CHAPTER - VI

Nature and Extent of Participation of Female Labour in Livestock Enterprises

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NATURE AND EXTENT OF PARTICIPATION OF FEMALE LABOUR IN LIVESTOCK ENTERPRISES

Objectives: To study the nature and extent of participation of female labor force in all operations concerning management and production of livestock enterprises.

Hypothesis: There exists association between level of participation and household food security through livestock products.

In this chapter improved management practices in livestock enterprises have been assessed including vaccination in different livestock and poultry species, feeding of concentrate, deworming, pregnancy diagnosis by veterinarians and fodder cultivation. Further, the level of participation of female labor in livestock enterprises with particular emphasis on time spending pattern and degree of participation on day to day basis were also worked out. Finally, their nature of participation i.e. whether lone performance or joint performance was also ascertained and its association with household food security was explored.

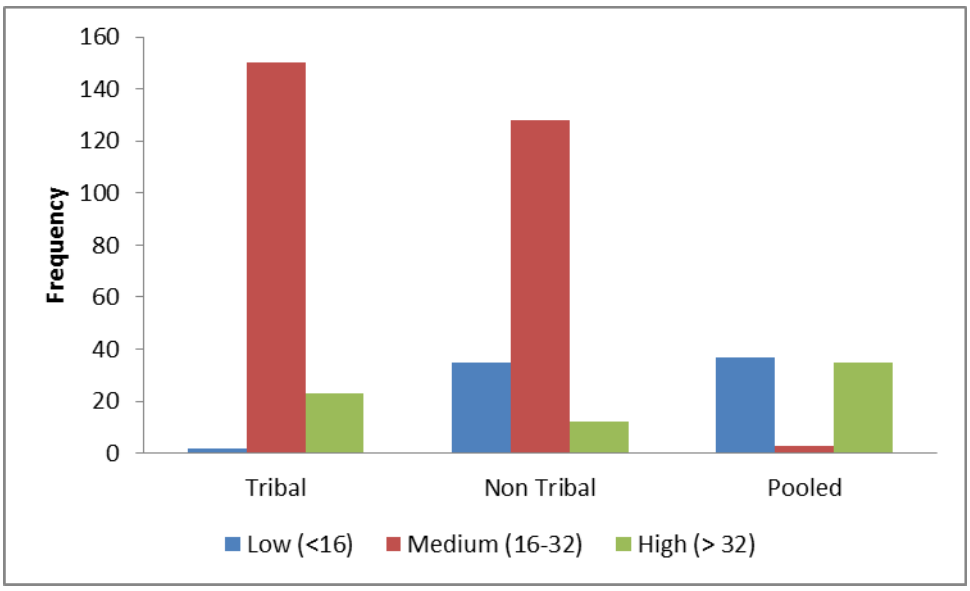
6.1. IMPROVED LIVESTOCK MANAGEMENT PRACTICES

Improved livestock management practices are those activities undertaken with scientific foundation to augment livestock production and mitigate the ailment in different animal species and poultry. These include the measures and methods adopted for feeding, housing, deworming, fodder production, vaccination etc. Table 6.1 depicts the improved livestock management practices of the respondents.

Table 6.1: Frequency distribution of the respondents on the basis of their improved livestock management practices

Category	Tribal		Non –Tribal		Pooled	
	Frequency	P.C.	Frequency	P.C.	Frequency	P.C.
Low (<16)	2	0.57	35	10.00	37	10.57
Medium (16-32)	150	42.86	128	36.57	2.78	79.43
High (> 32)	23	6.57	12	3.43	35	10.00
Mean	26.53		22.12		24.33	
SD	7.43		7.81		7.93	
t value	5.42**					
Range	1-62		8-43		1-62	

*Significant at 1 percent level of Probability.



(Source: Table 6.1)

Fig. 18. Frequency distribution of the respondents on the basis of their improved livestock management practices.

Fig. 19. Women livestock farmer taking care of farm animals

Table 6.1 revealed that majority of the tribal women (42.86 percent) adopted medium improved practices in livestock management followed by 6.57 percent having high and only 0.57 percent with low improved practices. The mean and SD were 26.53 and 7.43 respectively. On the other hand, in non-tribal rural women 36.57 percent had medium improved practices followed by 10.00 with low level of practices and 3.43 percent with high practices. The mean and SD were 22.12 and 7.81 respectively.

In pooled sample 79.43 percent had medium improved practices while 10.57 percent and 10.00 percent rural women had low and high improved practices in livestock management. The overall mean and SD were 24.33 and 7.93 respectively.

The significant 't' value indicated that there was a significant difference between tribal and non-tribal households in relation to the adoption of improved practices in livestock management. The higher mean value of improved livestock management practices of the non-tribal people was due to higher level of awareness and interest and consequently their adoption level was high. Hence, the significant difference between tribal and non-tribal.

6.2. INVOLVEMENT IN VACCINATION PRACTICES IN DIFFERENT SPECIES

Vaccination in animals and poultry is a scientific method adopted for preventing some killer diseases which might occur due to bacteria or virus. These innovative methods were invented at different points of time by scientific community and vaccines were commercially produced and attempts were made for popularizing such vaccines by demonstration, adoption trial and subsequent diffusion. Therefore, in the present study it was conceptualized to measure vaccination practices in different species of animals and birds. Practices of vaccination of livestock and poultry of the respondents are exhibited in the Table 6.2

Table 6.2: Frequency distribution of the respondents on the basis of their involvement in vaccination in different species

Species of Animals	Vaccination practice in different species					
	Tribal		Non- Tribal		Pooled	
	Practice vaccination	Do not practice	Practice vaccination	Do not practice	Practice vaccination	Do not practice
Cattle	146	29	159	16	305	45
Buffalo	0	175	0	175	0	350
Pig	75	100	0	175	75	275
Goat	13	162	12	163	25	225
Fowl	37	138	12	163	49	301
Duck	10	165	4	171	14	336

A look in Table 6.2 made it clear that cattle vaccination was popular in both tribal and non-tribal people and an overwhelming majority in both the community adopted vaccination in cattle. But vaccination in buffalo was yet to make an in road in the study area and not even single case of buffalo vaccination was reported in tribal and non-tribal respondents.

In the same table it was depicted that vaccination of pig was popular to some extent among tribal people but the non-tribal people rarely reared pigs and hence vaccination was yet to catch up among them. In case of goat despite the availability and effectiveness of vaccines both tribal and non-tribal people adopted it in small number, which might be attributed to their lack of awareness and interest. Similarly, vaccination in fowl was adopted by about 20 percent of the tribal households and less than 10 percent of the non-tribal households. Vaccination in duck was also rarely practiced by both tribal and non-tribal people.

6.3. CONCENTRATE FEEDING IN LIVESTOCK AND POULTRY

Feeding in livestock is of utmost importance as proper feeding is a determinant of production and productivity. Concentrate feeding is a scientific practice where different ingredients are mixed in certain proportions to supply the required level of carbohydrate, protein, fat, vitamin and mineral to animals and birds. Therefore, in the present study it was planned to enquire to what extent this practice was adopted by the rural people.

Table 6.3: Frequency distribution of the respondents on the basis of their involvement in concentrate feeding in livestock and poultry

Species of Animals	Concentrate feeding practices in different species					
	Tribal		Non- Tribal		Pooled	
	Practice	Do Not Practice	Practice	Do Not Practice	Practice	Do Not Practice
Cattle	157	18	163	12	320	30
Buffalo	0	175	0	175	0	350
Pig	98	77	0	175	98	252
Goat	42	133	48	127	90	260
Foul	72	103	69	106	141	209
Duck	21	154	35	140	56	294

Table 6.3 revealed that a large majority of the households both tribal and non-tribal adopted concentrate feeding in cattle. But in buffalo it was conspicuously absent. On the other hand, concentrate feeding in pig was undertaken by almost half of the tribal households while in non-tribal households it was totally absent. In case of goat rearing almost one-fourth of the tribal and non-tribal respondents adopted concentrate feeding, while in fowl, less than half only practiced concentrate feeding. But in duck rearing very few people reported to have practiced concentrate feeding.

Fig. 20. Women in poultry farming

6.4. DEWORMING OF LIVESTOCK AND POULTRY

Worms or internal parasites are responsible for retarded growth of animals and their low production. Therefore, deworming is a practice to administer anthelmintic to domestic animals and birds to expel such internal parasites and has been proved very beneficial in livestock and poultry farming. In the present study the rural women were expected to adopt deworming and hence their differential level in tribal and non-tribal segment was of interest to study that is depicted in the Table 6.4

Table 6.4: Frequency distribution of the respondents on the basis of their involvement in deworming of livestock and poultry.

Species	Tribal		Non -Tribal		Pooled	
	Practice deworming	Do not Practice deworming	Practice deworming	Do not Practice deworming	Practice deworming	Do not Practice deworming
Cattle	90	85	98	77	188	162
Buffalo	0	175	2	173	2	348
Pig	76	99	1	174	77	273
Goat	46	129	73	102	119	231
Foul	14	161	8	167	22	328
Duck	7	168	3	172	10	340

Table 6.4 exhibited that only about half of both tribal and non-tribal households in the study area were found to have practiced deworming in cattle while in buffalo it was almost nil. In case of pig rearing the tribal families practiced it to some extent but the non-tribal families did not practice it. Similarly, in fowl keeping only few families in both tribal and non-tribal practiced deworming. An exactly similar phenomenon happened in duck farming.

6.5. PREGNANCY DIAGNOSIS BY THE HELP OF VETERINARIANS

Artificial insemination as well as natural service are practiced in cattle, buffaloes, pig and goat. Therefore, pregnancy diagnosis with the help of a veterinarian is a practice adopted mainly to know the outcome of the natural or artificial service is shown in the Table 6.5.

Table 6.5: Frequency distribution of the respondents on the basis of their involvement in pregnancy diagnosis by veterinarians

Species	Tribal		Non -Tribal		Pooled	
	Practice	Do not practice	Practice	Do not practice	Practice	Do not practice
Cattle	44	131	72	103	116	234
Buffalo	1	174	0	175	1	349
Pig	3	166	0	175	9	341
Goat	4	171	13	166	17	333

It was visible from Table 6.5 that pregnancy diagnosis with the help of veterinarian was adopted in cows to some extent in the study area. While one fourth of the tribal respondents reported to have done it in cattle, higher number from their non-tribal counterpart reported to have done it. But in other species, only very few households reported to have practiced pregnancy diagnosis.

6.6. FODDER CULTIVATION

Fodder cultivation is an integral part of livestock husbandry. As a large amount has to be incurred in feeding the animals in any livestock enterprise, fodder cultivation has a crucial role to play in the economy and management of the livestock related enterprise which is observed in the Table 6.6.

Table 6.6: Frequency distribution of the respondents on the basis of their involvement in fodder cultivation for different species of livestock

Species	Tribal		Non -Tribal		Pooled	
	Practice	Do not practice	Practice	Do not practice	Practice	Do not practice
Cattle	66	109	93	82	159	191
Buffalo	1	174	3	172	4	371
Goat	2	173	2	173	4	371

Fig. 21. Women in fodder cultivation under RKVY scheme

Table 6.6 exhibited that a substantial number of tribal and non-tribal households practiced fodder cultivation for their dairy cattle. But for buffalo and goat very negligible number of respondents reported to have practiced it.

Therefore, it is evident from the above findings that fodder cultivation despite having an important role in livestock husbandry has not received due attention. Some respondents' households started fodder cultivation for dairy cattle but for buffalo and goat they are lagging behind due to lack of interest or awareness or both.

6.7. LENGTH OF TIME SPENT IN ACTIVITIES RELATED TO LIVESTOCK ENTERPRISE

Time spent in the activities related to livestock enterprise is very important as it is closely linked with the extent and nature of participation. In the present study time spent on daily basis in livestock related activities was enquired. Based on mean and SD three categories were made – short, medium and long that are observed in the Table 6.7

Table 6.7: Frequency distribution of the respondents on the basis of their time spent in activities related to livestock enterprises.

Category	Tribal		Non -Tribal		Pooled	
	Frequency	P.C.	Frequency	P.C.	Frequency	P.C.
Short (<2.73 hrs)	20	5.71	5	1.43	25	7.14
Medium (2.73 – 4.30)	133	38	133	38	266	76.00
Long (> 4.30 hrs)	22	6.29	37	10.57	59	16.86
Mean (hrs)	3.55		4.08		3.82	
SD	0.88		1.20		1.09	
't' value	4.70**					
Range	2-6		2-8		2-8	

** Significant at 1 percent level of probability.

Table 6.7 displayed that majority of the tribal women (38.00 percent) spent medium length of time while 6.23 percent spent long time and 5.71 percent spent short time in livestock related activities daily.

It was interesting to notice that an equal number of non-tribal women (38.00 percent) also spent medium length of time followed by 10.57 percent and 1.43 percent having spent long and short time daily in livestock related activities. The mean and SD were 3.55 hrs and 0.88 respectively in tribal women and the corresponding figures for non-tribal women were 4.08 hrs and 1.20 hrs.

In pooled data 76.00 percent of the respondents spent medium length of time daily in livestock related activities while 16.86 and 7.14 percent spent long and short duration respectively in livestock related activities.

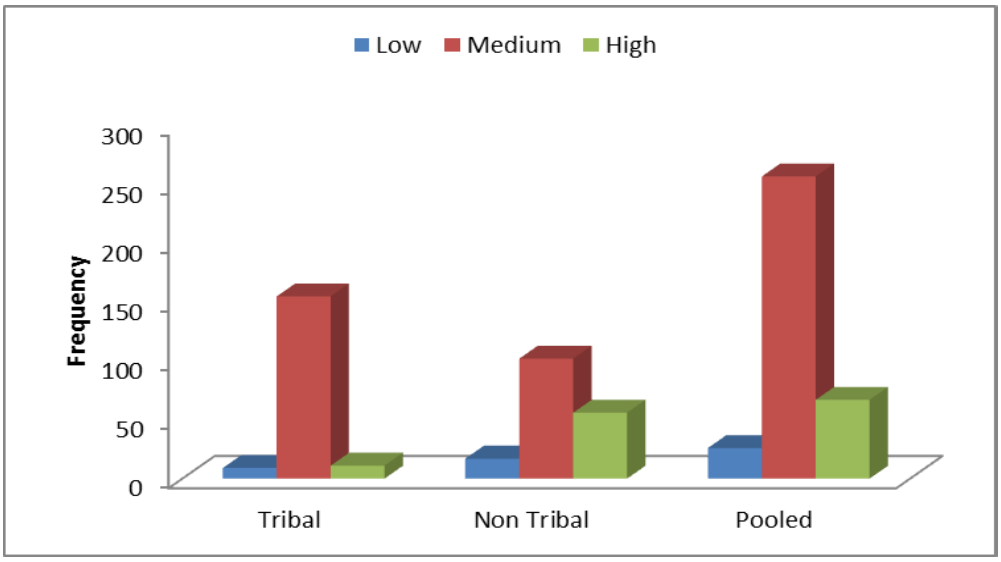
The 't' value was 4.70 which was highly significant and indicative of the fact that there existed a significant difference between tribal and non-tribal women in respect of their length of time spent in livestock related activities. The non-tribal women had a higher average length of time spent in livestock related activities.

6.8 LEVEL OF PARTICIPATION IN LIVESTOCK RELATED ACTIVITIES

Table 6.8: Frequency distribution of the respondents on the basis of their level for participation in livestock related activities

Category	Tribal		Non- Tribal		Pooled	
	Frequency	P.C.	Frequency	P.C.	Frequency	P.C.
Low (<51.61)	9	2.57	17	4.86	26	7.43
Medium (51.61 – 68.83)	155	44.29	102	29.14	257	73.43
High (>68.83)	11	3.14	56	16.00	67	19.14
Mean	59.00		61.44		60.22	
SD	5.76		10.60		8.60	
t value	2.67**					
Range	45 – 77		38 – 87		38 - 87	

** Significant at 1 percent level of probability.



(Source: Table 6.8)

Fig. 22. Frequency distribution of the respondents on the basis of their level for participation in livestock related activities

The participation of rural women in livestock related activities was measured in a 4-point continuum against twenty one activities related to livestock enterprise. The 4-point continuum consisted of 'Regularly', 'Sometimes', 'Rarely' and 'Never' and the corresponding scores were 4, 3, 2 and 1 respectively. The scores of all the 21 activities were summed up to get the total score for an individual respondent. Thus, mean and SD were worked out and three categories were made to get the frequency and percentage of respondents in each category of low, medium and high and are recorded in the Table 6.8.

A quick look in Table 6.8 revealed that a majority of the tribal women (44.29percent) had medium level of participation in livestock related activities followed by 3.14 percent having high and 2.57 percent having low level of participation. On the other hand, 29.14 percent of the non-tribal women had medium level of participation followed by 16.00 with high and 4.86 percent with low level of participation.

In Pooled sample, 73.43 percent had medium participation while 19.14 percent had high and 7.43 percent had low participation in livestock related activities.

The mean and SD were 59.00 and 5.76 in tribal group respectively. The corresponding figures were 61.44 and 10.60 in non-tribal group and 60.22 and 8.60 in the pooled sample.

The significant 't' value revealed the significant difference between the tribal and non-tribal people in respect of their participation in livestock related activities.

6.9. FREQUENCY OF FEMALE PARTICIPATION ACTIVITY-WISE

Table 6.9: Frequency distribution of the respondents on the basis of their degree of participation in livestock related activities

Sl. No.	Activities	Regularly R			Sometimes S			Rarely L			Never		
		N.T	T	Pool	N.T	T	Pool	N.T	T	Pool	N.T	T	Pool
1	Collection of fodder	31	16	47	113	80	193	29	71		2	8	10
2	Chaffing of fodder	21	22	43	28	30	58	21	22		105	102	207
3	Prep of feed for animal	102	95	197	69	74	143	4	4		0	2	2
4	Grazing of animal	55	13	68	11	13	24	1	36		108	111	219
5	Watering of animal	172	152	324	2	19	21	1	0		0	2	2
6	Cleaning animal shed	149	125	274	23	50	73	2	1		0	0	0
7	Milking	62	10	72	107	147	154	4	10		2	3	5
8	Selling milk and milk products	47	7	54	104	113	217	16	47		3	6	9
9	Prep of milk products	24	14	38	9	24	33	112	113		11	21	32
10	Watering of birds	157	167	324	4	5	9	2	3		10	0	10
11	Feeding of birds	91	88	179	70	84	154	2	3		12	0	12
12	Prep of feeds for birds	60	79	139	97	79	176	6	16		11	0	11
13	Collection of eggs	55	52	107	9	17	26	94	106		15	0	15
14	Selling of eggs	50	39	89	10	19	29	97	115		15	1	16
15	Maintenance of bird shed	31	53	84	130	111	241	1	11		11	0	11
16	Hatching of eggs	19	34	53	44	13	57	92	122		15	0	15
17	Collection of dung	135	141	276	30	15	45	6	12		2	5	7
18	Prep of dung cake	21	2	23	30	12	42	21	31		103	117	120
19	Bathing of animals	18	7	25	45	36	81	6	34		104	91	195
20	Care of sick animals	105	74	179	66	90	156	4	6		0	0	0
21	Care of new born	137	112	249	36	63	99	2	0		0	0	0

The female participation in livestock enterprises was also worked out activity-wise in order to enquire whether any activity witnessed higher participation by tribal or non-tribal women. There were as many as 21 activities against which 4-point continuum with there. The frequencies were recorded against each activity in the Table 6.9.

Table 6.9 indicated that 'collection of fodder' was an activity where more number non-tribal women participated than that of tribal women. But 'chaffing of fodder' witnessed participation of almost equal number of tribal and non-tribal rural women. Similarly, 'preparation of feed for animal' also attracted equal number tribal and non-tribal women. The other two activities 'grazing of animals' and 'watering of animals' also had almost similar participation of tribal and non-tribal women. But 'milking of animals', 'selling milk' and 'preparation of milk products' had participation of more number of non-tribal female.

6.10. NATURE OF FEMALE PARTICIPATION IN LIVESTOCK RELATED ACTIVITIES

Female participation in livestock activities was studied from different perspectives. Their level of participation and activity-wise participation were determined. Similarly, the nature of participation was also important. Whether the rural women performed the activity alone or jointly was also a subject of investigation.

On the other hand, the rural women participated jointly with their in-laws and other members together in activities like chaffing of fodder, preparation of feed for animal, grazing of animals, milking, selling of milk and milk products, preparation of feeds for birds, maintenance of bird shed, bathing of animals etc. However, the difference between tribal and non-tribal was not noticeable in respect of female participation in livestock related activities and that is observed in the Table 6.10.

Fig. 23. Women in dairy farming activities

Table 6.10: Frequency distribution of the respondents on the basis of their nature of participation in livestock related activities

Sl. No.	Activities	Alone			With Husband			With In-law			With Children			With Together		
		NT	T	Pool	NT	T	Pool	NT	T	Pool	NT	T	Pool	NT	T	Pool
1	Collection of fodder	5	1	6	133	101	234	0	0	0	0	0	37			
2	Chaffing of fodder	7	4	11	70	63	133	2	2	4	2	2	4	94	98	192
3	Prep of feed for animal	2	1	3	136	104	240	2	3	5	0	0	0	29	42	71
4	Grazing of animal	4	1	5	62	56	118	2	0	2	0	0	0	99	96	195
5	Watering of animal	109	121	230	38	33	71	0	4	4	7	0	7	19	13	32
6	Cleaning animal shed	58	81	139	82	75	157	2	3	5	12	2	14	21	11	32
7	Milking	15	11	26	118	112	230	6	3	9	0	0	0	35	40	75
8	Selling milk and milk products	11	13	24	113	85	298	3	11	14	0	1	1	47	69	116
9	Prep of milk products	105	116	221	21	12	33	2	13	15	0	3	3	12	19	31
10	Watering of birds	106	151	257	11	10	21	2	4	6	17	3	20	23	5	28
11	Feeding of birds	33	57	90	83	86	169	2	4	6	9	2	11	37	15	52
12	Prep of feeds for birds	26	48	74	43	40	83	0	4	4	0	0	0	94	71	165
13	Collection of eggs	112	148	260	23	5	28	2	4	6	8	0	8	15	7	22
14	Selling of eggs	38	30	68	108	98	206	0	4	4	0	0	0	14	32	46
15	Maintenance of bird shed	13	22	35	50	52	102	2	5	7	0	0	0	98	90	188
16	Hatching of eggs	131	153	284	26	6	32	2	7	9	0	0	0	1	3	4
17	Collection of dung	139	135	274	23	14	37	0	6	6	0	0	0	13	13	26
18	Prep of dung cake	18	5	23	17	15	32	0	1	1	7	0	7	28	24	52
19	Bathing of animals	0	3	3	69	63	132	2	4	6	8	2	10	92	84	176
20	Care of sick animals	63	41	104	102	108	210	2	6	8	0	0	0	8	19	27
21	Care of new born	78	96	174	83	65	148	2	6	8	0	0	0	12	8	20

Note: N.T = (Non -Tribal) T = (Tribal).

Table 6.10 indicated that lone female participation of both tribal and non-tribal women was observed in activities like watering of animals, collection of eggs, hatching of eggs, collection of dung, care of sick animals and care of newborn. But joint participation of husband and wife was seen in activities like chaffing of fodder, preparation of feed for animal, cleaning of animal shed, milking, selling of milk, feeding of birds, preparation of feeds for birds, maintenance of bird shed, bathing of animals etc.

In poultry keeping the activities like 'watering of birds', 'feeding of birds' and 'preparation of feeds for bird' had participation of almost equal number of women from tribal and non-tribal community. On the other hand, almost equal number of tribal and non-tribal women participated in 'collection of eggs', 'selling of eggs' and 'maintenance of birds shed'.

In the activities in cowshed, 'collection of dung' and 'preparation of dung cake', more number of non-tribal women participated and similarly 'bathing of animals', care of sick animals' and 'care of new born animals' attracted more non-tribal female.

TESTING OF THE HYPOTHESIS :

In the present study, rural female participation in livestock related activities was investigated viewing it from different angles. Moreover, household food security through livestock products like milk, meat and egg was also explored. Therefore, to test the hypothesis, X^2 test was conducted between level of participation and level of perceived household food security through livestock products.

6.11. ASSOCIATION OF PARTICIPATION IN LIVESTOCK RELATED ACTIVITIES WITH PERCEIVED LEVEL OF HOUSEHOLD FOOD SECURITY IN POOLED DATA

Table 6.11: Association of participation in livestock related activities with food security in pooled data.

Level of participation	Food security				
	Low	Medium	High	Total	X^2
Low	1 (0.29)	14 (4.00)	1 (0.29)	16 (4.57)	
Medium	17 (4.86)	217 (62.00)	30 (8.57)	264 (75.43)	
High	7 (2.00)	35 (10.00)	28 (8.00)	70 (20.00)	36.8743**
Total	25 (7.14)	266 (76.00)	59 (16.86)	350 (100.00)	

** Significant at 1 percent of level of probability.

Table 6.11 revealed that a large majority of the respondents (75.43 percent) in pooled sample had medium level of participation in livestock related activities, while 76.00 percent of them had perceived medium level of household food security through livestock products. From the same table it was also visible that 62.00 percent of the respondents having medium level of participation in livestock related activities had perceived medium level of household food security, whereas 10.00 percent of them with high level of participation in livestock related activities had perceived medium level of food security and only 4.00 percent with low level of participation had medium level of perceived household food security.

On the other hand, 8.57 percent of the respondents with medium level of participation in livestock related activities had perceived high degree of food security while 8.00 percent of them had high participation in livestock related activities and also high level of perceived household food security.

The X^2 value was highly significant which indicated that the two variables i.e. participation in livestock related activities by rural women and their perceived level of household food security were highly significantly associate.

6.12. ASSOCIATION OF FEMALE PARTICIPATION IN LIVESTOCK RELATED ACTIVITIES WITH HOUSEHOLD FOOD SECURITY IN TRIBAL PEOPLE

Table 6.12: Association of participation in livestock related activities with food security in Tribal people.

Level of participation	Food security				
	Low	Medium	High	Total	X^2
Low	0 (0.00)	4 (2.29)	1 (0.57)	5 (2.86)	45.0105**
Medium	2 (1.14)	108 (61.71)	10 (5.71)	120 (68.57)	
High	3 (1.71)	21 (12.00)	26 (14.86)	50 (28.57)	
Total	5 (2.86)	133 (76.00)	37 (21.14)	175 (100.00)	

** Significant at 1 percent of level of probability.

A quick look in Table 6.12 made it amply clear that 68.57 percent of the tribal women had medium level of participation in livestock related activities followed by 28.57 percent and 2.86 percent had high and low participation respectively, whereas 76.00 percent of them had perceived medium level of household food security followed by 21.14 percent with high and 2.86 percent with low level of food security.

A closer scrutiny made it further visible that 61.71 percent of the tribal women having medium level of participation in livestock related activities were found to have perceived medium level of household food security, while 12.00 percent of them having high participation had perceived medium level of household food security. Only 2.29 percent with low participation had high level of food security.

On the contrary 14.86 percent of the respondents with high level of participation in livestock related activities had also perceived high level household food security. In the same manner 5.71 percent of respondents with medium level of participation in livestock related activities had medium level of food security.

The X^2 value was found to highly significant, which implied that these two variables of tribal women were also highly significantly associated. The higher

knowledge level of the tribal women in improved animal husbandry might helped them to perceive higher food security while working in the livestock related activities.

6.13. ASSOCIATION OF PARTICIPATION IN LIVESTOCK RELATED ACTIVITIES WITH HOUSEHOLD FOOD SECURITY IN NON-TRIBAL PEOPLE

Table 6.13: Association of participation in livestock related activities with food security in Non -Tribal people.

Level of participation	Food security				
	Low	Medium	High	Total	X^2
Low	1 (0.57)	10 (5.71)	0 (0.00)	11 (6.29)	
Medium	15 (8.57)	109 (62.29)	20 (11.43)	144 (82.29)	3.5724 ^{NS}
High	4 (2.29)	14 (8.00)	2 (1.14)	20 (11.43)	
Total	20 (11.43)	133 (76.00)	22 (12.57)	175 (100.00)	

A perusal in Table 6.13 revealed that a large majority (82.29) of the non-tribal respondents had medium level of participation followed by 11.43 percent and 6.29 percent having high and low level of participation. On the other hand, 76 percent of them derived medium level of food security followed by 12.57 percent with high and 11.43 percent with low food security. Taking both the variables together 62.29 percent of them with medium level of food security also had medium level of participation in livestock related activities followed by 11.43 percent having medium level of participation in livestock related activities and high level of food security, while 8.57 percent of them had medium level of participation but low level of food security.

Similarly, 8 percent and 5.71 percent of them with medium level of food security had high and low level of participation respectively in livestock related activities.

However, the x^2 value was not significant which indicated that there existed no significant association between participation in livestock related activities and food

security for non-tribal people. All though their participation was higher in livestock activities their knowledge level might have led them to feel differently from the tribal people.

6.14. ASSOCIATION OF IMPROVED LIVESTOCK MANAGEMENT PRACTICES WITH HOUSEHOLD FOOD SECURITY IN POOLED SAMPLE

Table 6.14: Association of improved livestock management practices with food security in pooled data.

Level of improved Livestock Management practices	Food Security				
	Low	Medium	High	Total	X^2
Low	0 (0.00)	26 (7.43)	11 (3.14)	37 (10.57)	
Medium	13 (3.71)	220 (62.86)	45 (12.86)	278 (79.43)	17.0054**
High	3 (0.86)	18 (5.14)	14 (4.00)	35 (10.00)	
Total	16 (4.57)	264 (75.43)	70 (20.00)	350 (100.00)	

** Significant at 1 percent level of probability.

Table 6.14 revealed that 79.43 percent of the rural women had medium level of improved livestock management practices, followed by 10.57 and 10.00 percent with low and high level improved livestock management practices. Viewing it from other side as high as 75.43 percent of them had medium level of perceived household food security followed by 20.00 percent and 4.57 percent with high and low household food security.

A simultaneous look with both variables further indicated that 62.86 percent of the respondents had medium level of food security and medium level of improved livestock management practices, whereas 7.43 percent had medium level of food security and low level of improved practices and 5.14 percent of them had high level of improved practices but medium level of food security.

On the other hand, 12.86 percent of them had medium level of improved management practices and high level of food security, while 4.00 percent had high improved livestock practices and high level of household food security. On the contrary only 3.14 percent had high level of household food security and low level of improved practices.

The high significant X^2 value (17.0054) implied that the improved practices of rural women had highly significant association with their perceived household food security.

6.15. ASSOCIATION OF IMPROVED MANAGEMENT PRACTICES WITH HOUSEHOLD FOOD SECURITY IN TRIBAL WOMEN

Table 6.15: Association of improved livestock management practices with food security in tribal people.

Level of improved Livestock Management practices	Food Security				
	Low	Medium	High	Total	X^2
Low	0 (0.00)	24 (13.71)	11 (6.29)	35 (20.00)	2.755^{NS}
Medium	4 (2.29)	89 (50.86)	35 (20.00)	128 (73.14)	
High	1 (0.57)	7 (4.00)	4 (2.29)	12 (6.86)	
Total	5 (2.86)	120 (68.57)	50 (28.57)	175 (100.00)	

Table 6.15 indicated that 73.14 percent of the tribal women in the study are had medium level of adoption of improved livestock management practices followed by 20.00 percent and 6.86 percent with low and high level of adoption of improved livestock management practices. On the other hand, 68.57 percent of them had perceived medium level of food security followed by 28.57 percent with high and 2.86 percent with low level of food security.

A closer look made it abundantly clear that 50.86 percent of the tribal women in the study area had medium level of adoption of improved livestock management practices and also medium level of household food security. But 13.71 percent of them had medium level of food security and low level of adoption of improved livestock management practices, while only 4.00 percent had high level of improved management practices and medium level of food security.

In the same Table 20.00 percent of respondents were found to have high level of food security with medium level of improved livestock management practices, while 6.29 percent had high level of food security and low level of improved practices. On the other hand, 2.29 percent had high level of food security and high level of improved livestock management practices. The lower level of adoption in improve livestock management practices has led them to perceive less food security. However, the X^2 value here was not significant.

6.16. ASSOCIATION OF IMPROVED LIVESTOCK MANAGEMENT PRACTICES WITH HOUSEHOLD FOOD SECURITY IN NON-TRIBAL PEOPLE

Table 6.16: Association of improved livestock management practices with food security in Non- Tribal people.

Level of improved Livestock Management practices	Food Security				
	Low	Medium	High	Total	X^2
Low	0 (0.00)	2 (1.14)	0 (0.00)	2 (1.14)	
Medium	9 (5.14)	131 (74.86)	10 (5.71)	150 (85.71)	28.0944**
High	2 (1.14)	11 (6.29)	10 (5.71)	23 (13.14)	
Total	11 (6.29)	144 (82.29)	20 (11.43)	175 (100.00)	

** Significant at 1 percent level of probability.

Table 6.16 Indicated that a large majority of the non-tribal women (85.71percent) had medium level of improved livestock management practices followed by 13.14 percent and 1.14 percent with high and low improved livestock management practices.

On the other hand, 82.29 percent of them had medium level of food security followed by 11.43 percent and 6.29 percent with high and low food security.

A closer view revealed that 74.86 percent of them had medium level of both household food security and improved livestock management practices. Similarly, 5.71 percent of them high level of food security and high level of improved livestock management practices.

They highly significant X^2 value (28.0944) indicated that in non-tribal women improved livestock management practices was found to have highly significant association with household food security.

From the above findings it is sufficiently clear that the participation of rural women in livestock related activities was significantly associated with their perceived level of household food security. In the same manner, improved livestock management practices were also significantly associated with household food security. A combination of these two sets of findings hinted that participation in livestock related activities coupled with the adoption of improved livestock management practices might have augmented the production process of livestock products. Hence, the perception of the respondents in respect of food security had shown significant association of these two variables. But their was some amount of disagreement between the perception of tribal and non-tribal women regarding the association of food security with level of participation in livestock related activities.

Hence, the pooled simple may be considered as the evidence for testing the hypothesis thus the hypothesis may be accepted for rural women irrespective of their tribal and non tribal identities.