

RESEARCH ARTICLE

Rural Women's Attitudes Towards Dairy Farming: Insights from Kumaon Division of Uttarakhand

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ABSTRACT

Dairy farming constitutes a vital livelihood for rural households in India, particularly for women who play an indispensable role in animal rearing and milk production. In Uttarakhand's Kumaon Division, women actively participate in feeding, milking, livestock management, and milk marketing, yet face multiple challenges due to socio-economic and structural barriers. This research paper examines the attitude of rural people towards dairy farming, focusing on their perceptions, participation, and the socio-economic significance of dairying in their lives. This study, conducted in the Nainital district, aimed to (i) to explore the socio-personal, economic, psychological, and communication characteristics of rural women and (ii) to assess the attitude of rural women towards dairy farming. A descriptive research design was employed, with 154 respondents selected through probability proportionate to size sampling from three villages in the Kotabagh block. Data were collected using a pre-tested structured interview schedule and analysed using suitable statistical tools. The findings revealed that the majority of respondents were from the middle age group (39–54 years), engaged in farming, and belonged predominantly to the general caste. Most had a moderate level of education and marginal landholdings, with 73.38% residing in nuclear families. A total 52.6% displayed a favorable attitude toward dairy farming. These results underscore the potential for targeted interventions through gender-sensitive extension services, improved access to veterinary care, and enhanced training opportunities to empower rural women and strengthen their contributions to the dairy sector.

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INTRODUCTION

Agriculture has played a vital role in shaping human civilization, a fact supported by archaeological discoveries from ancient cultures like Mesopotamia and the Indus Valley. Agricultural practices have undergone substantial development since their origin over 10,000 years ago, with significant advancements

occurring throughout history. Today, India ranks second globally in terms of cultivable land, with around 159.7 million hectares (or 394.6 million acres), following only the United States (Kholiya, 2019). Dairy farming not only supplements farm income but also plays a crucial role in ensuring nutritional security

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and empowering marginalized groups, particularly women. Uttarakhand, a Himalayan state renowned for its rich cultural heritage and agrarian economy, makes a significant contribution to India's dairy sector. (Kankarne, et. al, 2017)

According to the 20th Livestock Census (2019), the state is home to approximately 3.41 million cattle, accounting for about 1.77% of India's total cattle population. Its share in the national milk production stands at around 1.06% (BAHS, 2022). With an annual milk output of approximately 1.84 million tons, dairy farming serves as a crucial source of livelihood for small and marginal farmers in Uttarakhand, particularly in rural regions with limited alternative employment opportunities. In this context, the Kumaon Division holds a significant position, as women form the backbone of dairy activities. Women in Kumaon are actively engaged in the entire livestock management cycle from feeding and milking to healthcare, breeding, and marketing milk, contributing substantially to the rural economy and household nutrition (Department of Animal Husbandry and Dairying 2021). As noted by FAO (2011) that an impressive 88% of rural women in India are engaged in agriculture and related fields. Despite their pivotal involvement, women in Kumaon often operate under socio-cultural constraints. Traditional norms restrict their mobility, limit their decision-making capacity, and reduce their access to essential resources, including education, credit, veterinary care, and training opportunities. The majority of their knowledge is derived from traditional practices passed down through generations, with minimal exposure to scientific training. While many women display positive attitudes toward dairy farming, their willingness to adopt improved practices is often curtailed by inadequate institutional support, fodder shortages, and insufficient veterinary services.

The present study was undertaken with the objectives

1. To explore the socio-personal, economic, psychological, and communication characteristics of rural women.
2. To assess the attitude of rural women towards dairy farming.

This study, therefore, seeks to assess the socio-economic and attitudinal profiles of rural women engaged in dairy farming in Kumaon, with the ultimate goal of recommending strategies for their empowerment.

MATERIAL AND METHODS

The present study was conducted in the Kumaon Division of Uttarakhand, specifically in the Kotabagh block of Nainital district. Using simple random sampling (the chit method), three villages —Devipur, Naripur, and Khadakpur — were selected. A total of 154 rural women involved in dairy farming were chosen as respondents using the Probability Proportionate to Size (PPS) method, with the sample size determined using Yamane's formula.

Yamane's formula:

$$n = N / (1 + N * (e^2))$$

Where:

n = sample size

N = population size

e = margin of error

The total population across the three villages was 628, and at a 7% precision level, the required sample size was calculated as 154 (88 from Devipur, 38 from Naripur, and 28 from Khadakpur). Data collection was conducted using a structured interview schedule, which was administered.

The study employed a descriptive research design, appropriate for systematically describing existing conditions, characteristics, and relationships among variables without manipulation. The socio-economic status of the respondents was measured using the scale developed by Pandya and Pandya (2007–08). Attitude towards dairy farming refers to the extent of positive or negative feelings held by dairy women regarding various aspects of animal husbandry. Attitude toward dairy farming was assessed using a 10-statement Likert scale developed by Prajapati (2018). Responses were recorded on a five-point scale ranging from “strongly agree” to “strongly disagree,” with scores from 5 to 1, and total scores ranging from 21.60 to 60. The collected data were analyzed using frequency, percentage, and mean score to derive meaningful interpretations.

RESULTS AND DISCUSSIONS

Socio-personal, economic, psychological, and communication characteristics of rural women

Socio-economic status refers to the social and economic position of the respondents within their community. To assess this, the scale developed by Pandya and Pandya (2007–08) was employed. The



Table 1. Socio-personal, economic, psychological, and communication characteristics of rural women (n=154)

S. No.	Profile characteristics	No.	Percentage
1.	Age		
	(i) Young Age (less than 39)	20	12.99
	(ii) Middle Age (39-54)	104	67.53
	(iii) Old Age (above 54)	30	19.48
2.	Caste		
	(i) General	94	61.00
	(ii) OBC	41	27.00
	(iii) ST	11	7.00
	(iv) SC	8	5.00
3.	Occupation		
	(i) Professional/ Service in Govt.	7	5.00
	(ii) Farming/Business/Farming with service/ Farming with other enterprise	123	80.00
	(iii) Skilled occupation	0	0.00
	(iv) Service in private	5	3.00
	(v) Unskilled occupation	19	12.00
4.	Education		
	(i) College/Post graduation	19	12.33
	(ii) High school	41	26.62
	(iii) Middle school	21	13.63
	(iv) Primary school	39	25.32
	(v) Functionally literate	11	7.14
	(vi) Illiterate	23	15.00
5.	Annual income		
	(i) Above 2,00,000	0	0.00
	(ii) 1,50,001 to 2,00,000	0	0.00
	(iii) 1,00,001 to 1,50,000	11	10.00
	(iv) 50,000 to 1,00,000	46	27.00
	(v) Upto 50,000	9	63.00
6.	Family type		
	(i) Joint	41	26.62
	(ii) Nuclear	113	73.38
7.	Family size		
	(i) 1 to 2 members	4	2.59
	(ii) 3 to 4 members	33	21.42
	(iii) 5 to 6 members	78	51.00
	(iv) 7 to 8 members	31	20.12
	(v) Above 8 members	8	5.19



S. No.	Profile characteristics	No.	Percentage
8.	Land holding		
	(i) Big (above 10 ha)	0	00.0
	(ii) Medium (4.01 to 10 ha)	6	3.90
	(iii)Semi medium (2.01 to 4 ha)	25	16.23
	(iv) Small (1.01 to 2 ha)	32	20.78
	(v) Marginal (0.01 to 1 ha)	91	59.09
	(vi) Landless	0	00.0
9.	Socio-Political Participation		
	(i) Involvement in community work	0	00.00
	(ii) Active office bearer	5	3.25
	(iii) Financial contribution or raising funds for the community	0	00.00
	(iv) Official position in the social and political committee	0	00.00
	(v) Official position in one or more socio-political organisations	0	00.00
	(vi) No participation	149	96.75
10.	Material possession		
	(i) Tractor/Mini tractor/Gobar gas plant/ Refrigerator /Cooler / Greenhouse/ Internet /Car, Truck	154	100
	(ii) Pump set/ Mobile/ Telephone/ Drip irrigation set /Sprinkler irrigation Set/LPG gas connection /Television/ Improved farm implements	154	100
	(iii)Motorcycle/Electricity/Newspaper/Sofa/VCD / DVD	154	100
	(iv) Bullock cart /Fan/Radio/Camera	154	100
	(v) Watch/Table/Clock/Chair/Bicycle	154	100
11.	Herd size		
	(i) Buffalo/Cow	131	85.00
	(ii) Bullock	6	3.89
	(iii) Poultry	24	15.58
	(iv) Bulls/Heifers/Goats/Sheep/Donkeys	123	79.87
	(v) Pig	0	00.00
12.	Type of house		
	(i) Concrete double-storied	9	5.84
	(ii) Concrete	145	94.16
	(iii) Tiled and brick wall	0	00.00
	(iv) Mud walled/Metal sheet roof	0	00.00
	(v) Thatched shed	0	00.00
13.	Personal achievement		
	(i) Award in agriculture	0	0.0
	(ii) Award in society	0	0.0
	(iii) Award in education	2	1.3
	(iv) Award in sports	0	0.0
	(v) Award for bravery	0	0.0
	(vi) No award	152	98.70

scale considered multiple factors, including caste, occupation, education, annual income, family type, family size, landholding, socio-political participation, material possessions, herd size, type of housing, and personal achievements.

The data presented in Table-1 highlights:

Age: The majority of rural women (67.53%) fell within the middle age group (39–54 years), followed by 19.48% in the older age group and 12.99% in the younger age group. This indicates that more than half of the respondents were between 39 and 54 years of age.

Caste: Most of the respondents (61.0%) belonged to the general caste, followed by 27.0% from the OBC category. Smaller proportions included 7.0% from the ST category and 5.0% from the SC category. The predominance of women from the general caste may be due to the significant presence of Brahmins and Thakurs in the village population.

Occupation: A substantial proportion of respondents (80.0%) were engaged in farming, either exclusively or in combination with business, service, or other activities. This was followed by 12.0% involved in unskilled work, 5.0% employed in government service or professional roles, and 3.0% in private service. Interestingly, none were found working in skilled occupations, suggesting that farming remains the primary source of livelihood source in the study area.

Education: The data shows that the highest proportion of women (26.62%) had studied up to high school, followed closely by 25.32% who had completed primary education. Approximately 15% were illiterate, 13.63% had completed middle school education, and 12.33% had attained college or postgraduate education. Only 7.14% were functionally literate. These findings suggest that most respondents had an educational background up to the high school or primary level, while relatively few pursued higher studies.

Annual income: Majority of respondents (63.0%) earned ₹50,000 or less per year, while 27.0% fell into the income range (₹50,000–₹1,00,000. A smaller proportion (10.0%) reported annual incomes between ₹1,00,001 and ₹1,50,000. None of the respondents earned above ₹1,50,000, indicating that most rural women in the study area belonged to low- to moderate-income groups. This disparity may be attributed to associated with variations in landholding sizes among households.

Family type: The data show that most respondents (73.38%) lived in nuclear families, while 26.62% were part of joint families, indicating a gradual shift toward the nuclear family system.

Family size- Total 51% of respondents had 5 to 6 members, 21.42% had 3 to 4 members, 20.12% had 7 to 8 members, 5.19% had more than 8 members, and only 2.59% reported family sizes of 1 to 2 members. Overall, over 72% had families consisting of 3 to 6 members, a pattern likely linked to the prevalence of nuclear families in the region.

Landholding- Distribution indicates that 59.09% of respondents had marginal holdings (0.01–1 ha), 20.78% had small holdings (1.01–2 ha), and 16.23% had semi-medium holdings (2.01–4 ha). Only 3.9% possessed medium holdings (4.01–10 ha). None were landless or owned extensive holdings (above 10 ha). This pattern can be attributed to the fragmentation of landholdings in the area.

Socio-political participation- Socio-political participation was observed to be minimal, with 96.8% of respondents reporting no involvement. Only 3.24% served as office bearers, and none were engaged in community work, fundraising, or held positions in socio-political organizations. These results suggest either a lack of awareness, limited opportunities, or disinterest in socio-political involvement among rural women. In terms of material possessions, all respondents (100%) reported owning essential household assets, indicating a comparatively better standard of living in this aspect.

Herd size- Total 85% of women owned buffaloes or cows, while 79.87% kept bulls, heifers, goats, sheep, or donkeys. Poultry was maintained by 15.58%, and only 3.89% kept bullocks. No respondents reported keeping pigs or having no livestock at all.

Type of house: The data revealed that most respondents lived in well-constructed concrete houses, reflecting relatively favorable living conditions in the study area.

Personal Achievement: The respondents' personal achievement data are presented in Table 1. It is clear from the table that most of the respondents (98.89%) had not received any awards, followed by a 1.11% proportion of respondents who received an award in agriculture. It was also observed that none of

the respondents had received any awards in the fields of education, social service, sports, or bravery. The data clearly shows that only a few individuals were found to have received any awards for personal achievement. It is also evident that none of the respondents received such awards in any area other than education.

Overall Socio-economic status: Table 2 shows that a large proportion of rural women (83.8%) were classified in the higher socio-economic category, with scores exceeding the class range of 41. This was followed by 12.3% of respondents who fell into the middle category (range 23–35), while only 3.9% were placed in the upper-middle category. Notably, none of the respondents were recorded in the lower-middle or lower socio-economic groups. These findings indicate that the majority of women in the study area belonged to the higher socio-economic category, with no representation in the lower socio-economic classes.

1. Dairy farming is a profitable venture (+):

A considerable number of respondents either agreed (56) or strongly agreed (43) with the view that dairy farming is a profitable activity. Only a

small portion (10) disagreed, and none strongly disagreed. This demonstrates a widely accepted perception of profitability in dairy farming, consistent with findings that highlight its role in generating stable income in rural areas.

2. I think animal husbandry activity is worthwhile for efficient and effective resource use of the farmer (+):

A majority of respondents (59 agreed and 43 strongly agreed) expressed a positive opinion about the usefulness of animal husbandry in efficiently utilizing farm resources. The absence of any disagreement supports earlier research, which indicates that integrated livestock systems enhance overall agricultural productivity.

3. Animal husbandry is helping in reducing risk in farming (+):

The responses revealed strong agreement, with 54 respondents strongly agreeing and 68 agreeing, showing that animal husbandry is widely recognized as a valuable strategy for mitigating risks in farming.

Table 2. Overall socio-economic status of rural women

S.No.	Categories	Frequency	Percentage
1	Higher (Above 41)	129	83.8
2	Higher Middle (36-41)	6	3.9
3	Middle (23-35)	19	12.3
4	Lower Middle (17-22)	0	00
5	Lower (below 17)	0	00

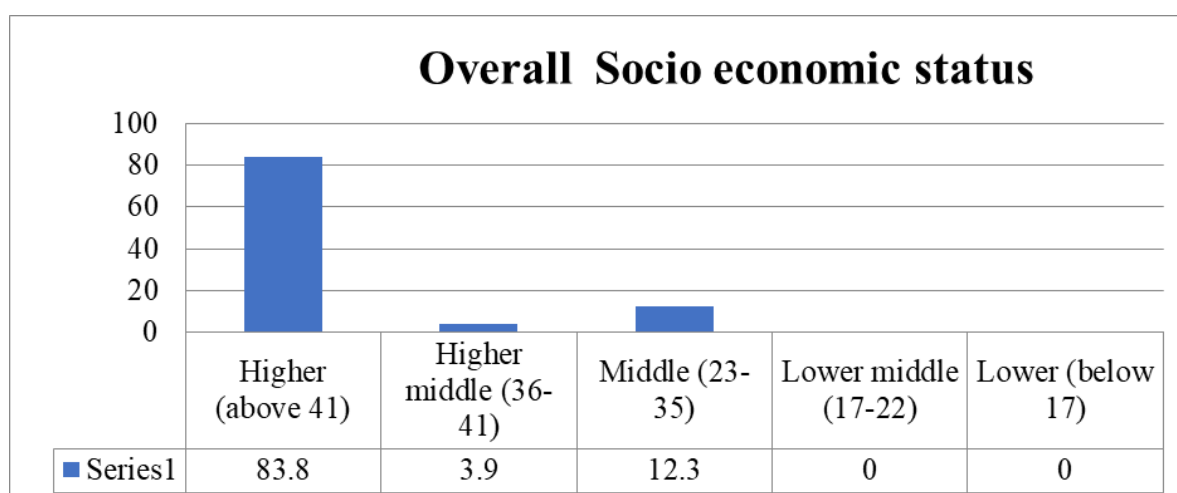


Figure 1: Overall socio economic status of study sample (n=154)

Attitude of rural women towards dairy farming

Table 3- Attitude towards dairy farming

Sr. No.	Particular	SA	A	UD	DA	SD
		Responses				
1	Dairy Farming is a profitable venture (+)	43	56	45	10	0
2	I think animal husbandry activity is worthwhile for efficient and effective resource use of the farmer (+)	43	59	52	0	0
3	Animal husbandry is helps in reducing risk in farming (+)	54	68	32	0	0
4	There is a lot of scope for animal husbandry enterprise, which is getting momentum in India as the demand for milk is increasing day by day (+)	59	52	38	5	0
5	I don't want to keep an animal as it requires engagement around the day (-)	46	108	0	0	0
6	I believe it helps women to get access to credit and loans (+)	57	62	34	0	0
7	I think it improves women's position in the family and society (+)	48	70	34	2	0
8	Illiterate but functionally literate women can do animal husbandry practices (+)	47	78	29	0	0
9	I think it helps reform old traditional thoughts (+)	42	97	15	0	0
10	I think dairy farming is the best way to get self-employment (+)	56	71	27	0	0

SA= Strongly Agree, A= Agree, UD= Undecided, D= Disagree, SD= Strongly Disagree

4. There is a lot of scope for animal husbandry enterprise, which is getting momentum in India as demand for milk is increasing day by day (+): This statement also received substantial support, with 59 strongly agreeing and 52 agreeing. The results reflect the respondents' understanding of the expanding market for milk and dairy products in the country.

5. I don't want to keep animals as they require engagement around the day (-): Most respondents either disagreed (108) or strongly disagreed (46) with the statement that they would avoid keeping animals due to the time commitment required. This suggests that time-related challenges are not viewed as a significant barrier, contradicting common concerns often associated with livestock farming.

6. I believe it helps women to get access to the credit and loans (+): A large proportion of respondents (57 strongly agreed and 62 agreed) acknowledged that dairy farming can be a helpful tool in enabling women to access financial services, in line with studies that associate dairy enterprises with women's economic empowerment.

7. I think it improves women's position in family and society (+): A large proportion of respondents (57 strongly agreed and 62 agreed) acknowledged that dairy farming can be a helpful tool in enabling women to access financial services, in line with studies that associate dairy enterprises with women's economic empowerment.

8. Illiterate but functionally literate women can do animal husbandry practices (+): The belief that even women with minimal formal education can effectively carry out dairy-related tasks was shared by most respondents (47 strongly agreed and 78 agreed), supporting the notion that basic literacy is sufficient for managing animal husbandry operations.

9. I think it helps reform old traditional thoughts (+): An overwhelming majority of respondents (97 agreed and 42 strongly agreed) viewed dairy farming as a progressive force in reshaping outdated rural mindsets.

10. I think dairy farming is the best way to get self-employment (+): A significant number of



Table 4: Distribution of respondents according to their attitude towards dairy farming (n=154)

S.No.	Category	Frequency	Percentage
1.	Strongly unfavourable (upto 21.60)	00	00.00
2.	Unfavourable (21.61 to 31.20)	09	5.80
3.	Neutral (31.21 to 40.80)	46	29.90
4.	Favourable (40.81 to 50.40)	81	52.60
5.	Strongly favourable (50.41 to 60)	18	11.70
	Total	154	100.00

respondents (71 agreed and 56 strongly agreed) endorsed the idea that dairy farming serves as an effective and sustainable self-employment option, reaffirming its value as a livelihood strategy.

Table 4 indicates that most rural women engaged in dairy farming (52.6%) exhibited a favourable attitude toward dairy farming practices. This was followed by 29.9% who expressed a neutral attitude, 11.7% with a strongly favourable attitude, and 5.8% with an unfavourable attitude toward animal husbandry. Notably, none of the respondents reported a strongly unfavourable attitude toward dairy farming. These findings suggest that the majority of rural women held a favourable perception of dairy farming. This positive attitude may be attributed to factors such as stable milk prices and a reliable source of income that requires minimal additional resources.

CONCLUSION

Based on the above study, it can be concluded that rural women in dairy farming have come to understand the importance of dairy farming as a means of socio-economic upliftment. The study highlights the significant contribution of rural women

to dairy farming in Kumaon, Uttarakhand. Although the majority demonstrated a moderate level of knowledge and a favourable attitude, their potential was limited by factors such as low income, inadequate training, and insufficient access to veterinary services. To enhance their participation and effectiveness, there is a need to strengthen gender-sensitive extension services, provide better training opportunities, and establish stronger market linkages, thereby enabling rural women to realize their full potential in the dairy sector.

REFERENCES

- Kankarne, S. M., Patil, S. L., & Patil, M. D. (2017). Socio-economic status of dairy farm women in Maharashtra. *Indian Journal of Extension Education*, 53*(4), 75–78. <https://doi.org/10.5958/0974-5046.2017.00019.4>
- Kholiya, K. (2019). A study on socio-personal, economic and psychological characteristics of rural women dairy farmers in Uttarakhand. *International Journal of Farm Sciences*, 9*(2), 112–118. <https://doi.org/10.5958/2322-0412.2019.00015.3>