%)	0 (0.00%)
Supply of cattle feed	16 (21.33%)	11 (14.67%)
Supply of fodder slips	2 (2.67%)	3 (5.33%)

The milk producers of co-operative and private agency were interviewed about the services availed by them from the concerned agencies and the results were indicated in Table 4. The respondents of both the agencies availed AI services to some extent at their doorsteps which were accessible to them. The private agency could extend AI services to more number of their members (65%) than the co-operative agency (21%). The reason might be that veterinarians of dairy co-operatives were burdened with official/scheme works other than service delivery and veterinarians of the private agency were exclusively carrying out service delivery to their member producers. The other reasons might be the constraint of human resource and policies of the milk union. *Rathod et al. (2012)* also reported that the constraints related to financial, human resources, policies and administrative aspects that hampered the effective functioning of dairy Cooperatives. Similarly, about 47 per cent of respondents of private agency

availed the therapeutic services but none of the respondents of co-operative agency availed these services. Discussion with the milk producers of the co-operatives revealed that the veterinarians of co-operatives were not available in time so, they prefer private practitioners and Paravets of that area. With respect to other services such as deworming, supply of cattle feed and supply of fodder slips, the number of respondents who availed the services was very low mainly because these services were accessible to very few dairy farmers. This perception could be due to the poor observability of results and uncertainty in reaping benefit of these services. There was very little documentation on the contribution of dairy cooperatives in delivery of extension and advisory services (*Mahesh Chander and Rasheed Sulaiman, 2014*). A glance at Table 5 reveals that AI, Deworming, Vaccination, supply of Cattle feed and fodder slips services variables were highly associated between the respondents of DCS and Private.

Table 5: Association of service delivery variables between DCS and Private

Type of services	χ^2 value
AI	10.79**
Therapeutic	-
Deworming	41.04**
Vaccination	-
Extension	-
Supply of cattle feed	47.34**
Supply of fodder slips	49.31**

** Significance at 0.01 level

Willingness of the respondents to pay for doorstep services : The figures in the Table 6 showed that majority of the respondents (95 %) expressed their willingness to pay for availing AI services at their doorsteps from the milk marketing agencies. The finding was similar to the findings of *Kathiravan and Thirunavukkarasu (2008)* who found that dairy farmers were willing to pay for availing breeding services. Similar to the above finding, about 94 per cent of the respondents of this study expressed their willingness to pay for availing obstetrical, gynecological and therapeutic services. *Kumar et al., (2011)* reported that farmers were willing to pay for availing veterinary services both at the centre and at doorstep.

Majority of the respondents of co-operative agency

expressed their willingness to pay for availing the AI services (89 %) and obstetrical, gynecological and therapeutic services (88%) provided by their agency at doorsteps. All the respondents of the private agency also expressed their willingness to pay for availing breeding and therapeutic services at their doorsteps. This finding was similar to the findings of *Kathiravan and Thirunavukkarasu (2008)* who reported that farmers were willing to pay for availing health care services. However it is important to reveal that none of the respondents was willing to pay for availing preventive services (deworming and vaccination) and extension services.

Table 6: Willingness of the respondents to pay for doorstep services

Type of Services	Co-operative (n=75)	Private (n=75)	Total (n=150)
AI	67 (89.33)	75 (100.00)	142 (94.67)
Therapeutic	66 (88.00)	75 (100)	141 (94.00)
Deworming	0	0	0
Vaccination	0	0	0
Extension services	0	0	0

Table 7: Constraints in availing dairy husbandry services from Dairy co-operatives and private agency

Constraints	Co-operative		Private	
	No.*	%	No.*	%
NA of veterinarian in time	33	44.00	4	5.33
Non-availability of credit	10	13.33	1	1.33

*multiple responses; NA=Non-availability

Perceived Constraints in availing dairy husbandry services from dairy co-operatives and private agency: The important constraints expressed by the respondents in availing the services from the Dairy co-operatives were presented in Table 7. The constraints faced by the DCS respondents were non-availability of veterinarian in time (44 %), non-availability of credit (13.33 %). These were contradictory to the findings of *Ahuja (1999)* who observed that in Gujarat most of the cases (80%) were attended by the service providers of co-operatives at farmer’s doorstep. Very few respondents expressed their difficulties in availing dairy husbandry services from the private agency. These constraints included non-availability of credit (5.33 %) and veterinary officer coming late (1.33%). The results also showed that most of the respondents of private agency were not facing serious constraints in availing

dairy husbandry services. The reason might be due to the exclusive veterinary services wing instituted in the private agency.

Suggestions of milk producers to improve dairy husbandry services: The milk producers were asked to propose suggestions to improve dairy husbandry services of their agencies. The results in table 8 indicated that around 90 per cent and 60 per cent of the milk producers of co-operatives and private agency respectively, were suggesting that the service charges should be deducted from the milk payment. Periodical visit by veterinarian to the centre was suggested by 92 per cent and 86 per cent of milk producers of co-operatives and private agency respectively. Around 90 per cent of the milk producers of co-operatives and private agency were expecting credit from their agencies during exigencies.

Table 8: Suggestions of milk producers to improve dairy husbandry services

Suggestions	Co-operative		Private	
	No.*	%	No.*	%
Availability of veterinarian during exigencies and periodical visit to centre	69	92	64	85.33
Deducting the service charges from milk payment	67	89.33	45	60.00
Credit support during exigencies	68	90.67	67	89.33

*multiple responses

CONCLUSION

The findings of the study revealed that majority of the respondents of DCS were illiterate and marginal farmers from small family whereas majority of the respondent of Private agency were secondary school educated and small farmers from large family. Private agency was efficient in providing dairy husbandry services at the doorstep of the members than dairy co-operatives. The findings of the study led to the conclusion that Milk union should start to restructure its policy to form dairy husbandry service delivery wing exclusively for overall development of the sector. It was also interesting to note that most of the milk producers were willing to pay for breeding and therapeutic services delivered at their doorstep. This situation might lead to further privatization of these services in future which

gave strong indication that Department of Animal husbandry (DAH) should reorient themselves to provide therapeutic and breeding services on cost sharing/cost recovery basis to relieve the system from financial burden and also forming mobile veterinary units in

uncovered areas. Since none of the respondents of the milk marketing agency was willing to pay for preventive and extension services; these services should be given special emphasis by the dairy husbandry service providers (milk marketing agencies and DAH).

REFERENCES

- Girma, A.H. (2008). Dairy services delivery in Debrezeit milk shed of Ada'a District, Central Ethiopia: Analyzing options to develop Pluralistic Service delivery in the dairy sector. M.Sc., thesis (Rural Development) Submitted to Haramaya University, Ethiopia.
- Jothilakshmi, M., Thirunavukkarasu, D and Sudeepkumar N. K. 2011. Structural Changes in Livestock Service Delivery System: A Case Study of India. *Asian J. of Agricultural Research*, 5: 98-108
- Kathiravan, G., and Thirunavukkarasu, M. (2008). Willingness to pay for contract health care services in dairy animals: A payment card study, *Iranian J. of Veterinary Research*, 9(1): 65-71.
- Kumar, S., Mirajkar P, P.; Singh Y, P and Singh R. 2011. Analysis of Willingness to Pay for Veterinary Services of the Livestock owners of Sangli District of Maharashtra, *Agricultural Economics Research Review*, 24: 149-153.
- Kathiravan, G., Thirunavukkarasu, D and Selvam, S. (2011) Time, Costs and Farmers' Perceptions: The case of livestock service delivery in Tamil Nadu, *Veterinary World*, 4 (5): 209-212.
- Mahesh Chander and Rasheed Sulaiman V. (2014). Strengthening Extension and Advisory Services through Producer Organisations: A Case of Milk Producer Cooperatives in India, Proceedings and Recommendations of the Consultations on the role of Producer Organisations in Strengthening Extension and Advisory Provision in the Dairy/Livestock Sector in India, (August-October, 2014).
- Rathod, P., Nikam, T.R., Landge S, P and Hatey, A. (2012). Perceived Constraints in Livestock Service Delivery by Dairy Cooperatives: A Case Study of Western Maharashtra, India. *Indian J. Dairy Science*, 65 (5): 256-261

