



A COMPARATIVE STUDY ON FINANCIAL PERFORMANCE OF SELECTED DAIRY UNITS IN GUJARAT AND PUNJAB

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Abstract- *On a national and international basis, India has been the top producer and consumer of dairy products. Business enterprises depend on finance to survive. The goal of the commercial enterprise can be accomplished with the aid of efficient financial management. Comparing the financial results of a few dairy units in Gujarat and Punjab is the study's major goal. The profitability ratio analysis and an independent sample t-test were used in the research study, which was carried out utilizing a non-convenient probability sampling and secondary data obtained from the annual report of selected dairy units in Gujarat and Punjab. The average lowest net profit margin and return on assets ratio were acquired by the Dudhdhara and Gurdaspur whereas the lowest return on capital employed ratio was gained by the Banas, Bathinda, Gurdaspur and Sangrur. It can be concluded that there is a significant difference between the profitability ratio of the selected dairy units in Gujarat and Punjab.*

Keywords *Financial Performance, Profitability Ratio Analysis, Gujarat and Punjab.*

INTRODUCTION

In the world, India is the largest manufacturer and consumer of milk. The total milk contribution of India is 24% globally. The top three milk-producing states in 2023 are Rajasthan, Uttar Pradesh and Madhya Pradesh. Milk production in India is necessary for fulfilling the nutritional requirement, creation of rural employment and development of the rural economy. Gujarat produced 16.72 MMT of milk production in 2021-22. Punjab produced 14.08 MMT of milk in 2021-22. (Milk Production in India | Top Milk Producing States in 2023) Amul, an Indian dairy cooperative, has a brand worth of over three million US dollars, making it one of the most valuable brands in the world. Karnataka Milk Federation and this Gujarat-based cooperative were the two most powerful entities in the nation. (Dairy industry in India - statistics & facts, 2023)

REVIEW OF LITERATURE

(Baban, Sami, & Ibrahim, 2023), this study aims to estimate the efficiency of financial performance in the Jordanian Dairy Sector for the period 2010-2020. The data are collected through the financial annual reports. It was examined that the financial performance of the Jordanian Dairy Sector has reduced during the study period, 2010-2020. It was revealed that all averages of financial efficiency using the standards of financial ratio were increased in relation to the size of debts and profits.

(Khan, Ahmed, & Azhar, 2021), the purpose of the study is to investigate the solvency and profitability condition of selected dairy companies CDPL, Hatsun, Haritage, Parag and Prabhat. The solvency has been examined by debt to equity ratio, interest coverage ratio and proprietary ratio. The study shows that there is a significant difference in terms of current ratio, debt to equity ratio, proprietary ratio, debtor's turnover ratio and total assets turnover ratio of selected dairy firms in India. The research study indicated that there is no significant difference in terms of inventory turnover ratio, fixed assets turnover ratio and interest coverage ratio.

(Alam, Sampa, Anny, & Afrin, 2022), the present study examined the profitability and productivity of dairy milk production from a survey of 70 farmers and market actors in the Dhaka region. The data of the study were collected through face-to-face interviews with milk producers and market actors. The period of the data collection is January to March- 2018. The Cobb- Douglas production function is responsible for factors that affect dairy milk production. It can be concluded from the study, the dairy farmers earned 2.17 taka when investing 1 taka in dairy farming which can be examined by the estimated Benefit Cost Ratio (BCR). The results of the study concluded that dairy milk production was highly profitable and it would be helpful for dairy farmers to improve the socio-economic condition in the study areas.

RESEARCH GAP

The different studies were reviewed about the dairy industry. The present study has taken into consideration the financial performance of selected dairy units and is helpful for the stakeholders' of the Indian dairy sector. Various research work took place to examine the financial performance analysis of dairy co-operatives in India and outside India but the researcher could not trace any study on the comparative financial performance analysis for the dairy co-operatives in the states of Gujarat and Punjab. Taking this as a research gap, the study has been undertaken to analyze and compare the financial performance of selected dairy units during 2010-11 to 2020-21. The study will be helpful to the Government, private dairy units, dairy farmers and research scholars and dairy authorities for policy making and taking necessary measures for this sector as a whole.

RESEARCH METHODOLOGY

This research focuses on selected five dairy units in Gujarat and Punjab with a view to examining their comparative financial performance for the last eleven years' data from the year 2010-11 to 2020-21.

Research problem

In India, 70 million farmers are directly involved in dairy sector. The dairy sector of India support the economy and create the employment especially for the rural poor people. Thus, it is necessary to inspect financial performance of selected dairy units in Gujarat and Punjab.

Objectives of the Study

To understand and compare the Profitability performance of selected dairy units in Gujarat and Punjab.

The Hypothesis of the Study

H₀₁: There is no significant difference between the profitability ratio of selected dairy units in Gujarat and Punjab.

H_{0a}: There is no significant difference between the net profit ratio of selected dairy units in Gujarat and Punjab.

H_{0b}: There is no significant difference between the return on assets ratio of selected dairy units in Gujarat and Punjab.

H_{0c}: There is no significant difference between the return on capital employed ratio of selected dairy units in Gujarat and Punjab.

H₁: There is a significant difference between the profitability ratio of selected dairy units in Gujarat and Punjab.

Period of the Study

Eleven years from 2010-11 to 2020-21.

Research Design

The descriptive research design is based on secondary data from annual reports of selected dairy units in Gujarat and Punjab.

Sample Design and Selection**Table 1 Sample Design**

	Gujarat	Punjab
Population of the study	Total registered- 17 co-operatives milk producing dairy units	Total registered- 11 co-operatives milk producing dairy units
Sample selection	5- dairy units	5- dairy units

Sampling Techniques

Non- Probability convenient sampling method is used for the research work.

Collection of Data

The data was collected through published annual reports

Tools and Techniques

Comparative financial performance was examined with the following profitability ratios.

Table 2 Ratio Selected for the Study

Sr.No	Profitability Ratio Analysis
1	Net Profit Ratio (%) = $\frac{\text{Net Profit}}{\text{Sales}} \times 100$
2	Return on Assets(%) = $\frac{\text{Net Profit after Taxes}}{\text{Avg.Total Assets}} \times 100$
3	Return on Capital Employed (%) = $\frac{\text{EBIT}}{\text{Capital Employed}} \times 100$

- (Pandey, Financial Management, 2015)
- (Chandra, Financial Management Theory and Practice, 2013)

Significance of the Study

This study is helpful in selecting five dairy units in Gujarat and Punjab to examine and compare their financial performance with one another. Additionally, it will be helpful for the government to inspect the dairy co-operatives' milk union performance according to their progress and assist in formulating various schemes for better-performing dairy cooperatives.

DATA ANALYSIS AND INTERPRETATION

Financial Analysis

Net profit Ratio: The average net profit ratio of the Dudhdhara dairy unit is a minimum of 0.23 % than other selected dairy units in Gujarat. The Dudhdhara dairy unit's net profit is minimum because in the entire study period, the net profit ratio is less than 0.30 %. The average net profit ratio of the Uttam dairy unit is 0.97%. From the above table, it can be concluded that the net profit ratio of Uttam is more than 1% in the five years of the study period. In Punjab dairy units, the average net profit ratio of the Bathinda, Gurdaspur and Sangrur dairy units is in negative mode i.e. -0.17, -3.34 and -0.88 % respectively. The higher net loss is examined in the Gurdaspur dairy unit because in the six years, this ratio is in a negative mode. The Ludhiana dairy unit net profit ratio is in a positive trend during the entire study period. The average net profit ratio of Ludhiana is 0.81%.

Return on Assets Ratio: In selected dairy units of Gujarat, the return on assets ratio is good enough in Amul, Dudhdhara and Gopal dairy units so it can be said that these three dairy units' assets are properly utilized to earn profit. The Gopal and Uttam dairy units' average return on assets ratio is 1.89% and 1.90 %, which is the maximum. It can be examined that the Gopal dairy unit return on assets ratio is more than 2 %. The Uttam dairy unit return on assets ratio is 4.23 % and 4.21 % in the years 2014-15 and 2015-16. On the other side, the average return on asset ratio of the Bathinda, Gurdaspur and Sangrur is in negative mode at 0.14 %, 3.9 %. 1.7 %. The return on assets ratio of Gurdaspur is in a negative mode during the years 2013-14 to 2017-18. The average return on assets ratio of Patiala and Ludhiana is nearly 2 times.

Return on Capital Employed Ratio: The average return on capital employed ratio of the Banas dairy unit is -11.08 % because the return on capital employed ratio of the Banas dairy unit is found highly negative in the year 2019-20, 204.36 %. The average return on capital employed ratio of the Amul dairy unit is 16.05 %. The capital employed ratio of the Amul dairy unit is examined by more than 20% in the years 2016-17 to 2019-20. In Punjab-selected dairy units, the average return on capital employed is in a negative trend in the dairy units of Bathinda, Gurdaspur and Sangrur at 0.72, -6.77 and -5.38 % respectively. The return on capital employed ratio of the Gurdaspur dairy unit is in a negative mode in the five years of the study period. The average return on capital employed ratio of the Patiala dairy unit is 7.85%, which is the maximum.

Hypothesis Testing

H₀: There is no significant difference between the Profitability ratio of selected dairy units in Gujarat and Punjab.

Table 3 Descriptive Statistics and Independent Sample T Test Profitability Ratio Analysis

Group Statistics

	State Name	N	Mean	Std. Deviation
Current Ratio	Gujarat	55	1.3553	1.58738
	Punjab	55	2.4275	8.82727
Liquid Ratio	Gujarat	55	1.1507	1.47447
	Punjab	55	.1084	1.46569
Super Quick or Cash Ratio	Gujarat	55	.4502	.51836
	Punjab	55	.2256	.49781

Independent Samples Mann- Whitney U Test				
		Levene's Test for Equality of Variances		t-test for Equality of Means
		F	Sig.	t
Net Profit Ratio	Equal variances assumed	40.416	0.000	3.231
	Equal variances not assumed			3.231
Return on Assets	Equal variances assumed	20.160	0.000	2.367

Ratio	Equal variances not assumed			2.367
Return on Capital	Equal variances assumed	0.883	0.350	1.245
Employed Ratio	Equal variances not assumed			1.245

Independent Samples Mann-Whitney U Test for Profitability Ratio

No	Variables	Sig. Value
1	Net Profit Ratio	0.030
2	Return on Assets Ratio	0.023
3	Return on Capital Employed Ratio	0.002

H0a: There is no significant difference between the net profit ratio of selected dairy units in Gujarat and Punjab.

The mean net profit ratio of Gujarat-selected dairy units show 0.5435, whereas Punjab-selected dairy units show -0.6199. It can be said from the data that there is a significant difference observed between the means of the net profit ratio of selected dairy units in Gujarat and Punjab at a 5% level of significance. Levene's Test generates a p-value is 0.000. This means that it is not safe to assume that there is a significant difference observed between the variances, and thereby, standard deviations, of the net profit ratio of Gujarat and Punjab at a 5% level of significance. On conducting an Independent samples t-test on the data, it is observed that the p-value is less than 0.05, suggesting that significant differences between the mean is observed at a 5% level of significance. As per the Mann-Whitney U test, the p-value of the net profit ratio is 0.030 so the null hypothesis is rejected and it can be said that there is a significant difference between the net profit ratio of selected dairy units in Gujarat and Punjab.

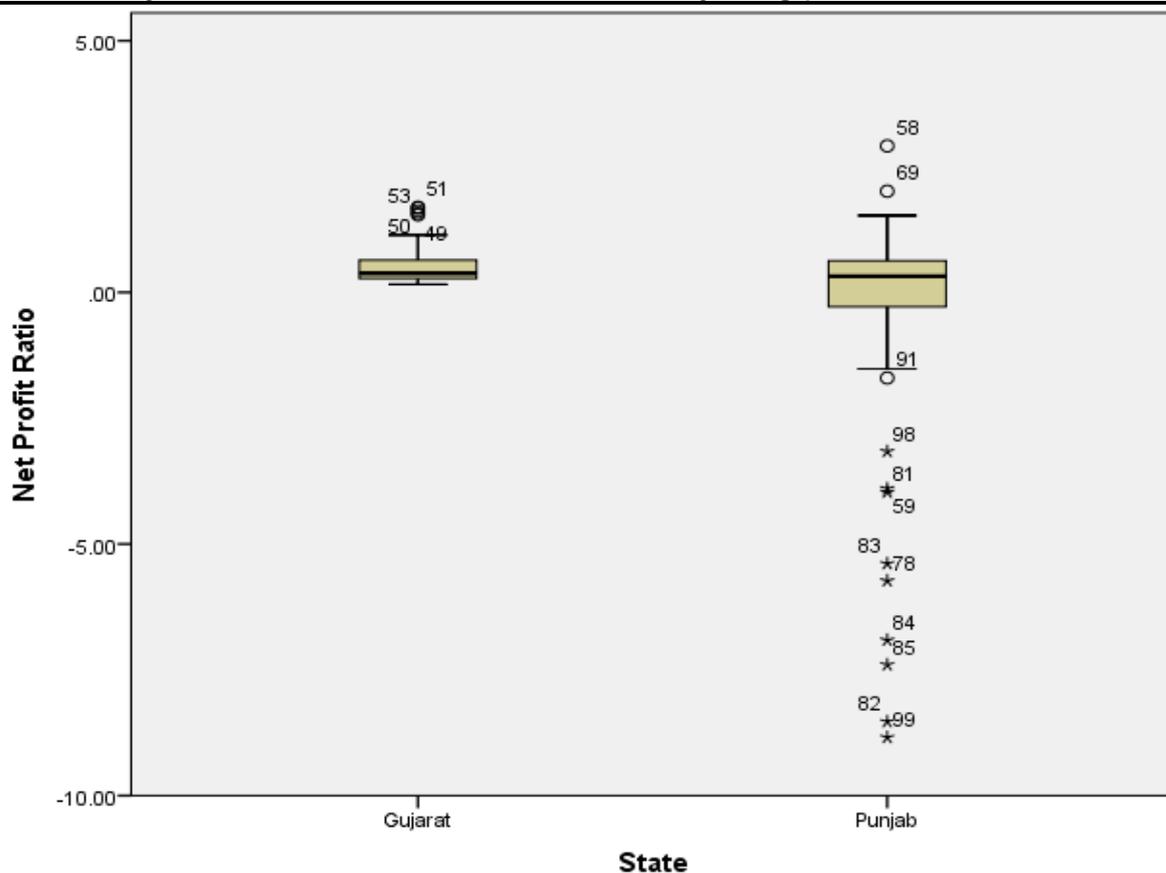


Figure 1 Net Profit Ratio of Selected Dairy Units in Gujarat and Punjab

H0b: There is no significant difference between the Return on Assets ratio of selected dairy units in Gujarat and Punjab.

The mean Return Assets Ratio of Gujarat-selected dairy units show 1.2464, whereas Punjab-selected dairy units show -0.0916. It can be said from the data that there is a significant difference observed between the means of the Return on Assets Ratio of selected dairy units in Gujarat and Punjab at a 5% level of significance. Levene's Test generates a p-value is 0.000. This means that it is not safe to assume that there is a significant difference observed between the variances, and thereby, standard deviations, of the Return on Assets ratio in Gujarat and Punjab at a 5% level of significance. On conducting an Independent samples t-test on the data, it is observed that the p-value is less than 0.05, suggesting that a significant difference between the mean is observed at a 5% level of significance. As per the Mann-Whitney U test, the p-value of the return on assets ratio is 0.023 so the null hypothesis is rejected and it can be said that there is a significant difference between the return on assets ratio of selected dairy units in Gujarat and Punjab.

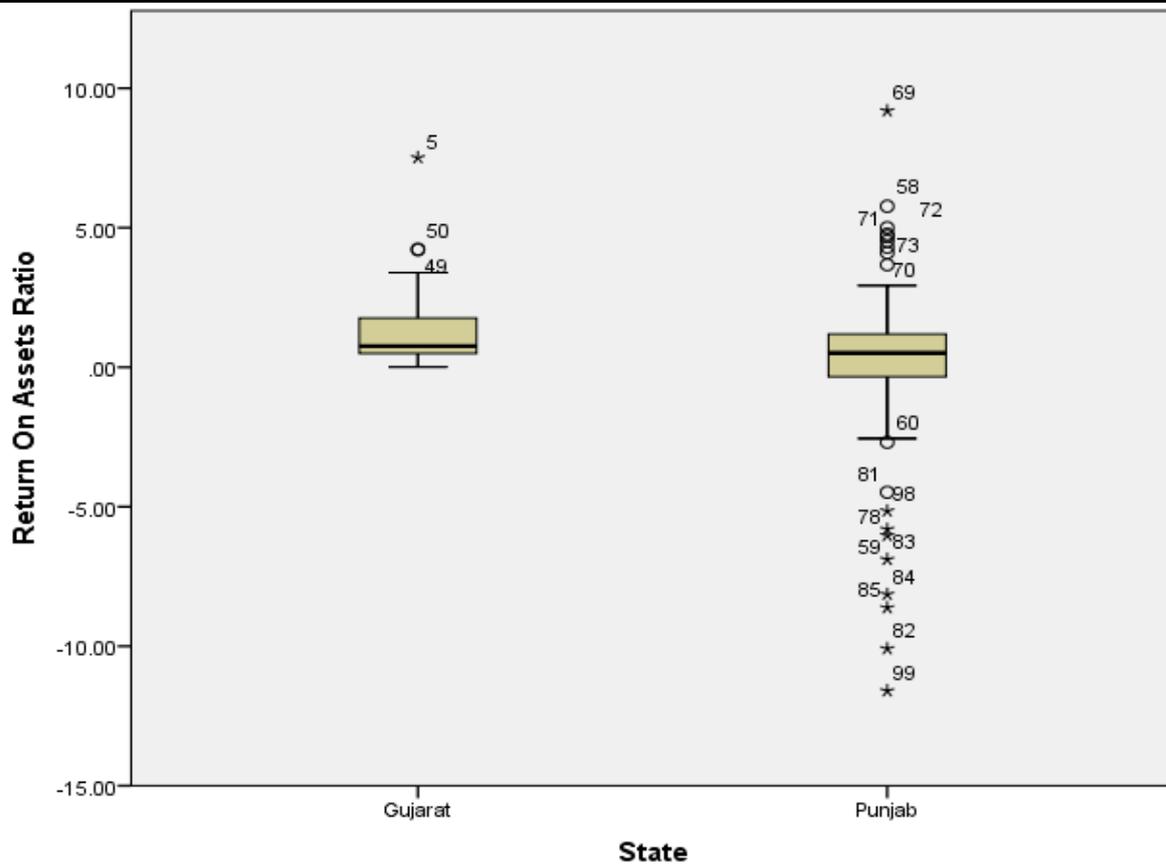


Figure 2 Return on Assets Ratio of Selected Dairy Units in Gujarat and Punjab

H0c: There is no significant difference between the return on Capital employed ratio of selected dairy units in Gujarat and Punjab.

The mean Return on Capital Employed Ratio of Gujarat-selected dairy units show 6.2765, whereas Punjab-selected dairy units show -0.5442. It can be said from the data that there is a significant difference observed between the means of the Return on Capital Employed Ratio in selected dairy units in Gujarat and Punjab at a 5% level of significance. Levene's Test generates a p-value is more than 0.05. This means that it is safe to assume that there is no significant difference observed between the variances, and thereby, standard deviations, of the return on capital Employed Ratio of selected dairy units in Gujarat and Punjab at a 5% level of significance. On conducting an Independent samples t-test on the data, it is observed that the p-value is more than 0.05, suggesting that no significant difference between the mean is observed at a 5% level of significance. As per the Mann-Whitney U test, the p-value of the return on capital employed ratio is 0.002 so the null hypothesis is rejected and it can be said that there is a significant difference between the return on capital employed ratio of selected dairy units in Gujarat and Punjab.

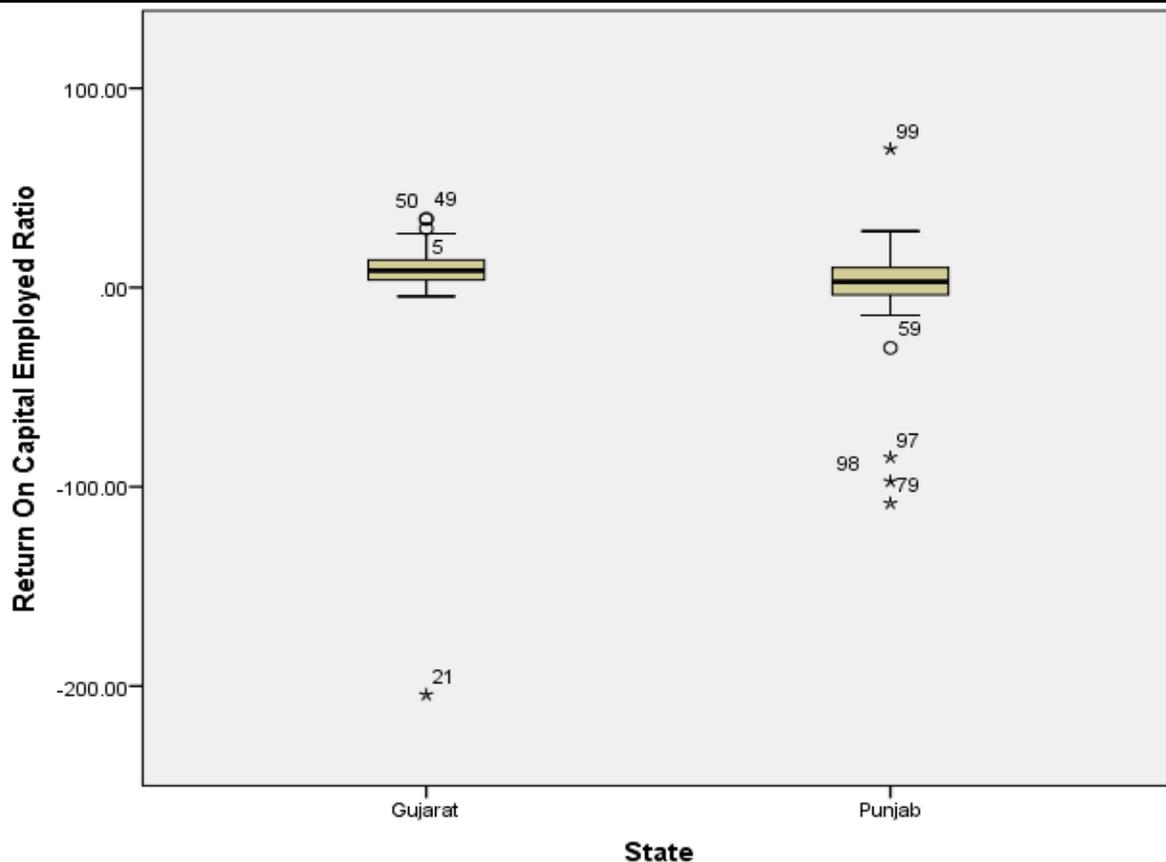


Figure 3 Return on Assets Ratio of Selected Dairy Units in Gujarat and Punjab

FINDINGS, SUGGESTIONS AND CONCLUSIONS

Findings

- The highest net profit ratio was gained by the Uttam and Ludhiana dairy units among the selected dairy units in Gujarat and Punjab. The lowest net profit margin ratio was gained by the Dudhdhara and Gurdaspur dairy units. The average net profit margin was negative in Punjab dairy units i.e. Bathinda, Gurdaspur and Sangrur.
- The highest return on assets was achieved by the Uttam and Patiala dairy units among the selected dairy units in Gujarat and Punjab during the study period 2010-11 to 2020-21. On the other hand, the lowest ratio was acquired by the Dudhdhara and Gurdaspur dairy units.
- It is examined that the return on capital employed ratio was found highest in Amul and Patiala dairy units among the selected dairy units in Gujarat and Punjab. The return on capital employed ratio was in a negative mode in the Banas, Bathinda, Gurdaspur and Sangrur among the dairy units in Gujarat and Punjab.
- It is found as per the independent Mann-Whitney U test the p-value of the profitability ratio is less than 0.05 at a 5% level of significance so it can be concluded that there is a significant difference between the profitability ratio of the selected dairy units in Gujarat and Punjab.

Suggestions

- The Dudhdhara and Gurdaspur dairy units net profit ratio is low. It was also examined that the net profit ratio had a negative trend in the Bathinda, Gurdaspur, and Sangrur dairy units. It is recommended for the dairy authorities can take proper steps in the area of manufacturing and increase the sales of milk and dairy products.
- As the Dudhdhara and Gurdaspur dairy units have a lower return on assets than other selected dairy units among selected dairy units in Gujarat and Punjab. It is recommended for the dairy unit's authorities can properly utilize the resources to earn maximum profit. Therefore, the positive impact creates on investors, creditors, lenders, employees, shareholders and the government.
- The return on capital employed ratio has a negative mode in the Banas, Bathinda, Gurdaspur, and Sangrur dairy units in Gujarat and Punjab. It is suggested to the dairy unit authorities can raise their efficiency in the area of functioning. The ROCE is always higher than the firm borrow its funds. It is suggested for the dairy unit management can maintain their ROCE properly.

LIMITATIONS OF THE STUDY

- The study is based on only five selected dairy units in Gujarat and Punjab.
- The study examines the financial performance through ratio analysis only.
- The study is based on secondary data obtained from selected five dairy units in Gujarat and Punjab.
- The study period is 11 years, i.e. from 2010-11 to 2020-21.

FURTHER SCOPE OF THE STUDY

- The study is based on five selected dairy units of Gujarat and Punjab state. Researchers can select this research as a base and do further study.
- The study inspected the comparative financial performance through ratio analysis of selected dairy units in Gujarat and Punjab. Hence, researchers can select other techniques for further research work.

Conclusion

Financial management is mainly concerned with financial decision-making. Finance is the vitamin of any business enterprise. Finance is necessary to meet day-to-day requirements for the business enterprise. Every business enterprise must require enough amount of finance for the smooth running of business activities. Finance is also required to achieve the business goal in a long run. Financial management is also required to expand the business and modernization the business so any business firm can't ignore the significance of financial management. The average lowest net profit margin and return on assets ratio were acquired by the Dudhdhara and Gurdaspur whereas the lowest return on capital employed ratio was gained by the Banas, Bathinda, Gurdaspur and Sangrur. It can be concluded that there is a significant difference between the profitability ratio of the selected dairy units in Gujarat and Punjab.

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Annexures

PROFITABILITY RATIO

Table 4 Net Profit Ratio of Selected Dairy Units in Gujarat and Punjab during Period 2010-11 to 2020-21

State	Dairy/Year	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	Averages(%)
Gujarat	Amul	0.44	0.43	0.25	0.25	0.28	0.32	0.38	0.40	0.38	0.49	0.37	0.36
	Banas	0.67	0.51	0.48	0.42	0.36	0.32	0.31	0.27	0.25	0.27	0.29	0.38
	Dudhdhara	0.20	0.22	0.20	0.22	0.18	0.20	0.43	0.25	0.28	0.16	0.18	0.23
	Gopal	0.53	0.56	0.68	0.97	1.01	1.00	0.56	0.77	0.77	0.53	1.14	0.78
	Uttam	0.36	0.33	0.33	0.65	1.54	1.68	1.69	0.63	1.57	0.31	1.62	0.97
Punjab	Bathinda	0.55	-1.35	2.91	-3.9	-1.52	0.95	0.37	-0.58	0.25	0.14	0.33	-0.17
	Patiala	-1.51	0.2	2.01	0.93	0.91	1.53	0.12	0.32	0.15	0.38	0.14	0.47
	Gurdaspur	-5.73	0.26	0.25	-3.97	-8.53	-5.39	-6.91	-7.4	0.44	0.13	0.12	-3.34
	Sangrur	1.07	1.05	-1.7	0.33	0.01	0.55	0.15	0.48	0.43	-3.16	-8.84	-0.88
	Ludhiana	1.25	1.46	1.26	1.14	1.13	0.07	0.66	0.4	0.49	0.47	0.59	0.81

Table 5 Return on Assets of Selected Dairy Units in Gujarat and Punjab during the Period from 2010-11 to 2020-21

State	Dairy/Year	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	Averages (%)
Gujarat	Amul	1.12	1.17	0.57	0.55	7.51	0.77	0.92	0.86	0.77	1.16	0.62	1.46
	Banas	1.05	0.73	0.65	0.68	0.62	0.51	0.53	0.47	0.43	0.53	0.43	0.6
	Dudhdhara	0.51	0.56	0.45	0.40	0.29	0.28	0.56	0.35	0.40	0.20	0.22	0.38
	Gopal	1.98	2.51	2.77	2.56	2.25	1.85	0.80	1.14	1.91	1.15	1.85	1.89
	Uttam	0.01	0.48	0.76	2.20	4.23	4.21	3.39	0.89	2.60	0.47	1.67	1.9
Punjab	Bathinda	0.9	-2.55	5.77	-5.81	-2.69	1.98	0.68	-0.69	0.25	0.15	0.45	-0.14
	Patiala	-1.64	0.38	9.19	4.1	4.69	5	3.67	0.55	0.17	0.55	0.2	2.44
	Gurdaspur	-6.03	0.28	0.27	-4.48	-10.09	-6.89	-8.14	-8.62	0.51	0.15	0.16	-3.9
	Sangrur	2.93	1.33	-2.04	0.54	0.01	0.89	0.21	0.56	0.5	-5.15	-11.6	-1.7
	Ludhiana	4.52	0.94	0.88	4.77	4.3	2.78	2.86	0.82	0.72	0.72	1.05	2.21

Table 6 Return on Capital Employed Ratio of Selected Dairy Units in Gujarat and Punjab during the Period from 2010-11 to 2020-21

State	Dairy/Year	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	Averages (%)
Gujarat	Amul Dairy	15.30	15.91	9.03	14.27	29.54	-4.47	20.94	20.45	25.21	21.70	8.68	16.05
	Banas	7.09	15.93	6.47	8.47	8.97	3.46	3.65	11.27	13.26	-204.36	3.87	-11.08
	Dudhdhara	1.44	5.65	1.01	0.94	0.84	3.38	3.67	3.92	4.11	3.93	4.29	3.02
	Gopal	14.80	8.44	11.93	11.56	10.31	8.15	4.36	11.88	5.59	3.53	8.51	9.01
	Uttam	3.12	6.75	27.10	22.19	34.50	34.30	6.37	3.11	8.61	3.04	9.24	14.39
Punjab	Bathinda	-5.83	23.11	-0.63	-30.31	6.46	-2.89	-10.37	0.98	4.69	1.54	5.35	-0.72
	Patiala	-1.98	13.81	25.32	10.77	13.47	6.01	1.41	15.34	3.86	5.67	-7.28	7.85
	Gurdaspur	16.96	-108.28	-13.95	8.97	-10.02	6.86	9.17	6.44	-11.95	-4.37	25.71	-6.77
	Sangrur	28.3	13.62	2.91	4.3	11.28	-8.53	-11.25	13.27	-85.25	-97.29	69.48	-5.38
	Ludhiana	0.09	0.58	2.54	14.09	0.12	1.97	3.6	1.71	5.7	0.5	-5.71	2.29