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RESEARCH ARTICLE

Entrepreneurial behaviour of dairy farm women in Nainital district of Uttarakhand

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Abstract: The investigation was conducted in Nainital district of Uttarakhand to know the entrepreneurial behaviour of dairy farm women. A sample of total 120 respondents was selected from the five selected villages and pre-tested interview schedule was used for the data collection. Statistical techniques such as frequency, percentage, arithmetic mean, standard deviation, coefficient of correlation and t-test were used to analyze the data. The findings of the study revealed that majority of the respondents (72.5%) belonged to middle age category, 30.83 per cent had education up to high school, 69.17 per cent had medium family size, 59.16 per cent had medium dairy experience, 52.5 per cent respondents had medium herd size and milk production, 72.50 per cent had medium level of monthly income from dairy farming, 37.5 per cent had small land holding (1-2 hectares), 75 per cent had medium economic motivation and 77.5 per cent had medium scientific orientation. The study revealed that majority of the respondents (62.5%) had medium level of entrepreneurial behaviour with medium innovativeness (46.67%), achievement motivation (57.5%), decision making ability (70%), risk orientation (50%), coordinating ability (67.5%), planning ability (59.17%), information seeking behaviour (73.33%), cosmopoliteness (82.5%) and self-confidence (56.67%). It could be observed that family size, herd size, milk production, monthly income from dairy farming, land holding, economic motivation and scientific orientation showed positive and significant relationship with entrepreneurial behaviour at 1% level of significance, whereas education and dairy experience were positively and significantly related to entrepreneurial behaviour at 5% level of significance. On the other hand, age had positive and non-significant relationship with entrepreneurial behaviour of dairy farm women.

Keywords: Dairy farm women, Entrepreneurial behaviour

Introduction: In past few years, India has achieved major milestones in the field of milk production. Our country ranks first among the world's milk producing Nations since 1998. As per latest data, total milk production in India is 176.4 million tonnes and per capita availability of milk is 374 grams per day (DAHDF, 2017). India's has also the largest bovine population in the world and India's livestock holds 11.6 per cent of world total livestock population.

In rural India, dairy farming has been practicing for generating employment and steady income. Thus, entrepreneurial development in the field of dairy sector might be the best possible way to make people competent and self-reliant. Nowadays, entrepreneurs have been taken as a concept, not only for industries but also in the development of the agriculture and allied sectors. Dairy farming is considered as an entrepreneurial venture predominantly for women because most of the women are involved in dairy activities starting from caring of animals to marketing the milk products.

In Uttarakhand, about 90 per cent of dairy farmers operates dairy at small and medium scale. Milk production of Uttarakhand state is 1.565 million tonnes and the basic dairy species of state is cow and buffalo (DAHDF, 2015). Dairy farming is an income generating sector by which rural women can socially empowered and their self-actualization and psychological needs can be fulfilled. Dairy farming helps them to earn money and reduce poverty of the family.

Rural women play a significant role in livestock production. On an average, they work nearly 15 hours in a day. Along with their household chores, they work on the field and take care of their

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livestock as well. Their contribution cannot be measured in economic terms. Being effective manager of resources, they have potential to become a successful entrepreneur. Hence, there is a need to explore what entrepreneurial characteristics women possessed and to identify the areas and entrepreneurial skills which needs to be developed in dairy sector.

Materials and Methods

The present study was conducted in Nainital district of Uttarakhand state. Nainital district was selected purposively as it has the highest milk production. There are eight blocks in the selected district. From these blocks, Haldwani block was selected purposively for the study due to highest milk production and large number of dairy farm women among all the blocks. Five villages were selected purposively from the Haldwani block with higher number of dairy entrepreneurs. A list of 120 respondents who were practicing dairy and possessing five or more than five animals were selected from all the five selected villages through Proportional Allocation method. The pre-tested interview schedule was used to get information on profile characteristics and entrepreneurial behaviour of dairy farm women. Statistical tools such as frequency, percentage, arithmetic mean, standard deviation, co-efficient of correlation and test of significance were used for analyze of data. Scale developed by Chaudhary et al. (2007) was used to measure the entrepreneurial behaviour of dairy farm women. The scale is comprised of nine entrepreneurial components i.e. innovativeness, achievement motivation, decision making ability, risk orientation, coordinating ability, planning ability, information seeking behaviour, cosmopoliteness and self -confidence. To measure the entrepreneurial behaviour of dairy farm women an Entrepreneurial Behaviour Index was developed.

$$EBI = \frac{\sum_{n=1}^{9} \frac{Totalobtainedscoreofninecomponents}{Maximumobtainablescoreofninecomponents} \times Scalevalueofninecomponents}{\sum_{n=1}^{9} Scalevaluesofninecomponents}$$

Results and Discussion

Profile characteristics of dairy farm women

The findings related to profile characteristics of dairy farm women has been presented in Table 1. It shows that majority of the dairy farm women (72.50%) belonged to middle age category, whereas, 14.17 per cent belonged to old age and 13.33 per cent belonged to young age category. Thus, it can be concluded that middle age (37-51 years) dairy farm women have more responsibility towards the family and are more efficient and experienced than the younger ones. Usually, dairy farming needs good experience in the field therefore; women between 37 to 51 years are actively engaged in dairy farming.

The data regarding education of the dairy farm women were 30.83 per cent were having education up to high school, followed by 27.50 per cent had education up to middle level. Furthermore, 19.17 per cent dairy farm women had primary level of education, 11.67 per cent were intermediate, 6.67 per cent were illiterates and only 4.16 per cent were belonged to graduates and above category. Education helps the dairy farm women to collect new information required for dairy enterprise. Generally, in rural areas, women are not allowed to higher education and indulged more in household activities. Thus, it can be concluded that mostly dairy farm women were educated up to high school which enable them to develop entrepreneurial competencies.

Regarding family size, 69.17 per cent dairy farm women had medium family size, followed by large (18.33%) and small (12.5%) family size. This might be due to the fact that dairy farming has many activities which cannot be managed by a single person. There should be a cooperative and trustful family who helps to upgrade dairy farming skills and make it a profitable venture.

Nearly sixty per cent i.e. (59.16%) dairy farm women had medium level of dairy experience (16-31 years), whereas 21.67 per cent dairy farm women had low level of dairy experience (less than 16 years) and only 19.17 per cent had high level of dairy experience (above 29 years). It can be concluded that most of the dairy farm women had 16 to 29 years of dairy experience. It mainly depends upon the age of the dairy farm women. Those who have high experience in dairy sector must be in middle or old age group. Dairy experience provides better understanding in the field of dairy enterprise.

It is evident from Table 1 that nearly half of the dairy farm women (52.50%) had medium herd size (6-10), whereas 36.67 per cent had small herd size (less than 6) and only 10.83 per cent had large herd size (more than 10). It may be due to the fact that women were involved in most of the household chores so they can manage medium herd size efficiently. Medium herd size helped them to spend their valuable time with their family members and has long term economic impacts.

The data also indicates that 52.50 per cent respondents had medium level of milk production from dairy animals (less than 18 litres), followed by 29.17 per cent with low milk production from dairy animals (above 25 litres) and 18.33 per cent had (18-25 litres) high milk production from dairy animals. Milk production can be considered as a booster or motivation for dairy farm women because higher the milk production from animals, higher the income.

Majority of the dairy farm women (72.5%) had medium level of monthly income from dairy farming, followed by 15 per cent had high level and only 12.5 per cent had low level of monthly income from dairy farming.

37.50 per cent of dairy farm women had small size of land holding (1-2 ha), whereas 33.33 per cent had marginal category (less than 1 ha), 20.84 per cent had semi- medium category (2-4 ha), 8.33 per

cent had medium category of land holding (4-10 ha) and none of them had large land holding (above 10 ha). This might be due to the reason that most of the families in Uttarakhand had fragmented land due to division of joint families.

The data in Table 1 also shows that three-fourth of the dairy farm women (75%) had medium level of economic motivation, followed by high (16.67%) and low (8.33%) level of economic motivation and 77.50 per cent dairy farm women had medium level of scientific orientation, followed by 12.5 per cent low level of scientific orientation and only ten per cent had high level of scientific orientation.

These findings are similar with the findings of Rathod et al. (2012), Yadav (2013), Bhosle et al. (2014), Kaur (2015), Raina et al. (2016), Chaurasiya et al. (2017) and Adhikari (2018).

Entrepreneurial behaviour of dairy farm women

Entrepreneurial behaviour of dairy farm women is defined as the cumulative outcome of nine components viz. innovativeness, achievement motivation, decision making ability, risk orientation, coordinating ability, planning ability, cosmopoliteness, self-confidence and information seeking behaviour. Entrepreneurial behaviour of dairy farm women was assessed for different components and presented in Table 2.

Innovativeness

The data in Table 2 shows that maximum number of dairy farm women (46.67%) had medium level of innovativeness, followed by high (37.5%) and low (15.83%) level of innovativeness.

Table 1 Profile characteristics of dairy farm women (n = 120)

S. No.	Characteristics	Category	Mean	SD	Frequency	Percentage
1.	Age	Young (<37 years)	44.28	6.86	16	13.33
		Middle (37-51 years)			87	72.50
		Old (>51 years)			17	14.17
2.	Education	Illiterate			8	6.67
		Primary education			23	19.17
		Middle education			33	27.50
		High school			37	30.83
		Intermediate			14	11.67
		Graduation and above			5	4.16
3.	Family size	Small (<5)	6.52	1.82	15	12.50
		Medium (5-8)			83	69.17
		Large (>8)			22	18.33
4.	Dairy experience	Low (<16 years)	22.52	6.26	26	21.67
		Medium (16-29 years)			71	59.16
		High (>29 years)			23	19.17
5.	Herd size	Small (<6)	9.68	3.77	44	36.67
		Medium (6-10)			63	52.50
		Large (>10)			13	10.83
6.	Milk production	Low (<18 litres)	21	2.83	35	29.17
		Medium (18-25 litres)			63	52.50
		High (>25 litres)			22	18.33
7.	Income from dairy farming	Low (<6000)	16,180	9,836.13	15	12.50
		Medium (6000-25000)			87	72.50
		High (>25000)			18	15.00
8.	Land holding	Marginal (<1 ha)			40	33.33
		Small (1-2 ha)			45	37.50
		Semi-medium (2-4 ha)			25	20.84
		Medium (4-10 ha)			10	8.33
		Large (>10 ha)			0	0
9.	Economic motivation	Low	19.83	1.77	10	8.33
		Medium			90	75.00
		High			20	16.67
10.	Scientific orientation	Low	23.15	2.22	15	12.50
		Medium			93	77.50
		High			12	10.00

The findings are in accordance with the findings of Lawrence and Ganguly (2012) and Tekale et al. (2013) that most of the dairy respondents had medium level of innovativeness. It might be due to proper education and medium level of dairy experience.

Achievement motivation

It is visible from Table 2 that, majority of the dairy farm women (57.5%) had medium level of achievement motivation whereas 35 per cent had high level of achievement motivation and only 7.5 per cent had low level of achievement motivation. Women engaged in dairy farming were found to be in medium to high level of achievement motivation which characterized them as successful entrepreneurs.

The findings are similar with the findings of Lawrence and Ganguly (2012), Tekale et al. (2013) and Patel et al. (2014) who also reported that majority of the respondents had medium level of achievement motivation.

Decision making ability

It is apparent from the Table 2 that 70 per cent dairy farm women had medium level of decision making ability, followed by 15 per cent who had high level of decision making ability and 15 per cent had low level of decision making ability.

Similar findings were reported by Lawrence and Ganguly (2012), Rathod et al. (2012), and Patel et al. (2014) who concluded that

Table 2 Distribution of dairy farm women based on their components of entrepreneurial behaviour (n=120)

S. No.	Components	Mean	SD	Category	Frequency	Percentage
1.	Innovativeness	21.53	3.64	Low (<18)	19	15.83
				Medium (18-24)	56	46.67
				High (>24)	45	37.50
2.	Achievement motivation	3.68	1.34	Low (<2)	9	7.50
				Medium (2-4)	69	57.50
				High (>4)	42	35.00
3.	Decision making ability	14.36	1.26	Low (<13)	18	15.00
				Medium (13-15)	84	70.00
				High (>15)	18	15.00
4.	Risk orientation	7.43	1.66	Low (<6)	27	22.50
				Medium (6-8)	60	50.00
				High (>8)	33	27.50
5.	Coordinating ability	7.16	1.48	Low (<6)	20	16.67
				Medium (6-8)	81	67.50
				High (>8)	19	15.83
6.	Planning ability	2.09	0.58	Low (<1)	19	15.83
				Medium (1-2)	71	59.17
				High (>2)	30	25.00
7.	Cosmopoliteness	7.84	1.20	Low (<7)	15	12.50
				Medium (7-9)	99	82.50
				High (>9)	6	5.00
8.	Self-confidence	4.78	1.33	Low (<3)	8	6.67
				Medium (3-5)	68	56.67
				High (>5)	44	36.66
9.	Information seeking behaviour	3.13	1.40	Low (<2)	9	7.50
				Medium (2-4)	88	73.33
				High (>4)	23	19.67

majority of the dairy respondents had medium level of decision making ability.

Risk orientation

It is evident from the data in Table 2 that half of the dairy farm women (50%) had medium risk orientation, whereas 27.5 per cent dairy farm women had high risk orientation and 22.5 per cent had low risk orientation. Risk bearing capacity of an individual depends on its socio-economic, personal and psychological aspects. A woman having better income with medium level of experience has medium risk orientation.The findings are similar with the findings of Lawrence and Ganguly (2012), Patel et al. (2014) who reported that maximum numbers of dairy respondents had medium level of risk orientation.

Coordinating ability

The data in Table 2 indicates that majority of the dairy farm women (67.5%) had medium level of coordinating ability, followed by 16.67 percent who had low level of coordinating ability and 15.83 per cent had high level of coordination ability. The medium level of coordinating ability possessed by majority of dairy farm women exhibits their ability to manage dairy as a successful venture.Similar findings were reported by Patel et al. (2014) who found that most of the dairy respondents had medium level of coordinating ability.

Planning ability

The results from the Table 2 reveals that most of the dairy farm women (59.17%) had medium level of planning ability, whereas 25 per cent had high level of planning ability and 15.83 per cent had low level of planning ability.Similar findings were reported by Lawrence and Ganguly (2012), Tekale et al. (2013), and Raina et al. (2016) who concluded that majority of the dairy respondents had medium level of planning ability.

Cosmopoliteness

It is inferred from data in Table 2 that 82.5 per cent dairy farm women had medium level of cosmopoliteness, whereas 12.5 per cent had low level of cosmopoliteness and only five per cent had high level of cosmopoliteness. It is evident that more than 80 per cent dairy farm women had medium level of cosmopoliteness. This shows that dairy farm women are actively engaged in seeking information from sources other than their own social system.

The findings are in accordance with the findings of Lawrence and Ganguly (2012), Tekale et al. (2013) and Raina et al. (2016) who also concluded that majority of the respondents had medium level of cosmopoliteness.

Self-confidence

It is evident from the Table 2 that more than half of the dairy farm women (56.67%) had medium level of self-confidence, followed by 36.66 per cent who had high level of self-confidence and 6.67 per cent had low level of self-confidence. This might be due to

Table 3 Distribution of the dairy farm women based on their overall entrepreneurial behaviour (n=120)

S. No.	Category	Frequency	Percentage
1.	Low (<52)	21	17.50
2.	Medium (52-67.5)	75	62.50
3.	High (>67.5)	24	20.00
	Mean	59.82	
	SD	7.65	

Table 4 Relationship between Entrepreneurial behaviour of dairy farm women with their profile characteristics (n=120)

S. No.	Profile characteristics	Correlation coefficient	t value
1.	Age	0.096	0.95
2.	Education	0.247**	2.53
3.	Family size	0.448*	4.96
4.	Dairy experience	0.237**	2.41
5.	Herd size	0.368*	3.92
6.	Milk production	0.449*	4.97
7.	Monthly income	0.614*	7.70
8.	Land holding	0.404*	4.37
9.	Economic motivation	0.500*	5.72
10.	Scientific orientation	0.417*	4.54

*Significant at 0.01 level of probability
t_{tab} = 2.62 (at 1% level of significance)

**Significant at 0.05 level of probability
t_{tab} = 1.98 (at 5% level of significance)

reason that most of the dairy farm women had medium economic motivation and medium level of income. Good income and economic status boost self-confidence of dairy farm women.

Similar findings were reported by Tekale et al. (2013), Patel et al. (2014) and Raina et al. (2016) who concluded that most of the dairy respondents had medium to high level of self-confidence.

Information seeking behaviour

It is clear from the Table 2 that majority of the dairy farm women (73.33%) had medium level of information seeking behaviour, followed by 19.67 per cent who had high level of information seeking behaviour and only 7.5 per cent had low level of information seeking behaviour.

The results are in accordance with the results of Rathod et al. (2012), Patel et al. (2014), and Raina et al. (2016) who also concluded that majority of the dairy respondents had medium level of information seeking behaviour.

Overall entrepreneurial behaviour of dairy farm women

On the basis of total entrepreneurial scores obtained by dairy farm women, they were grouped into three categories viz. low, medium and high and their frequency and percentage distribution are given in Table 3.

It is evident from the Table 3 that 62.5 per cent dairy farm women had medium level of entrepreneurial behaviour, whereas 20 per cent dairy farm women had high level of entrepreneurial behaviour and 17.5 per cent dairy farm women had low level of entrepreneurial behaviour. Thus, it can be concluded that most of the dairy farm women had medium to high level of entrepreneurial behaviour. This might be due to high dairy experience, good schooling, medium milk production, economic motivation and scientific orientation.

The findings are in accordance with the findings of Lawrence and Ganguly (2012), Raina et al. (2016) and Sadashive et al. (2017) who also concluded that maximum numbers of dairy respondents possessed medium to high level of entrepreneurial behaviour.

Relationship between profile characteristics and Entrepreneurial behaviour of dairy farm women

Data related to relationship between profile characteristics and entrepreneurial behaviour of dairy farm women are presented in Table 4. It revealed that family size, herd size, milk production, monthly income from dairy farming, land holding, economic motivation and scientific orientation had positive and significant relationship at 0.01 level of probability, whereas education and dairy experience had positive and significant relationship with entrepreneurial behaviour at 0.05 level of probability but age had positive and non-significant relationship with entrepreneurial behaviour of dairy farm women.

It indicates that family size, herd size, milk production, monthly income from dairy farming, land holding, economic motivation and scientific orientation were highly correlated with entrepreneurial behaviour of dairy farm women. Moreover, age did not have much influence on entrepreneurial behaviour of dairy farm women. It might be due to the reason that maximum respondents had medium family size (5-8 members). Family members cooperates in doing domestic as well as dairy farming work, helps in making best decisions, taking actions and boost self-confidence of a dairy farm woman.

Land holding had exhibited positive and significant relationship with entrepreneurial behaviour of dairy farm women. It might be due to reason that the respondents could use her land for growing green fodder for the dairy animals and for practicing and adopting new improved technology related to dairy farming. Thus, it was concluded that larger the land holding, higher the entrepreneurial behaviour of dairy farm women.

Monthly income and economic motivation showed positive and significant relationship with entrepreneurial behaviour of dairy farm women. It might be due to reason that economic motivation is a psychological condition of an individual which drives the respondents to strive hard and achieve higher income. These findings are similar in accordance with the findings of Patel et al. (2014) and Raina et al. (2016).

Conclusions

Entrepreneurial behaviour of a dairy farm woman is depended upon innovativeness, achievement motivation, decision making ability, risk orientation, coordinating ability, planning ability, information seeking behaviour, cosmopoliteness and self-confidence. Thus, effective entrepreneurship development programmes should be initiated on these parameters so that women can empower themselves. The results of the study showed that less percentage of women had high milk production. Therefore, efforts by veterinary experts, extension agents should plan training programmes for enhancing milk productivity. The findings indicate that very few dairy farm women had large herd size. Thus, efforts should be made to educate women about subsidies and other government schemes which enable them to increase the herd size. It is also inferred from the study that economic motivation, scientific orientation, milk production and herd size were positively related with entrepreneurial behaviour. The policy makers and training institutes on entrepreneurship should put more emphasis for designing training on these aspects.

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