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Identifying the Entrepreneurship Behavioral Dimension of Tribal Dairy Farmers in Balrampur District of Chhattisgarh

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ABSTRACT

Dairy farming is not an essential part of farming but also the most appropriate productive system, with enormous potential for improving the socio-economic status of dairy farmers in the tribal region. The study was conducted during 2018-19 in the Northern Hill Region of Chhattisgarh to identify the dimension of entrepreneurial behaviour of tribal dairy farmers with the help of Principal Component Analysis (PCA). It extracted the important information to display the pattern of similarity between the observations from the statistical data of tribal dairy farmers and to represent the new set of orthogonal variables as risk-bearing ability, level of interest, level of confidence, managerial ability, innovativeness, motivation, optimistic attitude, and risk respectively.

INTRODUCTION

India has been the achieved rapid growth in milk production in the past two and a half decades. The overall livestock population in the country stands at 536.76 million, a 4.8 per cent increase in the animal census – 2012. Across rural and urban areas, the total population is 514.11 million, with a proportional 95.78 per cent share across rural and 4.22 per cent in urban areas with a population of 145.91 million female cattle, which is 18.6 per cent up from the previous 2012 census (Animal Census Report, 2019). Dairying is an important livelihood enterprise in the tribal dominant state of Chhattisgarh. Milk and milk products account for the second-highest in the total value of output contributing around 7 per cent to the total value of output from agriculture and the allied sector of the state (CSO, 2017). The smallholdings further necessitate the complementarily between crop and livestock enterprise for a sustainable income of tribal farmers. Dairying not only provides additional income but also improves the dietary standards of the family of the poor tribal's. As a result, the per capita availability of milk is considerably low at 141 g/day as against the national average of 352 g/day (GOI, 2017). The livestock economy of the state is dominated by indigenous cattle contributing nearly 2/3rd of total milk production of 1.37 million tons in the state and the share is continuously increasing over the years from 56 per cent in 2001– 02 to 63.39 per cent in 2016–17. In rural areas, dairy farming is the key source of farm income (Porchezhiyan et al., 2016). Dairy farming is usually carried out by farmers as a subsidiary occupation to meet domestic needs and supplement farm revenues. Yet livestock production is projected to become vibrant to minimize deprivation in the contemporary era as the majority of rural areas have small farms (Gupta et al., 2013; Singh et al., 2016).

The twenty-first century is the century of entrepreneurship and every individual can be an agent for innovation and change. Entrepreneurship is regarded as one of the most crucial factors in the economic development of every region of the country (Chaudhary et al., 2017). Enterprises play a crucial role in creating new employment and creating new work environments. In rural regions, entrepreneurial growth is now seen as a means of improving the socio-economic performance of rural people and general rural economic development (Singh et al., 2014; Chaurasiya et al., 2016). The state of Chhattisgarh has an enormous number of dairy animals and has also been successful in creating efficient self-employment

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in rural areas through the dairy sector which in turn provides food for rural tribal folks. But Chhattisgarh is still in the Primitive stage because of the lack of breeders dairy animals and lack of scientific dairy management (Mooventhan et al., 2016). Considering the critical importance of dairy farming in the tribal region, entrepreneurship is required and this is one of how rural people can become more competent in dairy farming. The present study was conducted in the Northern Hill Region of Chhattisgarh to identify the dimension of the entrepreneurial behaviour of tribal dairy farmers.

METHODOLOGY

The study was conducted in the northern hill region of Chhattisgarh during the year 2018-19. The Ex – post facto Research Design methodology as suggested by Ray and Mondal (2011) was pursued with appropriate modifications according to the context and objective to be investigated. The state of Chhattisgarh consists of 27 districts out of which Balrampur-Ramanujgang district was chosen purposively. Considering the six blocks in the district of Balrampur- Ramanujganj, namely Balrampur, Ramchandrapur, Wadrafnagar, Rajpur, Shankargarh, and Kusmi (Samri), only two blocks, namely Ramchanderpur and Balrampur, were selected purposely. Based on the maximum availability of milk farmers in the villages, 2 villages from each selected block were chosen. The villages of Keoli and Gamhariya were selected for the analysis from the Ramchaderpur blocks and Manikpur and Kotarki for the analysis from the Balrampur block. A list was drawn up of farm families interested in dairy farming. 30 farm families were randomly selected from the list of each village making a total of 120 farm families (30 * 4 = 120). The data were collected by personal interview method with the help of a pre-tested structured schedule. Measurement of entrepreneurial behaviour of dairy farmers was done with the help of scale developed by Chaudhar et al., (2010) with little modification Thirty items were included in this study based on experts' advice and review of the Chhattisgarh state's past study with three level of responses classified as "always," "sometimes," and "never." The assigned scores were 3, 2, and 1 respectively. The data were analyzed with the help of descriptive statistics as these are short descriptive coefficients that can sum up a series of data, either to represent the entire population or to represent a subset of the population. Central trend metrics include mean number, while variance statistics include standard deviation. Later on, Principal Component Analysis was applied with the help of Statistical Package for the Social Sciences (SPSS), version 16.0 software.

RESULT AND DISCUSSION

Descriptive Statistics about entrepreneurial behaviour of tribal dairy farmers

Table 1 outlined the statistical analysis of the thirty entrepreneurial behavioural components of tribal dairy farmers in the study area. The suitability test, Bartlett sphericity (BTS), and Kaiser-Meyer-Olkin (KMO) were performed accordingly to ensure the use of the principal component analysis (Table 2). The results (BTS1.78503 and the point of significance in P=0.00) showed that the data were appropriate for the Principal component analysis. The result of KMO's sample adequacy calculation was 0.698,

Table 1. Entrepreneurial behavioural items of tribal dairy farmers

S.No.	Items	Mean	S.D.
1	I try to keep myself up to date on information regarding dairy practices.	1.95	0.58
2	I try all dairy practice at least once.	1.81	0.66
3	I feel restless until I have tried out dairy practice that I have heard about.	2.10	0.42
4	I adopt dairy practice followed by my follow farmer.	1.97	0.63
5	I am not interested in information on dairy practice.	1.91	0.62
6	I think a training program on dairy technology is a waste of time.	1.59	0.73
7	I subscribe to literature on dairy.	1.66	0.72
8	I discuss dairy practices with other farmers.	1.96	0.51
9	I work hard so that I can get more yield and economic return.	2.02	0.59
10	Dairy cannot be considered successful unless he/she makes maximum profit	2.26	0.73
11	Dairy is the batter venture than other enterprises.	1.99	0.57
12	I will consider myself successful dairy farmers if I make a profit out of it.	2.33	0.77
13	I try only those dairy practices which are likely to help me earn more money.	2.16	0.59
14	I prefer dairy over other activities as it helps me make more money.	2.58	0.68
15	I like to plan in advance for my dairy enterprise.	2.03	0.56
16	I am always keeping to maintain my social status	2.08	0.62
17	I like to work hard until I am satisfied with the output.	1.98	0.53
18	I want to succeed in my dairy venture as it will prove my worth	1.59	0.77
19	I feel very happy when another farmer appreciates dairy practice.	2.27	0.77
20	My ambition in life is to own one of the largest dairy unit in the district	1.58	0.75
21	I like to use dairy technology even it involves a lot of hard work.	1.92	0.51
22	I would like to close my dairy venture as I am not able to give much time to my family	1.93	0.53
23	A farmer would be foolish to take up risk venture.	1.95	0.48
24	I am willing to take greater risk than others as it will also give me more profit.	1.53	0.65
25	I will take a loan to try out a new dairy	1.51	0.65
26	I feel that there is no difficulty in me achieving targeted milk yield	1.58	0.68
27	Mostly, I am sure about my technical abilities with regard to dairy	1.96	0.44
28	I like to take lead in discussion on dairy.	1.90	0.53
29	I can undertake dairy activities on my own rather than taking constant guidance from others	1.98	0.48
30	I always try out some new dairy practice in my unit.	1.96	0.46

Table 2. KMO and Bartlett's test for entrepreneurial behaviour items of tribal dairy

Kaiser-Meyer-Olkin measure of sampling adequacy (KMO)		0.698
Bartlett's Test ofSphericity	Approx. Chi-Square	1.78503
	d.f.	435
	Sig.	.000

indicating that assessments endorsed the appropriateness for the study of the principal component analysis. It was graphically represented and explained in Figure 1. That an Eigen value of only eight components was more than one which truly represented the relationship between the statements of a factorial component.

Table 3 represented the factor analysis to classify operational factors that shaped a homogeneous group of variables called factors through an intrinsic relational conglomeration of variables. Thirty entrepreneurial behavioural components were found to combine into eight factors. It can be seen that the Eigenvalue of one component was greater than one. Only factors that have Eigenvalues greater than one should be retained following the rules of the principal component analysis. The first component had an Eigenvalue of 6.466 with a percentage of the variance as 21.555 and a percentage of cumulative as 21.555. The component has included five Entrepreneurial behavioural statements i.e., I feel that there is no difficulty in me achieving targeted milk yield (0.791), I am willing to take greater risk than others as it will also give me more profit (0.780), My ambition in life is to own one of the largest dairy units in the district (0.722), I will take a loan to try out a new dairy (0.716) and I want to succeed in my dairy venture as it will prove my worth (0.688). The component one is labeled as "Risk Bearing Ability". The ability to take risks is related directly to tribal dairy farmers and their financial actions, including liquidity, solvency, productivity, repayment capacity, and financial performance. Some were in a better position to take a risk than others, but most of the respondents were not willing to take a risk because of their economic condition.

The Second component had Eigenvalue of 4.321 with the percentage of variance as 14.405 and the percentage of cumulative as 35.959. The component included the eight Entrepreneurial behavior items i.e., I like to take lead in a discussion on dairy (0.466), I think training program on dairy technology is a waste of time (0.696), I subscribe to the literature on dairy (0.627), I work hard so that I can get more yield and economic return (0.591), I always try out some new dairy practice in my unit (0.556), I discuss dairy practices with other farmers (0.554), I am not interested in information on dairy practice (0.501) and I like to take lead in a discussion on dairy (0.466). The second component is labeled as "Level of Interest". Most of the farmers were showing more interest in dairy farming where some of them take over the ownership from their parents or grandparents. But there is still a need to increase the interest among dairy farmers in making the dairy occupation more successful. The third component had an Eigenvalue of 2.280 with the percentage of variance as 7.601 and the percentage of cumulative as 43.560. The component included two Entrepreneurial behavioural statements i.e. Mostly, I am sure about my technical abilities about dairy (0.781), I can undertake dairy activities on my own rather than taking constant guidance from others (0.623). The third component is labeled as "Level of Confidence". Few dairy farmers showed greater confidence in milk production, where most of them had low confidence because of the fluctuating cost of fodder under varied seasonal conditions.

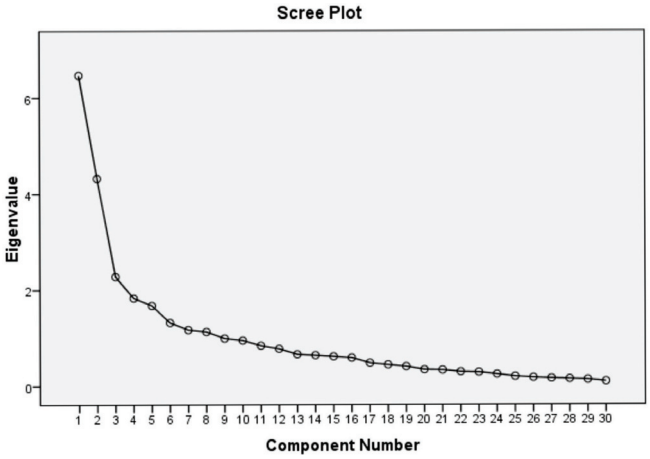

Figure 1. Eigenvalue of Entrepreneurial Behaviour

The fourth component had an Eigenvalue of 1.832 with the percentage of variance as 6.107and the percentage of cumulative as 49.667. The component included two Entrepreneurial behavioural statements i.e. I like to work hard until I am satisfied with the outcome (0.761), I like to plan for my dairy enterprise (0.692), I am always keeping to maintain my social status (0.630) and dairy is the batter venture than other enterprises (0.572). The component fourth is labeled as "Managerial Ability". In the study area, the farmer had a low managerial ability because most of the dairy farmers were uneducated. Therefore, it is very necessary for providing knowledge and training of dairy management to the farmers in the study area. The fifth component had an Eigenvalue of 1.676 with the percentage of variance as 5.586 and a percentage of cumulative as 55.253. The component included the four Entrepreneurial behavioural items i.e. I try to keep myself up to date on information regarding dairy practices (0.811), I feel restless until I have tried out dairy practice that I have heard about (0.656), I try all dairy practice at least once (0.615) and I adopt dairy practice followed by my follow farmer (0.530). The component fifth is labeled as "Innovativeness". There was a lack of innovativeness among the farmers in the study area. But few successful dairy farmers were observed there. It was just because of their hard work and innovativeness; they had achieved impressive milestones in improving milk production and optimizing cow and buffalo breeds. Innovation throughout dairy farming has helped to boost its production and returns to farmers in the study area. The sixth component had an Eigenvalue of 1.320 with the percentage of variance as 4.401 and a percentage of cumulative as 59.655. The component had included the following four Entrepreneurial behavioural items i.e. I like to use dairy technology even it involves a lot of hard work (0.705), I would like close my dairy venture as I am not able to give much time to my family (0.635), I feel very happy when another farmer appreciates dairy practice (0.431) and Dairy cannot be considered successful unless he makes a maximum profit (0.450). The component sixth is labeled as "Motivation". Most of the farmers have a medium level of motivation because of a lack of resources and Capital.

Table 3. Principal component factor analysis (varimax rotation), factor loading, and Communalities for entrepreneurial behaviour items the tribal dairy farmers

S.No.	Items	Rotated Component Matrix(a)								
		Component								
		1	2	3	4	5	6	7	8	Communalities
1.	I feel that there is no difficulty in me achieving targeted milk yield	0.791								0.733
2.	I am willing to take greater risk than others as it will also give me more profit.	0.780								0.776
3.	My ambition in life is to own one of the largest dairy unit in the district	0.722								0.790
4.	I will take a loan to try out a new dairy	0.716								0.730
5.	I want to succeed in my dairy venture as it will prove my worth	0.688								0.647
6.	I think training program on dairy technology is a waste of time.		0.696							0.706
7.	I subscribe to literature on dairy.		0.627							0.602
8.	I work hard so that I can get more yield and economic return.		0.591							0.632
9.	I always try out some new dairy practice in my unit.		0.556							0.735
10.	I discuss dairy practices with other farmer.		0.554							0.620
11.	I am not interested in information on dairy practice.		0.501							0.571
12.	I like to take the lead in discussion on dairy.		0.466							0.689
13.	Mostly, I am sure about my technical abilities about dairy			0.781						0.705
14.	I can undertake dairy activities on my own rather than taking constant guidance from others			0.623						0.501
15.	I like to work hard until I am satisfied with the outcome.				0.761					0.773
16.	I like to plan in advance for my dairy enterprise.				0.692					0.611
17.	I am always keeping to maintain my social status				0.630					0.750
18.	Dairy is the batter venture than other enterprises.				0.572					0.628
19.	I try to keep myself up to date on information regarding dairy practices.					0.811				0.776
20.	I feel restless until I have tried out dairy practice that I have heard about.					0.656				0.622
21.	I try all dairy practice at least once					0.615				0.691
22.	I adopt dairy practice followed by my follow farmer					0.530				0.699
23.	I like to use dairy technology even it involves a lot of hard work.						0.705			0.576
24.	I would like to close my dairy venture as I am not able to give much time to my family						0.635			0.524
25.	I feel very happy when another farmer appreciates dairy practice.						0.431			0.658
26.	Dairy cannot be considered successful unless he makes maximum profit						0.450			0.686
27.	I try only those dairy practices which are likely to help me earn more money							0.797		0.786
28.	I prefer dairy over other activities as it helps me make more money.							0.653		0.660
29.	I will consider myself a successful dairy if I make a profit out of it.							0.471		0.575
30.	A farmer would be foolish to take up risk venture..								0.737	0.749
	Eigen values		6.466	4.321	2.280	1.832	1.676	1.320	1.171	1.131
	Percentage of variance		21.555	14.405	7.601	6.107	5.586	4.401	3.904	3.771
	Percentage of Cumulative		21.555	35.959	43.560	49.667	55.253	59.655	63.559	67.330

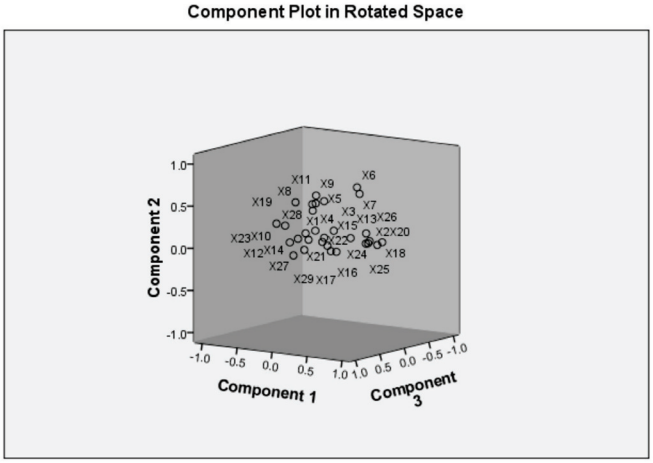

Figure 2. The component plot of Entrepreneurial Behaviour

The seventh component had an Eigenvalue of 1.171 with the percentage of variance as 3.904, and the percentage of cumulative as 63.559. The component had included three Entrepreneurial behavioural items i.e. I try only those dairy practices which are likely to help me earn more money (0.797), I prefer dairy over other activities as it helps me make more money (0.653) and I will consider myself a successful dairy if making a profit out of it (0.471). Component seventh is labeled as "Optimistic Attitude". Dairy farming can be a tough job and over the last few years, farmers say it has been even harder because of low milk prices, but now some are optimistic because milk prices will be improved and farmers can get more profit from dairy farming. The Eighth component had an Eigenvalue of 1.131 with the percentage of variance as 3.771, and the percentage of cumulative as 67.330. The component had included one Entrepreneurial behavioural item i.e. a farmer would be foolish to take up a risk venture (0.737). The component eighth is labeled as "Risk". The dairy farming profession includes several kinds of risks like price variability, marketing risk, animal health risk, and productivity risk because most of the farmers are having an indigenous cow. It has been depicted graphically in Figure 2. That the components were plotted in space rotated matrix to have a clearer presentation in which both the position of data concerning the factorial component and the relationship between data provided by the thirty statements of entrepreneurial behaviour of tribal dairy farmers.

CONCLUSION

It is concluded that Factor analysis for entrepreneurial behaviour identifying the operational factors that have put up through an intrinsic relational conglomeration of the items to ultimately form a homogenous 30 entrepreneurial behavioural items. Further, it has been conglomerated into 8 factors as risk-bearing ability, level of interest, level of confidence, managerial ability, innovativeness, motivation, optimistic attitude, and risk respectively. Dairy farming in the study region holds an excellent future as long as tribal dairy farmers are fitted with greater knowledge of scientific dairy farming. The research study examined the current status of tribal dairy farmers and the underlying realities of entrepreneurial behaviour. Adequate strategies to raise milk production should be directed at increasing milk productivity rather than animal population to improve the milk production situation in this region. The political consequences for the systemic organisation of large-scale awareness campaigns must be established and mass-media can be used to facilitate milk farming in a major way.

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