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Analysis of profitability
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ANALYSIS OF VARIANCE (ANOVA) TEST
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ANALYSIS OF VARIANCE TEST (ANOVA)
ON RETURN ON NET WORTH AMONG SUB-GROUPS OF
CO-OPERATIVE MILK DAIRIES.
6.1 MEASUREMENT OF PROFITABILITY:
Profitability depends on many factors such as

(1) Increment in selling price,

(2) Reduction in purchase price,

(3) Cost of production which includes fixed cost & variable costs,

(4) Inverse relation that exists between per unit fixed cost and total units produced & sold within the maximum plant capacity being known. (5) Administrative & Selling cum Distributing expenses.

Co-operative dairies cannot procure milk at a lower price to increase profit margin because the main aim of co-operative milk dairies is to protect the milk producers from the exploitation by private dairies which were in the role of middlemen between producer & consumers of milk. Milk producer had joined hands and formed co-operative societies which in turn had joined hands and formed co-operative milk dairies to protect themselves from exploitation by private dairies giving very less procurement price to the milk producers and charging higher prices from the consumers of milk.

Co-operative dairies also safeguard the interests of milk consumers besides milk producers so they can not increase selling price abruptly to increase profit margin. Today’s scenario of competition by private dairies will also not allow co-operative dairies to do so. Today co-operative dairies are functioning under monopolistic competition situation so they can succeed more by product differentiation (better quality, better packing etc.) rather than change in price.
Thus the scope for profitability for the co-operative milk dairies is limited. Co-operative milk dairies can increase profitability by cost reduction and cost control and by increase in volume of sales by offering better quality because increase in sales volume will encourage operating of storing & processing plants to work at their full or near full capacity, decreasing the proportion of unutilized or spare capacity and thereby bringing about reduction in per unit fixed cost.

Profitability of the selected co-operative milk dairies of Gujarat State is found out by employing the different Ratios under the method of Ratio Analysis which facilitates common size analysis. The benefit of common size analysis is that it is useful for inter firm comparison (in our case there are co-operative unions instead of firms) because differences in firm size are eliminated by the presentation of the data in the percentage or ratio form.

Here under profitability ratios of different selected dairies are given in Table 6.3, Table 6.4, Table 6.5, Table 6.6, Table 6.7, Table 6.8, and Table 6.9, see also Table 6.1 for figures of Total Sales and see Table 6.2 related Net Profits of eight years from 2000-01 to 2007-08.
### Table No: 6.1

**Sales of the selected dairies under the study**  
**For period of (2000-01 to 2007-08)**

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### Table No: 6.2

**Profit of the selected dairies under the study for period of (2000-01 to 2007-08)**

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# Table No: 6.3

Net Profit Ratio of the selected dairies under the study for the period of (2000-01 to 2007-08)

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<td>0.2701</td>
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6.2 NET PROFIT / SALES :

(SALES RELATED PROFITABILITY)

(1) Dudhsagar Dairy : (Mehsana)

Average yearly sales of this dairy is the highest among the co-operative dairies of Gujarat State. It ranks first (1st) in sales. It can be seen from table no-11. From 2000-01 to 2007-08 every year there is increase in sales. Only in 20004-05 the sales figure was slightly less than 2003-04. But from 2005-06 onwards the yearly sale has regained the increasing trend. Average yearly profit of this dairy is also highest among the selected dairies followed by Anand (Amul Dairy).

But as far as sale related profitability is concerned, mehsana dairy ranks fourth (4th) among the selected dairies. There has been descending (decreasing) trend of profitability in mehsana Dairy during the eight years from 2000-01 to 2007-08.

The first three years 2000-01 to 2002-03 the decline of profitability was quite steep. The study of other cost factors show that lesser profitability compared to higher sales is mostly due to higher milk procurement cost (see table no-13) and must be also owing to some what higher interest expenditure where there is some scope for cost control or cost reduction which will be studied in detail later on.

(2) Amul Dairy : (Anand)

Amul co-operative dairy’s average yearly sales ranks second after mehsana dairy among the selected co-operative dairies considering from 2000-01 to 2007-08.
In yearly average of profit also it is at second rank. In sales from 2000-01 to 2002-03 there was slightly decline in total sales. But from year 2003-04 the sales gained momentum and went on increasing year by year quite steeply. (see table no-12) During eight years the profit trend is of ever increasing performance.

In sales related profitability Amul Dairy ranks third (3rd) on the average of the selected dairies. (see table no-1) This is a satisfactory figure. The trend of profitability from 2000-01 to 2006-07 is found to be increasing every year but in the year 2007-08 there is some decline compared with its previous years. (see table no-6.3)

In Amul Dairy milk procurement, storing, processing expenses are quite under control also salary and wage cost are under control among all dairies under study. Salary and wage costs of Anand dairy are the lowest. (see table no-6.6) Therefore the slightly setback in profitability must be owing to higher interest expenditure so there is scope of cost control and cost reduction in interest expenditure which we shall discuss in detail later.

(3) **Sumul Dairy : (Surat)**

As per the average figures of eight years from 2000-01 to 2007-08 Sumul Dairy ranks third (3rd) in total sales after Mehsana Dairy and Anand Dairy respectively from the dairies selected for study.

In Surat Dairy every year there was considerable increase in sales. Thus Surat Dairy has ever increasing trend of sales from 2000-01 to 2007-
08. Even in the average yearly profit Surat Dairy ranks third (3rd) with ever increasing trend during the eight years. (see table no-6.1).

But as far as sales related profitability is concerned Surat Dairy lags much behind. Surata Dairy ranks sixth (6th) in comparison with other dairies in profitability. Of course Surat Dairy experienced increasing trend of profitability every year. The major increase started from 2002-03 and continued till 2006-07. In 2007-08 the pace of increase was slightly diluted.(please refer table 6.1 for total sales and table 6.3 for profitability. The low profitability of Sumul Dairy is mainly due to high milk procurement expenses. In Sumul Dairy salary and wage costs are well under control.(see table no-6.6) So the scope for cost control lies in milk procurement cost and marketing expenses. This matter we shall discuss in detail later on.

(4) **Sugam Dairy : (Baroda)**

As per the average figures of eight years from 2000-01 to 2007-08 of selected co-operative dairies of Gujarat, Baroda Dairy ranks fifth (5th) in total sales. (see table no-6.3) In Baroda Dairy every year the sales go on increasing during the eight years of study. (see table no-6.1)

In average profit of eight years from 2000-01 to 2007-08, Baroda Dairy ranks fourth (4th) in profit also, during the eight years Baroda Dairy experience an increasing trend of profit. (see table no-6.2)

But as far as sales related profitability is concerned, Baroda Dairy ranks fifth (5th) among the selected dairies. Thus Baroda Dairy is fifth (5th) not only is average sales but is 5th also in profitability.
Although the trend of profitability during the eight years is of increasing nature yet this increase is not very impressive (see table no-6.3) because every year the increase is much less.

Comparatively less profitability of Baroda Dairy cannot be accounted to lower total sales because the average total yearly sales figure of Ahmedabad and Rajkot co-operative dairies are the lowest. In sales Ahmedabad ranks 6th & Rajkot ranks 7th on the average. Even then Ahmedabad ranks 1st (first) and Rajkot ranks second (2nd) in profitability among the selected dairies.(see table no-6.1 and table no-6.3).

In milk procuring, storing and processing expenses, Baroda Dairy ranks sixth (6th) which means that such expenses are very less. (see table no-6.5) But the salary and wage cost of Baroda Dairy are comparatively the highest. (see table no-6.6) among the selected dairies Baroda Dairy ranks first (1st) in salary and wage expenses.

Thus the lower sales related profitability of Baroda Dairy is due to comparatively higher costs of salary and wages. The marketing expense is also higher. Further profitability related study will be done in details later on.

(5) Gopal Dairy : (Rajkot)

As per the average figures of eight years from 2000-01 to 2007-08 average yearly sales of Rajkot dairy are the lowest among all the dairies under study. It ranks 7th (seventh) (last) in sales. From 2000-01 to 2007-08 there has been a trend of increase in sales. Vast increase in sales starts from 2005-06 and continues its progress. (see table no-6.1)
As far as profit figures are concerned average profit of seven years ranks 6th (sixth) among dairies under study. The profit figures of the year 2001-02 and 2007-08 are larger compared to other years. In profits there is some what a fluctuating trend. (see table no-6.2)

In profitability there is a vast contrast. Although Rajkot stands last in sales performance, in profitability it stands much ahead of many dairies. Rajkot Dairy stands second (2nd) in profitability which points out the able management of affairs.

Inspite of some what higher milk procurement, cooling, storing and processing expenses and inspite of some what higher salary and wage expenses(see table no-6.5) Rajkot Dairy has maintained higher profitability which means that the management is done very nicely controlling marketing and interest and other expenses properly what ever be the past history. Administrative expenses of Rajkot Dairy are somewhat high and so there is still scope to further reduce them. (see table no-6.7)

With a vast population of Rajkot city and Rajkot District, Rajkot Dairy can still improve its performance by proper marketing strategy. Let more discussion be done later on.

(6) Uttam Dairy : (Ahemadabad)

Sales figure of Ahmedabad Co-operative Dairy are much lower like Rajkot Dairy when compared with other dairies under study. In average yearly sales of eight years from 2000-01 to 2007-08, Ahmedabad Dairy ranks sixth (6th) among other dairies which is slightly better then
Rajkot Dairy but less than the sales performance of the remaining five dairies. Sales figures of Ahmedabad Dairy show an increasing trend every year. (see table no-6.1)

Profit figures like Rajkot Dairy show a fluctuating trend with highest performance in the year 2002-03. But as far as profitability is concerned Ahmedabad Dairy ranks first (1st) among all the dairies under study. Milk procurement, cooling, storing and processing expenses of Ahmedabad Dairy are quite low. It ranks fifth (5th) in these expenses indicating able control over such expenses. (see table no-6.5) Salary and wage expenses are comparatively higher (see table no-6.6) and need to be controlled to some extent.

Thus due to successful management Ahmedabad has come first in profitability by controlling marketing expenses besides milk procurement, cooling, storing and processing expenses.

Ahmedabad Dairy has achieved highest profitability and can further improve its performance by increasing the yearly sales by proper marketing strategy. Ahmedabad’s administrative expenses are much higher so also are interest payment expenses which need to be reduced to further improve the profitability. Let further discussing in this matter be done later on.

(7) Vasudhara Dairy: (Valsad)

Comparative sale figures of Vasudhara Dairy are quite impressive with increasing trend every year and standing fourth (4th) among selected dairies in average yearly sales of eight years from 2000-01 to 2007-08. But the respective profit figures are highly fluctuating with heavy losses
in two years 2001-02 and 2003-04. Besides these two years of loss, the profit was minimum in the year 2007-08 and maximum in the year 2006-07. Comparatively Valsad Dairy stands seventh (7th) in average yearly profit.

As far as profitability is concerned, Valsad Dairy stands last (7th) and its profitability is less than zero. It is in negative. This is the average result of eight years.

Inspite of impressive figures of yearly sales, the profitability does not exist in some years and on the over all average profitability shows the figure less than zero. Milk procurement, cooling, storing and processing costs are not so high.(see table no-6.5) Even expenses after salary and wages are not so high.(see table no-6.6) The major set back must be due to mis-management resulting in higher administrative and marketing costs and also higher interest expenditure. We shall discuss this matter later on in details.

6.2 (A) ANOVA TEST ON NET PROFIT

➢ Null Hypothesis:
   There is no any significant difference in net profit ratio of selected co-operative dairies.

➢ Alternative Hypothesis:
   There is significant difference in net profit ratio of selected co-operative dairies.

➢ Level of significance:
   5% level
**Table 6 - (A)**

**ANALYSIS OF VARIANCE (ANOVA) TEST ON NET PROFIT AMONG SUB-GROUPS OF CO-OPERATIVE MILK DAIRIES.**

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<th>P-value</th>
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</table>

\[ \Rightarrow \text{NET PROFIT: (SALES RELATED PROFITABILITY)} \]

Calculated F Value = 0.4884  
Table F Value = 2.2164  
Result = Insignificant

The analysis showed the insignificant result. It can be seen from the table, that the calculated value of F was found as 0.4884, while the Table value of F was 2.2164, at 5% level of significance. The calculated value of F, being less than the Table value of F, the null hypothesis stood accepted and the alternative hypothesis got rejected at 5% level of significance. So it proves that the differences among the averages of this group were not much significant. And the average sales related profitability of the sub-groups of the co-operative dairies do not differ much.
Sales of the selected dairies under the study for period of (2000-01 to 2007-08)

- Rajkot
- Valsad
- Mahesana
- Surat
- Baroda
- Ahmadabad
- Anand
Chart No: 6.2

Sales of the selected dairies under the study for period of (2000-01 to 2007-08)

- Rajkot
- Valsad
- Mahesana
- Surat
- Baroda
- Ahmedabad
- Anand
Chart No: 6.3

Net Profit of the selected dairies under the study for period of (2000-01 to 2007-08)

- Rajkot
- Valsad
- Mahesana
- Surat
- Baroda
- Ahemadabad
- Anand

Profit (in millions) vs Years (2000-01 to 2007-08)
Chart No: 6.4
Net Profit of the selected dairies under the study for period of (2000-01 to 2007-08)

Years
Profit $\times 100000000$
-0.4 -0.3 -0.2 -0.1 0 0.1 0.2 0.3 0.4 0.5 0.6


- Rajkot
- Valsad
- Mahesana
- Surat
- Baroda
- Ahemadabad
- Anand
Net Profit Ratio of the selected dairies under the study for the period of (2000-01 to 2007-08)
Net Profit Ratio of the selected dairies under the study for the period of (2000-01 to 2007-08)
### Table No : 6.4

Return on Equity Shareholders’ Fund Ratio of the selected dairies under the study for the period of (2000-01 to 2007-08)

<table>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Rajkot</td>
<td>0.99</td>
<td>24</td>
<td>7.3</td>
<td>10.3</td>
<td>10.7</td>
<td>6.7</td>
<td>10.9</td>
<td>15.2</td>
<td>10.761</td>
<td>1</td>
</tr>
<tr>
<td>Valsad</td>
<td>3.9</td>
<td>-22.88</td>
<td>2.51</td>
<td>-27.08</td>
<td>2.38</td>
<td>2.85</td>
<td>20.97</td>
<td>0.49</td>
<td>-2.1075</td>
<td>7</td>
</tr>
<tr>
<td>Mahesana</td>
<td>19.16</td>
<td>7.91</td>
<td>6.68</td>
<td>7.56</td>
<td>7.22</td>
<td>8.68</td>
<td>8.32</td>
<td>7.61</td>
<td>9.1425</td>
<td>2</td>
</tr>
<tr>
<td>Surat</td>
<td>1.96</td>
<td>2.06</td>
<td>2.13</td>
<td>2.46</td>
<td>4.39</td>
<td>7.06</td>
<td>9.07</td>
<td>10.75</td>
<td>4.985</td>
<td>4</td>
</tr>
<tr>
<td>Baroda</td>
<td>3.59</td>
<td>4.28</td>
<td>4.38</td>
<td>4.58</td>
<td>4.7</td>
<td>4.74</td>
<td>4.56</td>
<td>5.49</td>
<td>4.54</td>
<td>5</td>
</tr>
<tr>
<td>Ahmedabad</td>
<td>5.71</td>
<td>6.08</td>
<td>7.02</td>
<td>5.27</td>
<td>4.12</td>
<td>3.95</td>
<td>-------</td>
<td>-------</td>
<td>5.3583</td>
<td>3</td>
</tr>
<tr>
<td>Anand</td>
<td>1.62</td>
<td>1.82</td>
<td>2.37</td>
<td>2.99</td>
<td>5.54</td>
<td>5.79</td>
<td>7</td>
<td>7.35</td>
<td>4.31</td>
<td>6</td>
</tr>
<tr>
<td>Average</td>
<td>5.2757</td>
<td>3.3243</td>
<td>4.6271</td>
<td>0.8686</td>
<td>5.5786</td>
<td>5.6814</td>
<td>10.137</td>
<td>7.815</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Average</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5.4134</td>
<td>5.2842</td>
<td></td>
</tr>
</tbody>
</table>
6.3 RETURN ON NET WORTH OR RETURN ON EQUITY SHAREHOLDERS’ FUND:

Return on Equity Shareholders’ Fund

= Net Profit / Equity Share Capital + Reserves & Other Fund

(1) Dudhasagar Dairy: (Mehsana)

As per the average figure of eight years 2000-01 to 2007-08 the return on Net Worth of Mehsana Dairy’s yearly average is 9.14 which ranks second indicating sound profitability.

The figures of net worth related profitability are much fluctuating and there is no clear-cut increasing trend. The highest profitability is on 2000-01 and the lowest profitability is on 2002-03. As the average return on net worth of this dairy ranks second (2nd). Its profitability is comparatively much high. Milk procurement, cooling, storing and processing expenses are on the average very high because mehsana dairy ranks first in milk procurement expenses ratio. (see table no-6.5) The salary and wages expenses are quite under control. (see table no-6.6)

Thus Return on Net Worth can be much increased by controlling and reducing milk procurement, cooling, storing and processing expenses besides, marketing expenses.

(2) Amul Dairy: (Anand)

As per the average figures of eight years from 2000-01 to 2007-08 the return on net worth of Amul dairy’s yearly average is 4.31. It ranks sixth in return on net worth ratio and it is not a progressive figure. (see table: 6.4)
The profitability is also fluctuating. The poor return on net worth is neither due to high milk procurement, storing, cooling and processing costs nor due to salary and wages cost because both of them are under control and their average comparative figures rank seventh in both the cases. (see table no-6.5)

Thus lower return on net worth is due to much higher interest cost. There is a scope for controlling and reducing expenditure on interest. (see table no-6.6)

(3) Sumul Dairy: (Surat)

As per the average figures of eight years from 2000-01 to 2007-08 the return on net worth of sumul dairy’s yearly average is 4.99. It ranks fourth in return on net worth ratio comparatively (see table: 6.4) compared to other dairies and it is not a very progressive figure. There is scope for improvement.

Of course return on net worth every year goes on increasing which signifies progressive efforts. Sumul dairy’s salary expenses are quite under control, but milk procurement, cooling, storing and processing expenses of surat dairy are very high. The average of eight years of these expenses ranks second after mehsana dairy. (see table no-6.5) So there is scope for reducing these expenses. Marketing expenses can also be controlled.
(4) **Sugam Dairy : ( Baroda )**

Average return on net worth of eight years from 2000-01 to 2007-08 of Baroda Dairy is very low. ( see table : 6.4 ) This dairy ranks fifth comparatively in average return on net worth. Baroda Dairy’s milk procurement, cooling, storing and processing expenses are comparatively less. But salaries and wages expenses of Baroda Dairy are very high. On an average it ranks first in salary & wage expenses among the selected dairies under study. Thus we can say that low return on net worth of Baroda Dairy is due to higher salaries and wages expenses and also higher marketing expenses. Of course Baroda Dairy’s return on net worth goes on increasing every year except on 2006-07 showing all most improving trend.

(5) **Gopal Dairy : ( Rajkot )**

In Rajkot Dairy not only sales related profitability is high but also return on net worth is high. In sales related profitability Rajkot ranks second among all selected dairies. But it ranks first in return on net worth among all the dairies under study.

In Rajkot Dairy highest return on net worth is in the year 2001-02 and the lowest was in the year 2005-06. ( see table : 6.4 ) Thus increasing trend is not maintained. But overall performance is very nice.

In Rajkot Dairy average milk procurement, cooling, storing and processing expenses rank third and even the salaries and wages expenses ranks third thus there is scope for reducing these two types of expenses besides administrative expenses to some extent.
(6) **Uttam Dairy : ( Ahmedabad )**

Ahmedabad Dairy which ranked first (1st) in sales related profitability, it ranks third (3rd) in return on net worth as per average result of eight years from 2000-01 to 2007-08 among dairies under study.

Every year return on investment does not show continuous progress from 2003-04 return on net worth goes on decreasing. This some what hindrance in progress is due to higher salary and wage expenses. In salary expenses it ranks second on an average. (see table no-6.6) Thus for improving return on net worth salaries and wages expenses have to be controlled. Besides also controlling administrative and interest expenses.

(7) **Vasudhara Dairy : ( Valsad )**

Valsad Dairy ranks seventh (7th) not only in sales related profitability but also in return on net worth as per the average figures from 2000-01 to 2007-08. So we can say that the performance of Valsad Dairy is the worst among all the selected dairies under study in spite of considerable large sales figures. ( see table : 6.1 )

This very low performance is mainly due to mis-management. Milk procurement, cooling, storing and processing expenses and also salary and wage expenses are not very high, so we can say that lower performance is mainly due to higher marketing and administrative expenses and also interest expenditure needs to be properly managed.

Average return on net worth show a negative figure. In the year 2001-02 and 2003-04 valsad dairy has made heavy losses. The reasons of such heavy losses must be found out.
6.3 (A) ANOVA TEST ON RETURN ON NET WORTH:

- **Null Hypothesis:**
  
  There is no any significant difference in return on net worth ratio of selected co-operative dairies.

- **Alternative Hypothesis:**
  
  There is significant difference in Return on net worth ratio of selected co-operative dairies.

- **Level of significance:**
  
  5% level

---

**Table 6 - (B)**

ANALYSIS OF VARIANCE TEST (ANOVA)
ON RETURN ON NET WORTH AMONG SUB-GROUPS OF CO-OPERATIVE MILK DAIRIES.

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>P-value</th>
<th>F crit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>347.81</td>
<td>7</td>
<td>49.688</td>
<td>0.8375</td>
<td>0.5621</td>
<td>2.2164</td>
</tr>
<tr>
<td>Within Groups</td>
<td>2729.1</td>
<td>46</td>
<td>59.327</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>3076.9</td>
<td>53</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
RETURN ON NET WORTH :
(NET WORTH RELATED PROFITABILITY)

Calculated F Value = 0.8375
Table F Value = 2.2164
Result = Insignificant

The analysis showed the insignificant result. It can be seen from the table, that the calculated value of F was found as 0.8375, while the Table value of F was 2.2164, at 5% level of significance. The calculated value of F, being less than the Table value of F, the null hypothesis stood accepted and the alternative hypothesis got rejected at 5% level of significance. So it proves that the differences among the averages of this group were not much significant. And the average profitability of the sub-groups of the co-operative dairies do not differ much.
Return on Equity Shareholders’ Fund Ratio of the selected dairies under the study for the period of (2000-01 to 2007-08)
Return on Equity Shareholders’ Fund Ratio of the selected dairies under the study for the period of (2000-01 to 2007-08)
## Table No: 6.5

**Milk Procurement Expenses to Total Expenses Ratio of the selected dairies under the study for the period of (2000-01 to 2007-08)**

<table>
<thead>
<tr>
<th></th>
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<th></th>
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<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Rajkot</td>
<td>0.88</td>
<td>0.89</td>
<td>0.91</td>
<td>0.91</td>
<td>0.92</td>
<td>0.93</td>
<td>0.92</td>
<td>0.93</td>
<td>0.9113</td>
<td>2</td>
</tr>
<tr>
<td>Valsad</td>
<td>0.88</td>
<td>0.83</td>
<td>0.84</td>
<td>0.85</td>
<td>0.84</td>
<td>0.87</td>
<td>0.89</td>
<td>0.89</td>
<td>0.8613</td>
<td>5</td>
</tr>
<tr>
<td>Mahesana</td>
<td>0.94</td>
<td>0.94</td>
<td>0.94</td>
<td>0.95</td>
<td>0.94</td>
<td>0.95</td>
<td>0.94</td>
<td>0.95</td>
<td>0.9438</td>
<td>1</td>
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<tr>
<td>Surat</td>
<td>0.91</td>
<td>0.91</td>
<td>0.92</td>
<td>0.91</td>
<td>0.92</td>
<td>0.91</td>
<td>0.9</td>
<td>0.9</td>
<td>0.91</td>
<td>4</td>
</tr>
<tr>
<td>Baroda</td>
<td>0.84</td>
<td>0.85</td>
<td>0.86</td>
<td>0.86</td>
<td>0.85</td>
<td>0.86</td>
<td>0.85</td>
<td>0.87</td>
<td>0.855</td>
<td>7</td>
</tr>
<tr>
<td>Ahmedabad</td>
<td>0.87</td>
<td>0.85</td>
<td>0.86</td>
<td>0.85</td>
<td>0.86</td>
<td>0.87</td>
<td>--------</td>
<td>--------</td>
<td>0.86</td>
<td>6</td>
</tr>
<tr>
<td>Anand</td>
<td>0.9</td>
<td>0.89</td>
<td>0.9</td>
<td>0.91</td>
<td>0.91</td>
<td>0.92</td>
<td>0.92</td>
<td>0.94</td>
<td>0.9113</td>
<td>3</td>
</tr>
<tr>
<td>Average</td>
<td>0.8886</td>
<td>0.88</td>
<td>0.89</td>
<td>0.8914</td>
<td>0.8914</td>
<td>0.9014</td>
<td>0.9033</td>
<td>0.9133</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Average</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.8949</td>
<td>0.8932</td>
</tr>
</tbody>
</table>
6.4 MILK PROCUREMENT EXPENSES TO TOTAL EXPENSES:

(1) **Dudhsagar Dairy: (Mehsana)**

Mehsana Dairy ranks first in total sales and also ranks first (1st) in milk procurement, storing and processing expenses. This can be seen from the average result of eight (8) year from 2000-01 to 2007-08. The average figure is 94.375. Out of the eight years most of the time the milk procurement, storing and processing expenses were 94% of the total inputs. Only for three (3) years this expenses were 95%.

(2) **Amul Dairy: (Anand)**

Observing the average figures of eight years from 2000-01 to 2007-08 Anand Dairy’s total sales are second highest among the dairies under study. It is also second highest in average of eight years of milk procurement, storing and processing expenses. The average expenses are 91.13%.

(3) **Sumul Dairy: (Surat)**

Milk procurement, storing and processing expenses of sumul dairy are high ranking third (3rd) in the average. The average figure is 91%. In the year 2002-03 and also 2004-05 these expenses were slightly higher than the average. In the last two years 2006-07 and 2007-08, the expenses were slightly less than the average.
(4) **Gopal dairy : (Rajakot)**

In gopal dairy rajokt milk procurement, storing and processing expenses have an increasing trend every year except year 2006-07. On the average these expenses ranks second just like anand dairy. The average figure is 91.13%.

(5) **Vasudhara dairy : (Valsad)**

Milk procurement, storing and processing expenses of valsad dairy on the average rank fourth (4th). The average figure is 86.13%, from 2001-02, to 2004-05 such expenses were some what below the average.

(6) **Uttam Dairy : (Ahemadabad)**

In milk procurement, storing and processing expenses Ahemadabad dairy ranks fifth (5th) on the average. Such expenses every year are slightly fluctuating. The average figure is 86%. In the year 2001-02 and 2003-04 the expenses are slightly below the average.

(7) **Sugam dairy : (Baroda)**

In Baroda dairy (sugam dairy) milk procuremet, storing and processing expenses are on the average 85.5% ranking sixth (6th) among dairies under study. In the year 2000-01, 2001-02, 2004-05 and also 2006-07 such expenses are slightly below the average. In the rest of the years the expenses are above the average.
Chart No: 6.9

Milk Procurement Expenses to Total Expenses Ratio of the selected dairies under the study for the period of (2000-01 to 2007-08)
Chart No: 6.10

Milk Procurement Expenses to Total Expenses Ratio of the selected dairies under the study for the period of (2000-01 to 2007-08)
### Table No. 6.6

Salary to Total Expenses Ratio of the selected dairies under the study for the period of (2000-01 to 2007-08)

<table>
<thead>
<tr>
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<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Rajkot</td>
<td>0.06</td>
<td>0.05</td>
<td>0.04</td>
<td>0.03</td>
<td>0.03</td>
<td>0.03</td>
<td>0.04</td>
<td>0.04</td>
<td>0.0438</td>
</tr>
<tr>
<td>Valsad</td>
<td>0.03</td>
<td>0.03</td>
<td>0.03</td>
<td>0.03</td>
<td>0.02</td>
<td>0.02</td>
<td>0.02</td>
<td>0.02</td>
<td>0.026</td>
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<tr>
<td>Mahesana</td>
<td>0.021</td>
<td>0.022</td>
<td>0.024</td>
<td>0.023</td>
<td>0.022</td>
<td>0.021</td>
<td>0.021</td>
<td>0.021</td>
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</tr>
<tr>
<td>Surat</td>
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<td>0.02</td>
<td>0.02</td>
<td>0.02</td>
<td>0.02</td>
<td>0.02</td>
<td>0.02</td>
<td>0.02</td>
<td>0.0213</td>
</tr>
<tr>
<td>Baroda</td>
<td>0.066</td>
<td>0.064</td>
<td>0.064</td>
<td>0.07</td>
<td>0.071</td>
<td>0.068</td>
<td>0.068</td>
<td>0.068</td>
<td>0.063</td>
</tr>
<tr>
<td>Ahmedabad</td>
<td>0.059</td>
<td>0.066</td>
<td>0.066</td>
<td>0.063</td>
<td>0.063</td>
<td>0.069</td>
<td>0.069</td>
<td>0.069</td>
<td>0.0644</td>
</tr>
<tr>
<td>Anand</td>
<td>0.02</td>
<td>0.025</td>
<td>0.025</td>
<td>0.021</td>
<td>0.021</td>
<td>0.018</td>
<td>0.018</td>
<td>0.018</td>
<td>0.0196</td>
</tr>
<tr>
<td>Average</td>
<td>0.0394</td>
<td>0.1233</td>
<td>0.063</td>
<td>0.0354</td>
<td>0.0409</td>
<td>0.0409</td>
<td>0.0409</td>
<td>0.0409</td>
<td>0.0419</td>
</tr>
<tr>
<td>Total Average</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.0479</td>
</tr>
</tbody>
</table>
6.5  SALARIES & WAGES TO TOTAL EXPENSES :

- **Introduction:**

  In the annual reports, the salaries and wages are given together. But about 70% to 75% of these wages are related to purchasing, storing and processing of milk that is the general opinion of the experts.

  It is necessary that fair amount of salaries and wages should be given to the employees, but over spending should be avoided to cut Short this type of expenses.

  **(1) Sugam Dairy : (Baroda)**

  In the average Baroda dairy incurs highest amount of salaries and wages expenses compared to other dairies under study. It ranks First (1st) in salaries and wages expenses on the average of eight years among the dairies under study. Such high expenses after Salaries and Wages should be reduced as far as possible.

  **(2) Uttam Dairy : (Ahmedabad)**

  Salaries and wages expenses of Ahmedabad Dairy are also very high ranking second (2nd), on the average compared with other selected dairies.

  The highest salary and wage expenses of Ahmedabad Dairy were in 2002-03. To increase profitability salary and wage expenses should be reduced as far as possible without harming the deserving employees.
(3) **Gopal Dairy : (Rajkot)**

Salaries and wages expenses of Rajkot dairy are also high. Ranking third (3rd) on the average as compared with other selected dairies. But Rajkot Dairy is trying to reduce these expenses, because every year such expenses are decreasing. Thus, there is a decreasing trend in salary and wage expenses.

(4) **Vasudhara Dairy : (Valsad Dist.)**

Salaries and wages expenses of Valsad Dairy are neither so high nor so low. Valsad Dairy on the average ranks fourth (4th) among other selected dairies. As far as salaries and wages expenses are concerned. there is some scope for reduction of such expenses without harming deserving employees.

(5) **Dudhsagar Dairy : (Mehsana Dist.)**

Salary and wage expenses of Mehsana Dairy are well under control. On the average its ranks fifth (5th) compared to other selected dairies.

From 2002-03 on wards there is a decreasing trend of such expenses. We hope further efforts are made to reduce such expenses without harming deserving employees.

(6) **Sumul Dairy : (Surat)**

Surat Dairy has successfully controlled its salary and wage expenses. Except for the year 2003-04 every year the ratio of salary and wage expenses remains same. That is 0.02.
In the year 2003-04 the ratio is 0.03. On the average Surat dairy ranks sixth (6th) in salary and wage expenses compared to other selected dairies.

(7) **Amul Dairy : (Anand)**

Compared to other selected dairies the salary and wage expenses of Amul Dairy (Anand) are the lowest and on the average ranking seventh (7th). After 2001-02 there is a decreasing trend in salary and wage expenses. Amul Dairy (Anand) is the only dairy among all the dairies under study which has successfully controlled salary and wage expenses in spite of high total sales.
Salary to Total Expenses Ratio of the selected dairies under the study for the period of (2000-01 to 2007-08)
Salary to Total Expenses Ratio of the selected dairies under the study for the period of (2000-01 to 2007-08)
### Table No : 6.7

Administrative & General Expenses to Total Expenses Ratio of the selected dairies under the study for the period of (2000-01 to 2007-08)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Rajkot</td>
<td>0.0032</td>
<td>0.0034</td>
<td>0.0029</td>
<td>0.0032</td>
<td>0.0036</td>
<td>0.0039</td>
<td>0.0039</td>
<td>0.0034</td>
<td>0.0034</td>
<td>3</td>
</tr>
<tr>
<td>Valsad</td>
<td>0.0055</td>
<td>0.0041</td>
<td>0.0055</td>
<td>0.0044</td>
<td>0.0037</td>
<td>0.0027</td>
<td>0.0031</td>
<td>0.0029</td>
<td>0.004</td>
<td>2</td>
</tr>
<tr>
<td>Mahesana</td>
<td>0.0009</td>
<td>0.0009</td>
<td>0.0009</td>
<td>0.0009</td>
<td>0.0011</td>
<td>0.0012</td>
<td>0.0013</td>
<td>0.0019</td>
<td>0.0011</td>
<td>5</td>
</tr>
<tr>
<td>Surat</td>
<td>0.0018</td>
<td>0.0019</td>
<td>0.0003</td>
<td>0.0003</td>
<td>0.0005</td>
<td>0.0005</td>
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6.6 ADMINISTRATION OR GENERAL EXPENSES TO TOTAL EXPENSES:

➢ Introduction:

Administrative or General Expenses can be controlled and reduced to some extent to increase profitability. We shall study the position of administration or general expenses of every dairy under study, so that how much scope is there of such cost reduction, that can be found out.

(1) Dudhasagar Dairy: (Mehsana)

Dudhsagar Dairy of Mehsana has managed administrative expenses properly. On the average it ranks fifth (5th) among other selected dairies. In spite of large volume of business mehsana dairy has succeeded in keeping administrative expenses under control. From 2000-01 to 2003-04 there was a decreasing trend of administrative expenses of mehsana dairy. But from 2004-05 onwards there is increasing trend of administrative expenses.

(2) Amul Dairy: (Anand)

Amual Dairy of Anand ranks sixth (6th) on the average in administrative expenses compared to other selected dairies. Inspite of high volume of business Amual Dairy has succeeded considerably in curbing administrative expenses. In Amul Dairy administrative expenses of last four years are higher compared to those of first four years.

(3) Gopal Dairy: (Rajkot)

There is much scope in Gopal Dairy of Rajkot for reducing administrative expenses. Compared to other selected dairies Gopal Dairy ranks third (3th) in administrative expenses. Although volume of
business of Rajkot dairy is comparatively less, its administrative expenses are very high and need to be controlled to some extent to increase profitability.

(4) **Uttam Dairy : (Ahemadabad)**

Uttam Dairy of Ahemadabad ranks first (1st) on the average in administrative expenses compared to other selected dairies. Inspite of limited volume of business such high administrative expenses need to be controlled and reduced to increase profitability. There is ever increasing trend of administrative expenses in uttam dairy Ahemadabad which needs to be checked.

(5) **Vasudhara Dairy : (Valsad)**

Vasudhara Dairy of Valsad District ranks second (2nd) on the average in administrative expenses compared to other selected dairies. This dairy needs to increase profitability, because inspite of high volume of business its profitability is very less and this is also due to administrative expenses which need to be curbed.

(6) **Sumul Dairy : (Surat)**

Sumul Dairy of Surat has successfully controlled its administrative expenses inspite of high volume of business. Sumul dairy ranks seventh (7th) on the average in administrative expenses compared to other selected dairies.

(7) **Sugam Dairy : (Baroda)**

Sugam dairy of Baroda ranks fourth (4th) on the average compared to other selected dairies in administrative expenses. Thus there is scope for reducing administrative expenses to further improve its profitability.
Chart No: 6.13

Administrative & General Expenses to Total Expenses Ratio of the selected dairies under the study for the period of (2000-01 to 2007-08)
Administrative & General Expenses to Total Expenses Ratio of the selected dairies under the study for the period of (2000-01 to 2007-08)
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Table No: 6.8
Marketing & Distribution Expenses to Total Expenses Ratio of the selected dairies under the study for the period of (2000-01 to 2007-08)
6.7 MARKETING & DISTRIBUTION EXPENSES TO TOTAL EXPENSES

➢ Introduction:

Marketing Expenses are not as high as those of multination companies, because, Co-operative dairies are already popular among the Indians. We shall discuss the marketing or distributing expenses of selected co-operative dairies.

(1) Dudhasagar Dairy: (Mehsana)

On the average marketing expenses of mehsana dairy are much low ranking sixth (6th). compared to other selected dairies. The average of eight years of marketing or distributing expenses of Mehsana Dairy is 0.002. The marketing or distributing expenses of mehsana dairy are quite under control. Lower marketing expenses lead to higher profitability.

(2) Amul Dairy: (Anand)

Marketing or Distributing expenses of Amul Dairy’s are the lowest so quite under control. On the average compared to other selected dairies Amul Dairy ranks seventh (7th) in marketing or distributing expenses. Thus in Amul Dairy there is a no problem regarding marketing or distributing expenses.

(3) Gopal Dairy: (Rajkot)

Gopal dairy also doesnot incur much marketing or distributing expenses. Seeing the average figure of eight years, we find that gopal dairy ranks fifth (5) compared to other selected dairies. Thus in Gopal Dairy marketing or distributing expenses does not create any problem for profitability.

Page No. 231
(4) **Uttam Dairy : (Ahemadabad)**

Ahemadabad’s Uttam Dairy incurs some what higher marketing or distributing expenses. This can be seen from the average figure of eight years, ranking fourth (4th) among selected dairies. Controlling marketing expenses may lead to higher profitability for Ahemadabad’s Uttam Dairy.

(5) **Vasudhara Dairy : (Valsad)**

Vasidhara Dairy of Valsad has much higher marketing or distributing expenses. On the average Vasudhara Dairy ranks third (3rd) among selected dairies under the study. Lower profitability can be checked by controlling marketing or distributing expenses.

(6) **Sumul Dairy : (Surat)**

Sumul Dairy inspite of very high sales volume, it ranks sixth (6th) in sales related profitability. One of the reason of low profitability is higher marketing or distributing expenses where in Sumul Dairy ranks second (2nd) on the average compared with other selected dairies.

Controlling marketing or distributing expenses of Sumul Dairy may improve its profitability.

(7) **Sugam Dairy : (Baroda)**

Baroda’s Sugam Dairy ranks fifth (5th) in sales related profitability on the average compared with other selected dairies. Such low profitability is also due to very high marketing or distributing expenses. In marketing or distributing expenses on the average Baroda’s Sugam Dairy ranks first (1) among selected dairies. Considerable reduction in marketing or distributing expenses is urgently needed to improve profitability of Baroda’s Sugam Dairy.
Marketing & Distribution Expenses to Total Expenses Ratio of the selected dairies under the study for the period of (2000-01 to 2007-08)
Marketing & Distribution Expenses to Total Expenses Ratio of the selected dairies under the study for the period of (2000-01 to 2007-08)
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6.8 INTERESTS / TOTAL EXPENSES:

➢ Introduction:

Existence of interest expenses denotes use of unavoidable borrowed fund to carry on the business. The larger the borrowed fund the more will be the expenditures after interest and lower will be the profitability. So some sort of control is necessary over interest expenditure to increase profitability. Now we shall see the position of interest expenditures of each dairy out of the selected dairies.

(1) Dudhasagar Dairy: (Mehsana)

For Dudhsagar dairy of Mehsana interest expenditure is unavoidable due to higher business volume. Therefore it is but natural that mehsana dairy ranks fourth (4th) on the average in interest expenditure as compared to other selected dairies. There is scope for reduction of interest expenditure to improve profitability. In the first five years there is a decreasing trend in the interest expenditure then there is again slightly increasing trend in interest expenditure.

(2) Amul Dairy: (Anand)

Amul Dairy of Anand has higher business volume therefore need for fund for the investment will also be high. Compared to other selected dairies Amul Dairy ranks first on an average in interest expenditure. But its return on net worth is very low ranking sixth on the average. This suggests that Amul Dairy’s marginal efficiency of capital is very low. This denotes over capitalization, resulting in high interest expenditure and injuring the profitability. Amul Dairy needs efficient use of capital to improve profitability. Economic use of borrowed fund will reduce interest expenditure and there by improve profitability.
(3) **Gopal Dairy : (Rajkot)**

Interest expenditure of Gopal Dairy of Rajkot is well under control compared to other selected dairies ranking fifth (5th) on the average in interest expenditure. In Rajkot Dairy there is a decreasing trend in interest expenditure every year.

(4) **Uttam Dairy : (Ahemadabad)**

Uttam Dairy of Ahemadabad is on the average second highest in interest expenditure. This denotes dominance of borrowed fund. There is enough scope for reduction in borrowed fund and efficient use of capital which would also result in reduction of interest expenditure.

(5) **Vasudhara Dairy : (Valsad)**

Vasudhara Dairy’s profitability is the lowest among the selected dairies and yet it’s interest expenditure is out of control ranking third (3rd) on the average among other selected dairies. To improve profitability vasudhara dairy should reduc borrowed fund and also make efficient use of this fund and thereby curb interest expenditure and make progress in profitability.

(6) **Sumul Dairy : (Surat)**

Sumul Dairy of Surat has low profitability but which is not due to interest expenditure because sumul dairy ranks seventh (7th) in interest expenditure on an average as compared to other selected dairies. So sumul dairy’s low profitability is due to other reasons.
(7) Sugam Dairy: (Baroda)

Sugam Dairy of Baroda lags behind in sales related profitability as well as return on net worth. But interest expenditure is not responsible for lower profitability because sugam dairy of Baroda ranks sixth (6th) in interest expenditure on an average compared to other selected dairies. Baroda dairy’s interest expenditure has almost decreasing trend since 20002-03.
Chart No: 6.17

Interest to Total Expenses Ratio of the selected dairies under the study for the period of (2000-01 to 2007-08)
Chart No: 6.18
Interest to Total Expenses Ratio of the selected dairies under the study for the period of (2000-01 to 2007-08)
### Table No: 6.10

Total Assets Turnover Ratio of the selected dairies under the study for the period of (2000-01 to 2007-08)

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</thead>
<tbody>
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<td>Rajkot</td>
<td>3.87</td>
<td>3.97</td>
<td>4.58</td>
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<td>5.34</td>
<td>5.56</td>
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<td>6.24</td>
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<tr>
<td>Valsad</td>
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# 6.9 TOTAL ASSETS TURNOVER RATIO:

1. **Dudhsagar Dairy: (Mehesana)**

   Mehesana dairy ranks fifth (5th) on the average in total assets turnover ratio. Inspite of highest sales figure every year, total assets are of much higher value every year so the ratio suffers.

2. **Amul Dairy: (Anand)**

   Total assets turnover ratio of amul dairy on the average ranks seventh (7th) among other selected dairies. Inspite of such high sales figures of every year, This Position suggests less marginal efficiency of capital and a situation of over capitalisation which requires to be checked.

3. **Gopal Dairy: (Rajkot)**

   Gopal Dairy (Rajkot) Ranks first (1st) on the average on total assets turnover ratio. Sales figure of rajkot dairy are low compared to other selected dairies yet due to low total assets the higher total assets turnovers ratio is possible. This ratio is improving every year. And it suggests better marginal efficiency of capital.

4. **Sugam dairy: (Baroda)**

   Total assets turnover ratio of Baroda dairy is also high ranking first (1st) on the average, compared to other selected dairies.

   Total sales of Baroda dairy are not very high so such a high total assets turnover ratio has been achieved due to much lower total assets indicating higher marginal efficiency of capital.
(5) **Sumul Dairy : (Surat)**

Surat dairy ranks third on the average in total assets turnover ratio compared to other dairies. Such position of Surat dairy is possible due to higher sales. It ranks third (3rd) even in net sales.(see table no : 6.1) There is no considerable increase in total assets.

(6) **Vasudhara Dairy : (Valsad Dist. )**

Total Assets Turnover Ratio of Valsad Dairy is neither so high nor so low. On the average its ranks fourth (4th) compared to other selected dairies. Valsad Dairy ranks fourth (4th) even in average total sales. ( see table no : 6.1 ) Thus, the ratio is maintained only due to sales. Valsad Dairy has maintained higher sales figures.

(7) **Uttam Dairy : (Ahmedabad )**

Uttam Dairy’s position regarding total assets turnover ratio is not at all good. The total assets turnover ratio is very low ranking sixth (6th) among selected dairies under the study, even in average total sales Ahmedabad Dairy ranks sixth (6th). The average total sales figures of Ahmedabad Dairy is very low. Then on the other hand total assets figures are very high resulting in very low total assets turnover ratio. Ahmedabad Dairy's position is of over capitalization which requires some correction.