



## Research Article

# ASSOCIATION BETWEEN ASPECTS OF DAIRY FARMERS AND THEIR ANNUAL INCOME THROUGH DAIRY FARMING

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**Abstract:** Madhya Pradesh comprises of 52 districts of which 5 districts are in the Gwalior division. Gwalior division stands third rank in milk production and seventh rank in livestock population among all the division of Madhya Pradesh. Since their wide gap between both production and livestock population, hence were in order to achieve the above-mentioned objectives Gwalior division was purposively selected for the present study. The result reported that class (0.172), education (0.204), herd size (0.140), milk production (0.152), extension contact (0.137), and mass media exposure (0.134) were positive and highly significant related with annual income through dairy farming.

**Keywords:** Aspects of dairy farmers, Annual income, Dairy farming

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## Introduction

Livestock animals' species assumes a significant function in Indian economy. About 20.5 million individuals depend on domesticated animals for their occupation. Animals contributed 16 percent to the pay of little ranch families as against a normal of 14 percent for every single provincial family. An animal gives vocation to two-third of rustic network. It additionally gives work to about 8.8 percent of the populace in India. India has huge animals' assets. Livestock animals' division contributes 4.11 percent GDP and 25.6 percent of absolute Agriculture GDP. India determines almost one-third of the gross home-grown populace from agribusiness and has two-third of financially dynamic populace, occupied with horticulture. The portion of animals' item is assessed at 21 percent of absolute Agriculture area. India claims the biggest Livestock animals' populace representing almost 57 percent of the world bison populace and 16 percent of the cows' populace. Dairy cultivating is one of the significant exercises of the rustic populace of our nation. The significance of the dairy, as an auxiliary industry to horticulture, has worried by the National Commission on Agriculture. India is the leading producer of milk and the milk production expanded by 44.3 percent during the most recent ten years as it was expanded from 84.4 million tons (2000) to 121.8 million tons (2010). In M.P. the all-out milk creation was recorded 7514000 tons in the year 2010-2011. Madhya Pradesh has six positions of profoundly milk creation states in India. The state represents more than six percent share in the absolute milk creation in the nation. Madhya Pradesh has 7 dairy agreeable that represents most extreme measure of milk acquisition in the state. These dairy agreeable works under Madhya Pradesh State Cooperative Dairy Federation Limited which is associated with acquisition, handling, selling and quality control of dairy items in the state. The production of milk in Madhya Pradesh state is 8.838 million ton. Milk production every day for cows of neighbourhood breed is 1.20, for crossbred dairy animals are 5.91 and for bison are 3.00. In Gwalior division of Madhya Pradesh have third position in milk creating division. The absolute milk creation of Gwalior division is 1573.31 thousand ton the fundamental wellspring of milk creation is bovines and buffalo [1-5]. The specific objectives are to: (i) To study the aspects of dairy farmers. (ii) To assess the relationship between aspects of dairy farmers and their annual income through dairy farming.

## Material and Methods

### Selection of Study area

Madhya Pradesh is comprised of ten divisions that is Gwalior division. That is Ujjain division, Indore, Gwalior, Bhopal, Sager, Jabalpur, Chambal, Rewa, Hoshangabad and Shahdol. Madhya Pradesh comprises of 52 districts of which 5 districts are in the Gwalior division. Gwalior division stands third rank in milk production and seventh rank in livestock population among all the division of Madhya Pradesh. Since their wide gap between both production and livestock population, hence were in order to achieve the above-mentioned objectives Gwalior division was purposively selected for the present study.

### Sampling plan

Multistage sampling was employed for constructing sampling plan of the study.

### Selection of district

Among the five districts of Gwalior division Shivpuri, Gwalior and Guna districts were selected. These districts stand first, second and third position in milk production. Among the districts of Gwalior division respectively the milk production in Shivpuri, Gwalior and Guna were 496.14, 399.75 and 277.74 thousand tonnes, respectively. This clearly indicates the important of dairy farming in the area.

### Selection of block

Among the three selected districts of Gwalior division their and eight, four and five blocks in Shivpuri, Gwalior and Guna, respectively. A separate list of blocks of each selected district were prepared and with the help of officials of respective districts, three blocks (two blocks having highest dairy farmer and one block having lowest dairy farmer) was identify for the selection of blocks.

### Selection of respondent

In the last stage of sampling process, the block wise list of dairy farmers was prepared for each selected block. Overall, 300 dairy farmers were selected as respondents with the help of simple random sampling without replacement under proportional scheme.

## Result and Discussion

[Table-1] shows that the widely held of dairy farmers (61.67%) comes in middle age group instead young (23.33%) and old (15%).

Table-1 Distribution of the dairy farmers according to their age

SN	Category	No. of dairy farmers	%
1	Young (up to 35 year)	70	23.33
2	Middle (36-45 year)	186	62
3	Old (above 46 year)	44	14.67
	Total	300	100

[Table-2] categorization of the class as stated in market area where the dairy farmers selling of milk production inspected that 53.33 percent dairy farmers imminent in middle class, instead lower class (28.34%) and 18.33 percent imminent in upper class.

Table-2 Distribution of the dairy farmers according to their class

SN	Category	No. of dairy farmers	%
1	Lower	85	28.34
2	Middle	160	53.33
3	Upper	55	18.33
	Total	300	100

It is apparent from data inspected that 52 percent dairy farmers come in secondary education, instead high school (22%), primary level (18.33%), Illiterate (4.33%) and merely 3.34 percent of the dairy farmers above high school [Table-3].

Table-3 Distribution of the dairy farmers according to their education

SN	Category	No. of dairy farmers	%
1	Illiterate	13	4.33
2	Primary level (1-5 <sup>th</sup> )	55	18.33
3	Secondary level (6 to 8 <sup>th</sup> )	156	52.00
4	High school (10 <sup>th</sup> )	66	22.00
5	Above high school (above 10 <sup>th</sup> )	10	3.34
	Total	300	100

[Table-4] shows that the 56.67 percent dairy farmers come in small farmers, instead marginal (20.33%), medium (19.66%) and large dairy farmers (3.34%).

Table-4 Distribution of the dairy farmers according to their Land ownership

SN	Category	No. of dairy farmers	%
1	Marginal (<1 ha)	61	20.33
2	Small (1.1 to 2 ha)	170	56.67
3	Medium (2.1 to 5 ha)	59	19.66
4	Large (>5 ha)	10	3.34
	Total	300	100

[Table-5] shows that widely held of the dairy farmers 66.66 percent comes in medium herd size with 188 cows, 504 buffalos and 6 goats, instead 28.67 percent comes in small herd size with 79 cows and 146 buffalos and 4.67 percent come in large herd size with 15 cows and 120 buffalos.

Table-5 Distribution of the dairy farmers according to their herd size

SN	Categories	No. of milch animals			No. of dairy farmers	%
		Cow	Buffalo	Goat		
1	Small	79	146	0	86	28.67
2	Medium	188	504	06	200	66.66
3	Large	15	120	0	14	4.67
	Total	282	770	06	300	100

[Table-6] shows that the majority of the dairy farmers (65.34%) comes in medium milk production with cows 752 liters/day, buffalo 3528 liter/day and goats 12 liters/day, instead 22.66 percent comes in low milk production with cows 316 liters/day and buffalos 1022 liters/day and 12 percent dairy farmers comes in high milk production with cows 60 liters/day and buffalos 840 liters/day.

Table-6 Distribution of the dairy farmers according to their milk production (Liters/day)

SN	Categories	Milk production- liters/day (No. of milch animals)			No. of dairy farmers	%
		Cow	Buffalo	Goat		
1	Low	316 (79)	1022 (146)	0 (0)	68	22.66
2	Medium	752 (188)	3528 (504)	12 (6)	196	65.34
3	High	60 (15)	840 (120)	0 (0)	36	12.00
	Total				300	100

[Table-7] shows that the widely held of the dairy farmers (72.33%) comes in medium milk consumption with cows 180 liters/year, buffalos 705 liters/year and goats 12 liters/year, instead 21.67 percent comes in low milk consumption with cows 66 liters/year and buffalos 255 liters/year and 6 percent dairy farmers have high milk consumption with cows 6 liters/year and buffalos 42 liters/year.

Table-7 Distribution of the dairy farmers according to their milk consumption (Liters/year)

SN	Categories	Milk consumption- liters/year			No. of dairy farmers	%
		Cow	Buffalo	Goat		
1	Low (< 2.31lit./year)	66	255	0	65	21.67
2	Medium (2.31-4.29 lit./year)	180	705	12	217	72.33
3	High (> 4.29 lit./year)	6	42	0	18	6.00
	Total				300	100

[Table-8] shows that the majority of the dairy farmers (60.34%) comes in high social participation, instead low (29.66%) and high (10%) comes in social participation.

Table-8 Distribution of the dairy farmers according to their social participation

SN	Category	No. of dairy farmers	%
1	Low (7-12 Score)	89	29.66
2	Medium (13-17 Score)	181	60.34
3	High (18-21 Score)	30	10
	Total	300	100

[Table-9] shows that the widely held of the dairy farmers (62%) comes in medium level of extension contact, instead low (20.33%) and high (17.67%).

Table-9 Distribution of the dairy farmers according to their extension contact

SN	Category	No. of dairy farmers	%
1	Low	61	20.33
2	Medium	186	62.00
3	High	53	17.67
	Total	300	100

[Table-10] shows that the widely held of the dairy farmers (57.67%) comes in medium level of mass media exposure, instead 21.33 percent comes in high and 21 percent of the dairy farmers comes in low level of mass media participation.

Table-10 Distribution of the dairy farmers according to their mass media exposure

SN	Category	No. of dairy farmers	%
1	Low	63	21.00
2	Medium	173	57.67
3	High	64	21.33
	Total	300	100

[Table-11] shows that the widely held 62 percent of the dairy farmers comes in medium category of annual income through dairy farming; instead 25.66 percent high and only 12.34 percent comes in low category of annual income through dairy farming.

Table-11 Distribution of the dairy farmers according to their annual income through dairy farming

SN	Category	No. of dairy farmers	%
1	Low (< Rs. 55,000)	37	12.34
2	Medium (Rs. 55,000 to 75,000)	186	62.00
3	High (> Rs. 75,000)	77	25.66
	Total	300	100

Table-12 Relationship between selected aspects of dairy farmers with their annual income through dairy farming

SN	Variables	Correlation coefficient 'r' value	P value	't' value
1	Age	0.079	0.086	1.368 <sup>NS</sup>
2	Class	0.172	0.001	3.014 <sup>**</sup>
3	Education	0.204	0.0001	3.597 <sup>**</sup>
4	Land ownership	-0.100	0.041	-1.734 <sup>*</sup>
5	Herd size	0.140	0.007	2.440 <sup>**</sup>
6	Milk production	0.152	0.004	2.654 <sup>**</sup>
7	Milk consumption	-0.067	0.123	-1.159 <sup>NS</sup>
8	Social participation	0.101	0.040	1.752 <sup>*</sup>
9	Extension contact	0.137	0.008	2.387 <sup>**</sup>
10	Mass media exposure	0.134	0.01	2.334 <sup>**</sup>

<sup>\*\*</sup>Significant at 0.01 level of probability <sup>\*</sup>Significant at 0.05 level of probability <sup>NS</sup>= Non significant

### Assess the relationship between aspects of dairy farmers and their annual income through dairy farming

[Table-12] spectacle that the independent variables viz., class (0.172), education (0.204), herd size (0.140), milk production (0.152), extension contact (0.137), and mass media exposure (0.134) were positive and highly significant related with annual income through dairy farming of the dairy farmers at 0.01 level of significance while, social participation (0.101) was positively and land ownership (-0.100) was negatively significant related with annual income through dairy farming of the dairy farmers at 0.05 level of significance. At the end of age (0.079) and milk consumption (-0.067) were found to be not significant.

### Conclusion

If we look at here independent variables viz., class, education, herd size, milk production, extension contact, and mass media exposure were positive and highly significantly related with annual income through dairy farming of the dairy farmers. Any type of program or policy is formulated by the government, NGO or any other institution when we keep these independent variables in mind then the implementation of the policy or programmes becomes more effective as well as helping the farmers to strengthen their economic position. By contrast social participation was positively and land ownership was negatively significant related with annual income through dairy farming of the dairy farmers. In the case of land ownership, it is seen that as the land gets reduced to the farmer, his interest in animal husbandry increases as he gets additional income through animal husbandry. Due to less land, it is unable to take crop in more area. Government should pay attention while making policies that more focus should be placed on marginal and small farmers if you do so, our project is successful. At the end of age and milk consumption were found to be not significant. The above findings were supported by Kumar, *et. al.*, (2018) [1], Lenka and Satpathy (2020) [2], Rai Kumar (2019) [3], Shadap and Dkhar (2019) [4] and Shahjar (2018) [5] in their studies.

**Application of research:** If we look here, the government and any policymakers should ensure the participation of villagers at every level; this helps in program implementation and also strengthens the economic condition of the farmers.

**Research Category:** Agricultural Extension and Communication

**Abbreviations:** NGO- Non-Governmental Organization

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**Cultivar / Variety / Breed name:** Dairy animals (Milch animals)

**Conflict of Interest:** None declared

**Ethical approval:** This article does not contain any studies with human participants or animals performed by any of the authors.  
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