Financial Analysis of Rajasthan Co-Operative Dairy Federation LTD., Jaipur, Rajasthan

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(AGRICULTURAL ECONOMICS AND FARM MANAGEMENT)

By

NIHAL GURJAR

(180109035)

Department of Agricultural Economics and Farm Management

College of Agriculture, Jabalpur - 482004

Jawaharlal Nehru Krishi Vishwa Vidyalaya

Jabalpur, Madhya Pradesh

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All the assistance and help received during the course of the investigation has been acknowledged by him.

Place: Jabalpur ***Dr. A.*** **Shrivastava**

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Place: Jabalpur ***Dr. A.*** **Shrivastava**

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Committee	**Name**	**Signature**
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Place: Jabalpur

Date: **(Nihal Gurjar)**

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LISTS OF ABBREVIATIONS

RCDF Ltd.	Rajasthan Cooperative Dairy Federation Limited
GOR	Government of Rajasthan
DAH&F	Department of Animal Husbandry & Dairying, fisheries
AH	Animal Husbandry
AI	Artificial Insemination
GOI	Government of India
GDP	Gross Domestic Product
WHO	World health organisation
AMUL	Anand Milk Union Limited
RSDDC	Rajasthan State Dairy Development Corporation
DCS	District Cooperative Societies
PDCS	Primary District Cooperative Societies
NDDB COOP	National Dairy Development Board Corporation
TKGPD	Thousand kilogram Per Day
TLPD	Thousand Liter Per Day
NCR	Net Capital Ratio
OPEX or OR	Operating Expense Ratio
FR	Fixed Ratio
ROE	Return Over Equity
NPM	Net Profit Margin
ATR	Assets Turnover Ratio
DER	Debt-Equity Ratio
CV	Co-efficient of variation
R^2	Coefficient of Determination
%	Per Cent
*	Significant

CHAPTER – I

INTRODUCTION

INTRODUCTION

Dairying is an integral part of farming systems in India and also plays an important role in strengthening the rural economy. So, the Government of India established milk producers Co-operative Societies for collection of milk at the village level which provided the impetus for the rapid growth in dairy farming Dairy Co-operatives play an important role in marketing of milk and milk products and give incentives to producers. Millions of farm families depend on the income from dairy for their livelihood. Dairying is an important sector that generate employment with lower investment.

India's Livestock sector is one of the largest in the world with 37.28 per cent of World cattle's 21.23 per cent of buffalo, 26.40 per cent of goats and 12.17 per cent of sheep. Total cattle population in the state (Rajasthan) as on 2019 livestock census is 192.5 million and the total livestock population of India is 536 million which rise 4.6 per cent over 2012 livestock census (20^{th} livestock census-2019). More than thirty per cent of cattle and more than twenty per cent of buffalo in the world are in India or most of these are milch cows and milch buffaloes. In 2010-11, livestock generated output worth Rs 20750 crores (at 2004-05 prices) which compromised 4 per cent of the GDP and 26 per cent of the agriculture GDP. In fact, the total worth of output from livestock was higher than food grains at that time. In present scenario livestock share in GDP is about 5.1 percent. Livestock sector has registered positive growth of 5.3 per cent annually during 1980s, 3.9 percent in 1990s and 3.8 percent in 2000s, albeit the magnitude of growth has reduced, the positive growth in livestock has enabled to push up the agricultural sector growth rates which experiences wide annual fluctuation in crop output.

India is the largest milk producing country in the world accounting for 22 per cent of global milk production. India has surpassed USA and China in total production mainly because of a greater number of households depending on dairy as an assured source of income. The milk produced in India is derived from cows, buffaloes and goats with a share of 43, 53 and 4 percent respectively in that order. The country's milk production increased from around 20 million tonne in 1960 to 187.7 million tonne in 2019. (DAHD&F,

GOI) During 2018-19 the total milk production of India shares 4.2 per cent of national GDP. India has the world's largest buffalo population and stand first in buffalo milk production with a share of 66 per cent of world buffalo milk production. Among the major states, Uttar Pradesh accounts for the largest cattle population of 67.8 million, followed by Rajasthan with 56.7 million (2018-19). Among the major milk producing states of the country, Uttar Pradesh ranks 1st with a population of 67.8 million followed by Rajasthan with 56.8 million.

The per capita availability of milk was 394 gm/day during 2018-19 against the WHO recommendation of 280 gm/day. The per capita availability in India is higher than the world average of 294 gm/day, whereas developed countries recorded 831 gm/day and Asian continent 186gm/day. In India Punjab has highest per capita milk availability about 1181gm/day followed by Haryana (1087gm/day) and Rajasthan (870gm/day). (Source: NDDB.COOP)

1.1 Concept of Financial Analysis

Financial Analysis refers to the assessment of a business to deal with the planning, budgeting, monitoring, forecasting, and improving of all financial details within an organization. All type of institutions whether government or private keep an accounting record of their day to day transactions and prepare financial statements comprising of primarily the position statement or the balance sheet and the income statement or the profit and loss account. These statements are the sources of information on the basis of which conclusion are drawn about the profitability and the financial position of a concern. Through financial analysis, financial soundness of the firm can be judged. It is a process of determining financial strength weakness of the firm by properly establishing relation between the items of balance sheet and profit & loss account. This analysis of financial statement is a mean to understand financial state of affairs of a business concern in a better way by process of analysis and include establishing relationships comparison and setting trends. Understanding your organization's financial health is a fundamental aspect of responding to today's increasing stringent financial reporting requirement. Financial analysis performed by professionals who prepare reports using ratios that makes use of information taken from financial statements and other

reports. These reports are usually presented to top management as one of their basis in making business decisions. The most common methods used for financial statement analysis are trend analysis, common size statements and ratio analysis.

1.1.2 Need of Financial Analysis

- To identified ascertain financial ratios and trends across in liabilities and assets.
- To analyze and adjust planned and forecasted amounts.
- Make decisions regarding investing or lending capital.
- To evaluate a company's profitability, liquidity and solvency.
- To make business decision making plans for a company based on financial statement analysis.
- Financial statement analysis provides us a brief information about company' present and past financial situations.

1.2 History of dairy co-operative in India

In the early forties, the British Government in India decided to improve the quality of milk in Bombay city. The municipal corporation of Bombay city organized a scheme in November, 1945 (known as the Bombay Municipal Corporation Milk supply scheme) for bringing milk from Kaira District at a distance of about 400 Km from Bombay city and selling at subsidized rate to expectant mothers and children. The Bombay Municipal Corporation Milk supply scheme purchased a fixed quantum of milk from Polson Limited, a private enterprise at Anand. There was huge difference in the price paid under the scheme and that of final price paid by Polson to the farmers. Polson maximised its profit by minimising the price paid to the milk producers. He created a strong network of contractors in the district.

The Bombay Municipal Corporation Milk supply scheme faced severe financial problems during the early days of its operation. In 1946, the government of Bombay State took over the administration of the scheme and established a statutory body known as the Bombay Milk Scheme. The Bombay Milk Scheme awarded a monopoly right for procuring milk in Kaira District to Polson, a decision that aroused strong political opposition in the

district as the benefits of a relatively high purchase price paid by the Bombay Milk Scheme were not likely to be passed on to the producers. The arrangement was satisfactory to all concerned except the farmers. The government found it profitable and Polson kept a good margin. Milk contractors took the biggest cut. No one had taken the trouble to fix the price of milk to be paid to the producers. Thus, under the Bombay Milk Scheme the farmers of Kaira district were no better off than before. They were still under mercy of milk contractors. They had to sell their milk at a price the contractors fixed. The discontent of the farmers grew. They met Sardar Vallabhai Patel, who had advocated farmers' cooperatives as early in 1942. On his advice farmers of Kaira District launched a campaign to organize dairy cooperative, which paved way for the AMUL model of dairy development in India.

1.2.1 The Anand pattern

The cooperative dairying in India really came into reckoning from 1946 onwards. The first farmers integrated dairy cooperative was established in Anand town of Kaira District of Gujarat in 1946, to fight against the exploitation of farmers by the private traders. This cooperative is popularly known as AMUL (Anand Milk Union Limited). AMUL emerged as a result of a powerful socio-economic movement, which shook British bureaucracy in this part of the country.

The AMUL cooperative movement began with organisation of two village level dairy cooperatives in June 1946. With five dairy cooperatives as its members, AMUL got registered in December 1946. The basic unit in Anand pattern cooperatives is the village level milk producers' cooperative society - a voluntary association of milk producers who wish to market their milk collectively. All the dairy cooperative societies in a milk-shed are affiliated to an apex organisation -The District Cooperative Milk Producers Union. The milk union procures milk collected by the member dairy cooperative societies, processes the same and arranges marketing of liquid milk and milk products. Besides paying to the member dairy cooperative societies for the milk supply, the milk union provides inputs for productivity enhancement of the animals.

The salient features of Anand pattern dairy cooperatives are:

- Availability of round the year market to the milk producers.
- Effective governance by elected representative of farmers.
- Effective professional management.
- Sharing of profits by members of the dairy cooperatives on equitable basis.
- Availability of inputs for enhancing milk production of milch animals of the members of dairy cooperatives.

The journey of dairy cooperatives beginning from organisation of Kaira dairy cooperative society during 1907 in Allahabad District to the emergence of AMUL as a strong and vibrant dairy cooperative is a journey of untiring efforts of self-less leaders, committed milk producers supported by professionals, AMUL has proved to be an effective organisation which has been sensitive to the needs and aspiration of its members.

1.2.2 Operation flood

Launched in 1970, Operation Flood has helped dairy farmers direct their own development, placing control of the resources they create in their own hands. A National Milk Grid links milk producer throughout India with consumers in over 700 towns and cities, reducing seasonal and regional price variations while ensuring that the producer gets fair market prices in a transparent manner on a regular basis.

The bedrock of Operation Flood has been village milk producers' cooperatives, which procure milk and provide inputs and services, making modern management and technology available to members. Operation Flood's objectives included:

- Increase milk production ("a flood of milk")
- Augment rural incomes
- Reasonable prices for consumers

Programme Implementation

Operation Flood was implemented in three phases.

Phase I

Phase I (1970-1980) was financed by the sale of skimmed milk powder and butter oil gifted by the European Union then EEC through the World Food Programme. NDDB planned the programme and negotiated the details of EEC assistance. During its first phase, Operation Flood linked 18 of India's premier milksheds with consumers in India's four major metropolitan cities: Delhi, Mumbai, Kolkata and Chennai.

Phase II

Operation Flood's Phase II (1981-85) increased the milksheds from 18 to 136; 290 urban markets expanded the outlets for milk. By the end of 1985, a self-sustaining system of 43,000 village cooperatives covering 4.25 million milk producers had become a reality. Domestic milk powder production increased from 22,000 tons in the pre-project year to 140,000 tons by 1989, all of the increase coming from dairies set up under Operation Flood. In this way EEC gifts and World Bank loan helped to promote self-reliance. Direct marketing of milk by producers' cooperatives increased by several million litres a day.

Phase III

Phase III (1985-1996) enabled dairy cooperatives to expand and strengthen the infrastructure required to procure and market increasing volumes of milk. Veterinary first-aid health care services, feed and artificial insemination services for cooperative members were extended, along with intensified member education. Operation Flood's Phase III consolidated India's dairy cooperative movement, adding 30,000 new dairy cooperatives to the 42,000 existing societies organised during Phase II. Milksheds peaked to 173 in 1988-89 with the numbers of women members and Women's Dairy Cooperative Societies increasing significantly. Phase III gave increased emphasis to research and development in animal health and animal nutrition. Innovations like vaccine for Theileriosis, bypass protein feed and urea-molasses mineral blocks, all contributed to the enhanced productivity of milch animals.

From the outset, Operation Flood was conceived and implemented as much more than a dairy programme. Rather, dairying was seen as an instrument of development, generating employment and regular incomes for millions of rural people. **"Operation Flood can be viewed as a twenty years experiment confirming the Rural Development Vision"** (World Bank Report 1997c.)

1.2.3 Dairy Co-operative structure in India

The Anand Pattern is an integrated cooperative structure that procures, processes and markets produce. Supported by professional management, producers decide their own business policies, adopt modern production and marketing techniques and receive services that they can individually neither afford nor manage.

The Anand Pattern succeeds because it involves people in their own development through cooperatives where professionals are accountable to leaders elected by producers. The institutional infrastructure -- village cooperative, dairy and cattle feed plants, state and national marketing -- is owned and controlled by farmers. Anand Pattern cooperatives have progressively, linked producers directly with consumers.

Three tier structure

Village Society

An Anand Pattern village dairy cooperative society (DCS) is formed by milk producers. Any producer can become a DCS member by buying a share and committing to sell milk only to the society. Each DCS has a milk collection centre where members take milk every day. Each member's milk is tested for quality with payments based on the percentage of fat and SNF. At the end of each year, a portion of the DCS profits is used to pay each member a patronage bonus based on the quantity of milk poured.

The District Union

A District Cooperative Milk Producers' Union is owned by dairy cooperative societies. The Union buys all the societies' milk, then processes and markets fluid milk and products. Most Unions also provide a range of inputs and services to DCSs and their members: feed, veterinary care, artificial insemination to sustain the growth of milk production and the

cooperatives' business. Union staff train and provide consulting services to support DCS leaders and staff.

The State Federation

The cooperative milk producers' unions in a state form, a State Federation, which is responsible for marketing the fluid milk and products of member unions. Some federations also manufacture feed and support other union activities.

1.3 About Rajasthan Dairy Co-operative Federation LTD.

Rajasthan Dairy Cooperative Federation LTD, an Apex Society registered under Rajasthan Cooperative society Act 1965 of Government of Rajasthan. Dairy development was initiated by the state government in the early seventies under the auspices of Rajasthan State Dairy Development Corporation (RSDDC) registered in 1975. Two years later RCDF assumed responsibility for many of the functions of RSDDC. It became the nodal agency for implementation of operation flood in the state.

Rajasthan Cooperative Dairy Federation (RCDF) set up in 1977 as the implementing agency for dairy development programmes in Rajasthan is registered as a society under the Rajasthan cooperative societies act 1965. The Federation is a State level apex co-operative organization owned by its member unions each of which, in turn, is owned the dairy co-operative societies in its area of operation which are themselves owned by farmer members. The Federation has a board of directors which has overall responsibility for the planning policies, financial resource mobilisation and management, member and public relations as well as liaison with agencies of the state and central government, financing institutions etc. The Federation has a chief executive designated as Managing Director.

The dairy co-operative movement operates on three tier system wherein farmer members own dairy co-operative societies (DCS) which own district milk producer’s union. The unions collectively own the RCDF.

It is a vertically integrated structure that establishes a direct linkage between those who produce the milk and those who consume it.

Federation – Provides service & support to unions. Marketing within & outside state, Liaison with government and NGO agencies, mobilisation of resources & coordinating & planning programmes / projects.

Union – Develops village milk cooperative network, procures milk from DCS, processes & markets. Sale of cattle feed and related inputs, promotion of cross breeding through AI and NS, promotion of fodder development and general support & supervision to DCS.

DCS – Provides input services (AH, AI) to its members and procurement of milk.

1.4 Objectives of the study

1. To analyze the trend of profitability as indicates by income statement.
2. To analyze the financial performance of Rajasthan cooperative dairy federation Ltd.
3. To analyze the factors affecting Return over equity.
4. To suggests policy measures to enhance the financial situation of the company based on the finding of above study.

CHAPTER - II

REVIEW OF LITERATURE

REVIEW OF LITERATURE

Review of the existing related literature forms an integral part of any systematic research. It helps in identifying the conceptual and methodological issues relevant to the study. It contributes to the understanding's issues involved, analytical tools adopted and other relevant information needed for the research work. As a few studies on trend and growth rates of profitability as indicates by financial statement of dairy federation, the studies related to financial test ratio analysis and factors affecting Return Over equity have been reviewed here as these are closely related and relevant to the present investigation. Reviews are presented below:

Mattigatti et. al (1990) in this research article author evaluated the impact of the dairy co-operative societies on the cost-return structure of buffalo milk production in Dharwad district of Karnataka State. They found that the members of the co-operative societies get a higher rate of net profit than the non-members on total investment. They point out that the co-operative societies get a higher rate of net profit than the non-members on total investment. They further pointed out that the cooperatives have succeeded in procuring better price for the milk producers. Efficiency in operating activities and optimum financial policy may be the reason for a better margin to the members of the co-operative societies. Further, processing adds value for the product thereby increasing the return to the farmers.

R.L. Hyderabad (1991) has analysed the pattern and productivity of financial resources employed by Karnataka Co-operative Milk Producers' Federation Ltd. in Karnataka State. The study focused on capital productivity and aimed to ascertain causative factors responsible for the poor return on investment. It found that the Karnataka Co-operative Milk Producers' Federation Ltd. had failed to manage its total financial resources effectively and efficiently. The debt capital was the most predominant source employed to finance capital requirements and a large part of the resources raised had been lost in operating activities. Thus the study concludes that high debt and high operating losses had contributed to the poor financial working of the

Karnataka Co-operative Milk Producers' Federation Ltd. and had impugned the growth of the co-operative dairy sector in the state.

Vidya et. al. (1993) This research paper examines the financial performance of Karnataka Cooperative Oilseeds Grower's Federation (KOF) using various financial performance indicators and physical components analysis. The results indicate that although KOF performed well in the initial years of its operation, it could not sustain this performance in the later period, mainly on account of high management and established expenses. Profitability, liquidity and leverage-cum-activity being the most important dimensions of performance, the study suggests that KOF should aim at a reasonable profit, improve its liquidity position and increase leverage supported by increased sales to improve its performance in the long run.

Hosmani (1995) analysed the performance and impact of Malaprabha Grameen Bank (RRB) in Karnataka for the period from 1976 to 1994. The author Selected 11 physical and 20 financial variables for the study. He employed various analytical tools viz. ratio analysis, growth rates, principal component, cluster analysis and other to evaluate the performance of the bank. The analysis revealed the followings: the bank had favourable liquidity ratio and sufficient solvency position, borrowings were well within the norms of 3 times of working funds, the profitability ratios were well within substantial growth rate in the important variables and the officials, non-official and borrowers expressed a favourable opinion about the bank's performance.

Gangadhar and Reddy (1996) Researchers employed debt equity ratio to study the capital structure and for studying working capital, liquidity and turn over. Ratios like current ratio, acid test ratio, inventory turnover ratio were used while studying the financial performance of super bazaar in Warangal**.**

Nikam(1996) made an attempt to study the financial strength of four cooperative sugar factories situated in Aurangabad district. Two important ratios viz., current ratio and acid test ratio were employed to locate financial strength of three units (short term) and two ratios viz., debt equity ratio and net fixed assets to net worth ratio were used for assessing the long-term financial strength of the societies.

Shankara Murthy (1997) studied the performance of Karnataka State Cooperative Marketing Federation Limited. He employed financial ratio analysis to evaluate the financial performance of the federation. He used different ratios to study the different aspects of financial position of the federation such as solvency, liquidity, turnover, profitability, efficiency and strength. The study suggest that the ratio analysis would provide better idea of the financial position of the federation.

Ranade & Mathur (1998), This study tries to explore the hypothesis that those cooperative as they develop backward, forward and horizontal integration are able to increase the income of their farmer members through rationalization of costs and through undertaking value addition functions. The findings of the study reveal that cooperative in milk commodity have played important role in improving the income of their members from their milk operations substantially and have also helped small landless laborers to under-take milk production as a primary occupation. It is hoped that the study will be useful to the policy makers as well as milk cooperative societies.

Rayudu (1998), to measure the financial operations and performance of cooperative spinning mills in Andhra Pradesh studied different financial ratios such as current ratio, acid test ratio and debt equity ratio. He opined that ratio analyses had a dominant role not only for the appraisal of financial performance of cooperative but also for their ability to handle professional financial management.

Hawawini and Viallet (1999) offered yet another modification to the DuPont model. This modification resulted in five different ratios that combine to form ROE. In their modification they acknowledge that the financial statements firms prepare for their annual reports (which are of most importance to creditors and tax collectors) are not always useful to managers making operating and financial decisions.

Chidambaram(2000), analysed the growth and development of Amaravati milk dairies, Tamil Nadu, with respect to 13 identified indicators such as (1) area under milk production (2) membership (3) recovery (4) equity capital (5) debt capital (6) net working capital (7) milk price (8) cost of

production of milk products (9) machinery utilization (10) sale price (11) income (12) expenditure and (13) profit, compound growth rate was calculated for each indicator to study the growth.

Kale et al. (2000) studied the financial position, working and financial efficiency of 23 dairy co-operatives in Raigad District of Maharashtra. They studied the economic efficiency through income expenditure ratio. Expenditure income ratio, rate of return on capital and rate of turnover ratio. They concluded that (i) the societies had low owned capitals and were depending on borrowing from financial institutions (ii) Even though the working capital of dairy co-operatives was low, there turnover was high because dairy co-operatives did not make payment to the milk producer from their own funds.

Saunders (2000) provides a model of financial analysis for financial institutions based on the DuPont system of financial analysis return on equity model. The return on equity model disaggregates performance into three components: net profit margin, total asset turnover, and the equity multiplier. The profit margin allows the financial analyst to evaluate the income statement and the components of the income statement. Total asset turnover allows the financial analyst to evaluate the left-hand side of the balance sheet: assets. The equity multiplier allows the financial analyst to evaluate the right-hand side of the balance sheet: liabilities and owner's equity.

Nissim & Penman (2001) suggest using a modified version of the traditional DuPont model in order to eliminate the effects of financial leverage and other factors not under the control of those managers. Using operating income to sales and asset turnover based on operating assets limits the performance measure of management to those factors over which management has the most control. The modified DuPont model has become widely recognized in the financial analysis literature.

Thorpe and Holloway (2008) The financial objectives of a for-profit business primarily concern the needs of the external suppliers of debt and equity capital. The economic returns to shareholders comprise dividends and capital gains on the market value of their shares. As earning determine what

can be paid out as dividend in the long run, shareholders are primarily concerned with financial measures like earnings, ROS, ROA, ROE, ROI.

Soliman (2008). While the actual number of small business failures is often a topic of debate, the fact that poor financial planning and control ranks as one of the top causes of business distress and ultimate failure has been widely documented. Further, owners and managers of both struggling and successful small businesses alike often ponder how to improve the return they are getting from their enterprises. Ratio analysis provides a wealth of information that is useful in this regard and one type of analysis in particular – the modified Du Pont technique – can be used to enhance decision making with an eye on improving return. This paper: 1) explains the development and mechanics of the "really" modified Du Pont ratio model, 2) gives practical direction for the use of the model, and 3) discusses implications for the model's use as a strategic management tool for small business owners, managers, and consultants.

Ahmad (2011) studied the financial performance of seven Jordanian commercial banks. He used the ROA as a measure of banks' performance and the bank size, asset management and operational efficiency as three independent variables affecting ROA. The results of his analysis revealed a strong negative correlation between ROA and banks' size, a strong positive 68 correlation between ROA and asset management ratio, and a negative weak correlation between ROA and operational efficiency.

Almazari (2012). study attempts basically to measure the financial performance of the Jordanian Arab commercial bank for the period 2000-2009 by using the DuPont system of financial analysis which is based on analysis of return on equity model. The return on equity model disaggregates performance into three components: net profit margin, total asset turnover, and the equity multiplier. Arab bank is one of the largest financial institutions in the Middle East and is ranked amongst the largest international financial institutions. The bank witnessed a continuation of challenges brought on by the global financial crisis. It was found that the financial performance of Arab Bank is relatively steady and reflects minimal volatility in the return on equity. Net profit margin and total asset turnover exhibit relative stability for the period

from 2001 to 2009.The equity multiplier also show almost stable indicators for the period from2001-2005 and the ratios declined from 2006-2009 which indicates that the Arab bank had less financial leverage in the recent years, which means the bank is relying less on debt to finance its assets.

Georgios, et. al. (2013). The analysis of the banking crises, efficiency and profitability has been the study of several researchers worldwide. The DuPont Analysis measures the wealth of the stockholders with the ROE index and the effectiveness of the management with the ROA index and one index affect the other. It is compared the formation of a comparable size, both between individual banks, and over time. The DuPont analysis for the world systemic banks became for a time period of 8 years. Thus means 3 years before the world financial crisis (2005-2007) and 5 years after the Financial Crisis (2008-2012). The financial information obtained by the available published financial statements of the world systemic banks, Financial Stability Board (FSB) and GFIs.

Little & Coffee (2013) The purpose of this paper is to examine the financial performance of retail firms through the use of financial ratio analysis in the form of a modified Du Pont model and to identify the drivers of financial success under alternative business strategies. Firms in the retail industry are categorized according to their high/low relative net operating income to sales and asset turnover ratios. Firms with high relative net operating income to sales and low relative asset turnover are assumed to be pursuing a differentiation strategy and those with high relative asset turnover and low relative net operating income to sales are assumed to be pursuing a cost leadership strategy. Return on net operating assets is utilized as a performance variable.

Sharma, Saxena, Choudhary (2014). The effect of financial leverage is studied both at a market and a firm level where the firm is exposed to both individual and market risk. Financial leverage measures firm’s exposure to the financial risk. A high level of financial leverage allows shareholders to obtain a high return on equity, but they are also exposed to a higher risk of significant loss, if the return on assets is lower. The financial leverage employed by a firm is intended to earn more on the fixed charges funds than their relative

costs. Leverage is a business term that refers to borrowing. if a business is "leveraged" it means that the business has borrowed money to finance the purchase of assets. The other way to purchase assets is through use of owner funds or equity.

HIMATKUMAR V, B. A. R. O. T. (2015). District co-operative milk producers' union plays very imperative role for enhancing economic growth and promoting equitable regional development. There is a considerable development of district co-operative milk producers' union like The Mehsana District Milk Producers Union Ltd. (Dudh Sagar Dairy), The Sabarkantha District Milk Producers' Union Ltd. (Sabar Dairy) and The Banaskantha District Milk Producers Union Ltd. (Banas Dairy) in North Gujarat region of the Gujarat state. All these district co-operative milk producers' unions are working under the guidelines of GCMMF (Gujarat Co-Operative Milk Marketing Federation). These district co-operative milk producers' unions are not only providing the livelihood to farmers, employment to people but continuously provides milk and milk related products to Gujarat state and neighbouring states. A financial statement information pertaining to strength of particular district co-operative milk producers' unions. So here researchers have made sincere efforts to measure the profitability position of selected district co-operative milk producers’ unions by applying different methods of analysis like comparative statement, common size statement, trend percentage, ratio analysis etc.

Jayalakshmi and Udayachandra (2015) made an attempt to analyse the financial efficiency of co-operative milk unions in Tumkur. Different were calculated to examine the management of working capital in Tumkur co-operative milk federation Ltd. Net working capital ratio was used to analyse the relationship between the money used to fund operations and purchase inventory which is later converted to sales. The ratio was 25.76 indicating the company utilized its working capital efficiently and therefore it generated more sales.

Jayawardhana, A. (2016). The financial statement of Adidas has been selected and analysed. The financial statement indicates the balance sheet, income statement and the cash flow statement. Financial performance has been studied using horizontal analysis, vertical analysis, trend analysis and

mainly ratio analysis to suggest improvements to increase finance flow, improve dividend and reduce liabilities. Main analysis is based on 2014 and 2013 financial years which are ending on 31st of December in every year. The latest performance being compared with company's statements over the last five years starting 2010 for showing trends. Finally, recommendations and suggestions have been made to ensure the revenue of the company and reduce the liabilities while improving the stability of the company.

Kijewska (2016). ROE is a measure of how well a company uses shareholders' funds to generate a profit. For investors it is a worthwhile metric when analysing a company and its stock. Management Boards have an objective to increase ROE, but they realize that different factors in varying degrees influence it. Thus, almost a hundred years ago a DuPont formula was developed, which represents the ROE as a product of three indicators. Since that time different attempts have been made to modify this formula. In article the determinants of ROE are analysed for the original version and five-factor version of the DuPont formula. With ROE broken up into five determinants, causes of change in that ratio can be analysed in more detail and possible ways to improve it can be indicated. However, for the evaluation of past periods and to develop appropriate strategies for the future, such an analysis should be carried out by the management of the company, because they are the best informed on what was the reason of the decline in the indicators and what are the potential opportunities for their improvement.

CHAPTER – III

MATERIALS AND METHODS

MATERIALS AND METHODS

This chapter deals with the profile of the study area, selection of study area, the nature and source of the data, period of study, the method of data collection and the various tools and techniques employed in the analyzing the data. This chapter is presented under the following major heading:

3.1 Profile of the study area

3.2 Selection of Dairy Federation

3.3 Nature and source of data

3.4 Period of study

3.4 Analytical techniques

3.1 Profile of the study area

Rajasthan is a state in northern India. The state covers an area of 3,42,239 square kilometres (132,139 sq. miles) or 10.4 percent of the total geographical area of India. It is the largest Indian state by area and the seventh largest by population with a population of 56 million and density of 165 persons per Square kilometre. Rajasthan is located on the north western side of India, where it comprises most of the wide and inhospitable Thar Desert (also known as the "Great Indian Desert") and shares a border with the Pakistani provinces of Punjab to the northwest and Sindh to the west, along the Sutlej-Indus river valley. It is bordered by five other Indian states: Punjab to the north; Haryana and Uttar Pradesh to the northeast; Madhya Pradesh to the southeast; and Gujarat to the southwest. Its geographical location is 23.3 to 30.12 North latitude and 69.30 to 78.17 East longitude with the Tropic of Cancer passing through southernmost tip of the state. The state is characterised by diverse terrain ranging from desert and semi-arid region of western Rajasthan to the greener belts east of the Aravalli's and the hilly tribal tracts in the south-east.

The state was formed on 30 March 1949 when Rajputana – the name adopted by the British Raj for its dependencies in the region – was merged into the Dominion of India. Its capital and largest city is Jaipur. Other

important cities are Jodhpur, Kota, Bikaner, Ajmer, Bharatpur and Udaipur. The economy of Rajasthan is the seventh-largest state economy in India with Rupees10.20 lakh crore (U.S. doller$140 billion) in gross domestic product and a per capita GDP of Rupees 118,000 (U.S. Doller $1,700). Rajasthan ranks 29th among Indian states in human development index.

3.1.2 Demography

Some demographic features of the state based on the 2011 census data are indicated in the table 3.1 below:

Table 3.1: Demographic features of Rajasthan and India

Demographic indicators	Rajasthan	India
Population (in crore)	6.85	121.06
Rural population (%)	75.13	68.9
Sex Ratio (%)	928	940
Literacy rate (%)	66.01	74.04
Male literacy rate (%)	79.20	82.14
Female Literacy rate (%)	52.10	52.16
Work Force (% to the total workers)-		
A. Work participation ratio	43.60%	39.80%
B. Total worker (crore)	2.98(43.6%)	48.19
C. Total cultivator(crore)	1.36(45.60%)	11.88
D. Total agricultural laborer's(crore)	0.49(16.50%)	14.43
E. Male agricultural laborer's(crore)	0.21(11.70%)	8.27
F. Female agricultural laborer's(crore)	0.28(24.20%)	6.16
G. Household industry workers	0.07(2.40%)	1.83
H. Others	1.06(35.50%)	20.04
Total No. of BPLs- 2011-12(crore)*	1.03	27.00
Persons BPL- 2011-12(%) *	14.71%	21.90%
Source: Census 2011*		

Source: Economic review 2017-18, Govt. of Rajasthan and economic survey 2017-18, Govt. of India

3.1.2 Dairy in Rajasthan

Dairy farming is a major economic activity of the rural people in the arid and semi-arid regions of Rajasthan. Development of dairy sector has a significant beneficial impact in generating employment and reducing poverty in rural areas. Jaipur being a most populous city in Rajasthan and a popular tourist centre has huge demand for milk and milk products. Therefore, cattle and sheep rearing are traditionally followed by farm households this livestock farming pattern will also same for districts of Rajasthan. Consequent to the implementation of various dairy development programmes under Operation flood, organized supply chain for fluid milk collection and distribution were developed since 80's. towards the fulfillment of the national objective of making India self-sufficient in milk production, for the development of dairy Industry a dairy development was initiated by the state government of Rajasthan in the early seventies under the auspices of Rajasthan state development corporation (RSDDC) registered in 1975. Two years later RCDF assumed responsibility for many of the functions of RSDDC. It became the nodal agency for implementation of operation flood in the state. Then Rajasthan Cooperative Dairy Federation Ltd. (RCDF) set up in 1997 as the implementing agency for dairy development programmes in Rajasthan is registered as a society under the Rajasthan cooperative societies act 1965. The headquarter of Rajasthan Cooperative Dairy Federation Ltd. is situated at Jaipur, Rajasthan. Jaipur is the capital of Rajasthan also known as Pink City.

The study was conducted on Rajasthan Cooperative Dairy Federation Ltd. Jaipur. The total milk production of Rajasthan is 53.77 Million Tonnes during 2017-18 (Summer) registering a growth 4.7% from the year 2016-17. The total livestock population of Rajasthan is about 56.8 million. More than 60 per cent of the state's area is desert with sparsely distributed population. Agriculture is dependent on rainfall and failure of monsoon causes severe drought and scarcity conditions. It is deficient in water (the state has only 1% of total surface water). Ground water at many places is unfit for human and livestock consumption. In this condition livestock play a vital role in economy of Rajasthan.

Table 3.2: Livestock Population of Rajasthan 2007, 2012 and 2019 census

Rajasthan				
Livestock Census 2019				
S.No.	**Species**	**2007 (In million)**	**2012 (In million)**	**2019 (In million)**
1.	Cattle	12.11	13.32	13.90
2.	Buffalo	11.09	12.97	13.70
3.	Sheep	11.18	9.07	7.90
4.	Goat	21.503	21.666	20.84
5.	Horse & Ponies	0.0254	0.0378	0.034
6.	Mules	0.0009	0.0034	0.001
7.	Donkeys	0.1021	0.0815	0.23
8.	Camel	0.4218	0.3257	0.213
9.	Pigs	0.2086	0.2377	n/a
	Total	56.663	57.732	56.818

(Source: Livestock census 2019, DAH&F GOR)

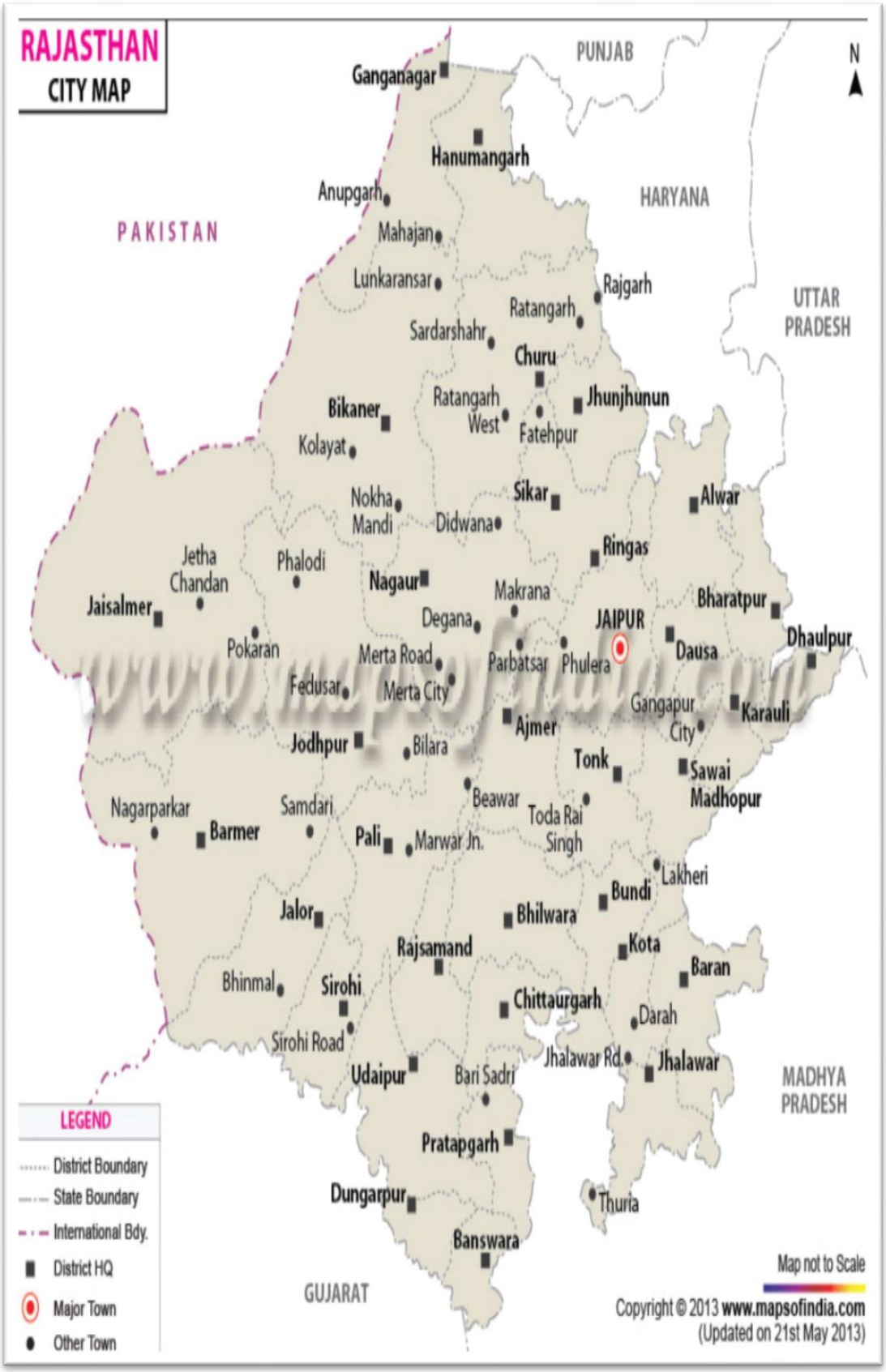

Fig. 1: Map of Rajasthan Showing Study Area

3.1.2 Rajasthan Co-operative Dairy Federation Ltd. (RCDF, JAIPUR)

Rajasthan Cooperative Dairy Federation (RCDF) was set up in 1977 under the Rajasthan Cooperative societies act 1965. The federation is a state level apex co-operative organization owned by its member unions each of which in turn is owned the dairy co-operative society in its area of operation which are themselves owned by farmer members. The Federation has a board of directors which has overall responsibility for the planning policies, financial resources mobilization and management, member and public relations as well as liaison with agencies of the state and central government, financing institutions. The Federation has a chief executive designated as managing director. The Federation works very specifically for the following objectives:

- To carry out activities for promoting production, procurement, processing and marketing of milk and milk products for the economic development of animal husbandry or farming community.
- Development and expansion of such other allied activities as may be conductive for the promotion of the dairy industry, improvement protection of milch animals and economic betterment of those engaged in milk production.
- Organize and provide technical inputs.
- Erection of Dairy, chilling plant, cattle feed plant for unions.
- Study of problems of mutual interest of the Federation and milk unions.
- Impart training and orientation to dairy co-operative members.
- Advise, assist and guide milk unions.
- Undertake audit and accounts supervision.
- Encourage fodder production.

Three tier structure of Rajasthan dairy federation Ltd.

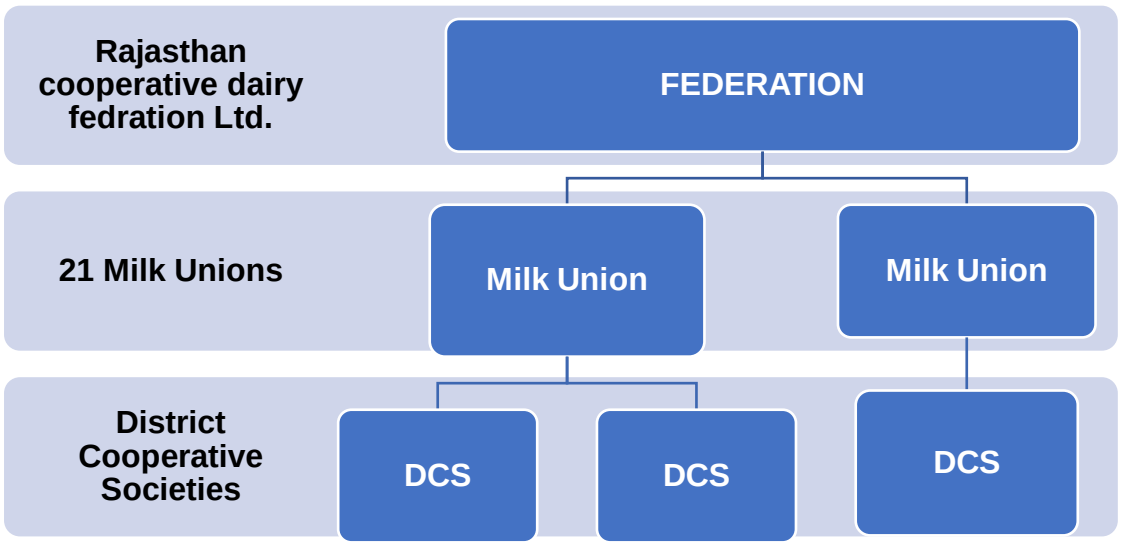

Fig. 2: Three tier structure of Rajasthan Cooperative Dairy Federation Ltd.

3.2 Selection of Dairy Federation

Dairy has also been the source of liquidity and insurance against crop failure in Rajasthan. Farmers in Rajasthan realize 60-70 per cent of the consumer price obtained from the dairy products. In such scenario, the importance of Rajasthan Milk Cooperatives can easily be understood and therefore analysis of the financial statement of Rajasthan Cooperative Dairy Federation LTD was done in this research work helps us to know the market condition from the financial data contained in the financial statements and also allowed to assess the financial health (i.e. strength or weakness) of an enterprise. It also helps to make a forecast for the future which helps us to prepare budget estimates and suggests policy measures to enhance the financial situation of the federation. We know that Rajasthan Cooperative Dairy Federation follow three tier systems which includes at the top Dairy Federation (RCDF), at level two there are 21 milk unions works under the RCDF, Jaipur and under these milk unions there are 15,208 number of registered District Cooperative Societies, Total no. of memberships 8,17,153

and total milk procurement by 21 milk Union is 2791 thousand Kilogram per day in the year of 2019-20. The details of milk 21 milk union, registered DCS, primary district cooperative society, membership, milk procurement, local marketing is listed below in the Table 3.3.

Table 3.3: List of milk unions under RCDF Ltd., Jaipur

Milk Union	Registered DCS (no.)	PDCS (no.)	Membership (no.)	Milk-Procurement (19-20) (TKGPD)	Local-Marketing (19-20) (TLPD)
Ajmer	737	134	52897	284	200
Alwar	1237	568	71401	146	142
Banswara	256	42	10963	12	0
Barmer	227	25	12856	13	8
Bharatpur	312	56	8472	7	8
Bhilwara	1102	60	68188	275	172
Bikaner	876	89	39858	56	24
Chittorgarh	983	163	49604	113	98
Churu	301	82	14180	12	10
Ganganagar	1151	397	46659	106	59
Jalore	562	33	15005	35	30
Jaipur	2620	394	184320	1,140	879
Jhalawar	280	17	8780	12	11
Jodhpur	687	73	38981	49	56
Kota	851	83	38116	72	78
Nagour	380	49	14974	23	21
Pali	581	70	37713	95	63
Sikar	634	50	38206	95	63
Sawai Madhopur	278	55	9798	11	11
Tonk	436	35	29787	37	35
Udaipur	717	71	48347	92	110
Total	15208	2546	839105	2668	2077

(Source: sarasmilkfed.rajasthan.gov.in)

3.3 Nature and source of data

The study was based on secondary data. Secondary data was collected from the financial statements maintained by Rajasthan Cooperative Dairy Federation Ltd., Jaipur, Rajasthan.

The data pertaining to total assets, total liabilities, net profit, operating expenses, fixed expenses, gross income, revenue and shareholder's equity was obtained from the income statements and balance sheets of Rajasthan cooperative dairy federation, Jaipur, Rajasthan. Other related information such milk procurement, milk payment, milk cost per kilogram was also collected from the website of Rajasthan cooperative dairy federation Ltd., Jaipur Rajasthan.

Website of Rajasthan Cooperative Dairy Federation Ltd., Jaipur was given below-
(http://www.sarasmilkfed.rajasthan.gov.in/)

3.4 Period of study

The data was collected from the annual reports of Rajasthan cooperative dairy federation., Jaipur for the period of 2007-08 to 2017-18.

3.5 Analytical tools

Keeping in view of the specific objectives of the study, the data collected were subjected to following statistical and ratio analysis.

3.5.1 Trend of profitability

3.5.2 Financial performance of Rajasthan dairy federation Ltd.

3.5.3 Factors affecting return over equity

3.5.1 Trend of profitability

Profitability of dairy federation which was indicated by income statement known as net profit of a particular year. Profitability is the result of subtracting costs and expenses from revenues. Sales minus cost of goods sold equals gross profit and gross profit minus expenses equals operating profit. Deducting taxes from operating profit results in net profit or profitability

of a business. Profitability or net profit is the amount business owners receive as income from business operation during a particular time period.

Trend of profitability or net profit refers to the general tendency or direction of increase or decrease in profitability or net profit over a period of time. Presenting a series of chronologically arranged net profit. A profitability trend is the evolution of profit within a business. An upward trend means that profit has generally increased over time in the short or long run. A downward profitability trend means profit are declining. Recognizing problem early in profitability trends gives you a better chance to address revenue and cost issues. The formula of trend, simple growth rate and compound growth rate is given below:

$$\text{Simple growth rate} = \frac{\text{b}}{\bar{y}} * 100$$

$$Compound\ Growth\ rate = [(Anti \log b) - 1] * 100$$

$$Trend(y) = a + bx$$

Where,

$\bar{y}$ = change in profitability

a = Intercept

b = Regression Co-efficient

x = Independent variable

3.5.2 Financial performance of RCDF Ltd.

In order to know the financial performance of the Rajasthan cooperative dairy federation Ltd., Jaipur, Rajasthan the financial ratio analysis is an effective tool for providing the summary of the performance of a business organization has been relied. The ratio relating to net capital ratio, operating ratio and fixed ratio of the Rajasthan cooperative dairy federation Ltd. have been analyzed.

The secondary data drawn from the audited annual statements of the balance sheet, profit and loss account of the Rajasthan cooperative dairy federation for a period of ten years from 2007-08 to 2017-18 (of these years,

one year annual report prepared and presented for 18 months; hence instead of 11 years it is counted as 10 years) were subjected to rigorous financial ratio analysis. The financial ratio used for the analysis are described below.

3.5.2.1 Net capital ratio

Net capital ratio of not more than 15:1 between indebtedness and liquid asset is considered adequate indebtedness includes money owed to the firm, margin loans, and commitments to purchase securities. Liquid assets include cash and assets which are easily converted to cash.

This ratio would reflect the financial strength of a business organization.

$$Net\ capital\ ratio = \frac{Total\ Assets}{Total\ Liabilities}$$

Higher the ratio, greater would be the margin of safety against the decline in the prices of major assets of the milk federation.

3.5.2.2 Operating ratio

The operating ratio shows the efficiency of a federation's management by comparing the total operating expense (OPEX) of a company to net sales or gross income. The operating ratio shows how efficient a federation's management is at keeping operating costs low while generating revenue or sales. An operating ratio that is going up to one is viewed as a negative sign, as this indicates that operating expenses are increasing relative to sales or revenue. Conversely, if the operating ratio is lower than one, expenses are decreasing, or revenue is increasing, or some combination of both. A company may need to implement cost controls for margin improvement if its operating ratio increases over time.

$$Operating\ ratio = \frac{Total\ operating\ Expenses}{Gross\ income}$$

Operating expenses are the costs associated with running the business that is not directly tied to the production of the product or service. Operating expenses include overhead expenses such as sales, general, and administrative costs.

3.5.2.3 Fixed Ratio

A fixed expense is an expense whose total amount does not change when there is an increase in an activity such as sales or production. The fixed expenses include security, maintenance fees, phones, internet service, insurance, lighting, advertising or depreciation expense for the buildings and equipment's. A lower fixed expenses ratio means more profitability and a higher ratio means less profitability. The ratio changes significantly as the sales volume changes. The ratio is helpful in controlling and estimating future expenses.

$$Fixed\ ratio = \frac{Total\ fixed\ expenses}{Gross\ income}$$

3.5.3 Factors affecting Return over Equity

Return over equity (ROE) is a measure of financial performance calculated by dividing net income by shareholders' equity. Because shareholders' equity is equal to a company's assets minus its debt, ROE is considered the return on net assets. ROE is considered a measure of the profitability of Federation in relation to stockholders' equity. The formula of calculating Return over equity is:

$$Return\ over\ equity = \frac{Net\ income}{Shareholder's\ equity}$$

Net income is the amount of income, net of expense, and taxes that a company generates for a given period. Shareholders' equity is calculated by adding equity at the beginning of the period. The beginning and end of the period should coincide with the period during which the net income is earned. So, to know the factors which were affect return over equity a modified Du pont analysis was to use to know the impacts of these factors on return over equity.

In modified Du Pont analysis the return over equity is decomposed into four components so that we can know that which factors were have a major impact on ROE. These four factors are Net profit margin(the measure of operating efficiency), Asset turnover(measure of assets use efficiency), Net

capital ratio(measure the cash and operating liquidity position of a business) and Debt-equity ratio(measures of leverage of business) DuPont analysis is a framework for analysed fundamental performance originally popularized by the Du Pont Corporation, now widely used to compare the operational efficiency of two similar firms. Du Pont analysis is a useful technique used to decompose the different drivers of return on equity (ROE).

In modified Du Pont analysis Return over equity is calculated as,

Return over equity = Net profit margin × Asset Turnover × Net Capital Ratio × Debt-Equity ratio

Where,

$$Net\ profit\ margin = \frac{Net\ income}{Gross\ revenue}$$

$$Assets\ turnover = \frac{Gross\ revenue}{Total\ assets}$$

$$Net\ capital\ ratio = \frac{Total\ assets}{Total\ Liabilities}$$

$$Debt - equity\ ratio = \frac{Total\ Liabilities}{Shareholder's\ equity}$$

3.5.3.1 Regression analysis

Regression analysis allows to estimate how a dependent variable change as the independent variable's changes. Multiple linear regression model was used to estimate the relationship between two or more independent variables and one dependent variable. In this analysis Return over equity is dependent variable and net profit margin, assets turnover, net capital ratio and debt-equity ratio was independent variables. This shows How strong the relationship is between four independent variables and one dependent variable and value of the dependent variable at a certain value of the independent variables. The formula for this simple linear regression model is

$$\boldsymbol{ROE = \alpha\ Net\ profit\ margin + \beta\ Assets\ turnover + \gamma\ Net\ Capital\ Ratio + \delta\ Debt - equity\ Ratio}$$

Where,

ROE = Dependent variable

NPM, AT, NCR, DER = Independent variables

α, β, γ ….δ = Coefficient of independent variables

The p-value in multiple linear regression model infers that,

If p- value is less than 0.05 then the independent variables used are significant impact on dependent variable i.e. ROE.

If p- value is greater than 0.05 than the independent variables used are not have a significant impact on dependent variable i.e. ROE.

CHAPTER - IV

RESULTS

RESULTS

In accordance with the objectives of the study, the data collected from secondary sources were analyzed and are interpreted. The findings of the study are presented in this chapter under the following heads:

4.1 Performance of Rajasthan Cooperative Dairy Federation Ltd.

4.2 Trend of profitability as indicated by income statement

4.3 Financial performance of Rajasthan Cooperative Dairy federation Ltd.

4.4 Factors affecting return over equity

4.1 Performance of Rajasthan Cooperative Dairy Federation

The business performance of Rajasthan cooperative dairy federation was analyzed using secondary information obtained from the federation. The milk procurement (per year), milk payment (per year), cost per kilogram milk (per year) were collected for ten years from 2007-08 to 20017-18. This information provides the actual performance growth of federation in that particular years.

Table 4.1: Business performance of Rajasthan Cooperative Dairy Federation Ltd.

Years	Milk Procurement (TKGPD)	Milk Payment (Lac. Rs.)	Cost Per Kilogram (Rs.)
2007-08	1359	67560	13.58
2008-09	1653	95921	15.90
2009-10	1651	111001	18.42
2010-11	1627	126251	21.26
2011-12	1741	151322	23.75
2012-13	1931	164990	23.40
2013-14	2245	247012	30.14
2014-15	2545	295717	31.83
2015-16	2601	288690	30.33
2016-17	2568	310577	33.13
2017-18	2845	350870	33.79

(Source: sarasmilkfed.rajasthan.gov.in)
*TKGPD: Thousand kilogram per day

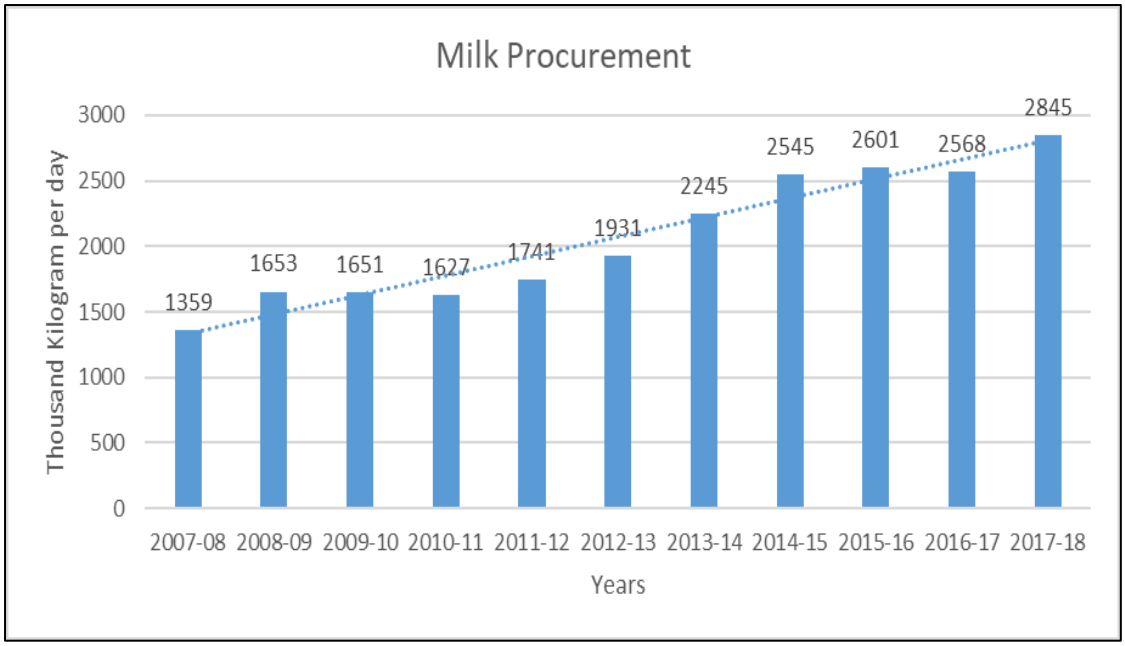

Fig. 3: Milk procurement of Rajasthan Cooperative Dairy Federation Ltd.

In table 4.1 and figure 3 milk procurement of federation was increased over the years in that particular study period. Milk procurement was 1359 thousand kilogram per day procured in year 2007-08 which was increased to 2845 thousand kilogram per day in the year 2017-18 with a compound annual growth rate of 7.51 per year. Overall the milk procurement was increased in all years except in the year 2009-10, 2010-11 and 2016-17 it was decreased from their previous year to 1651, 1627 and 2568 thousand kilogram per day respectively.

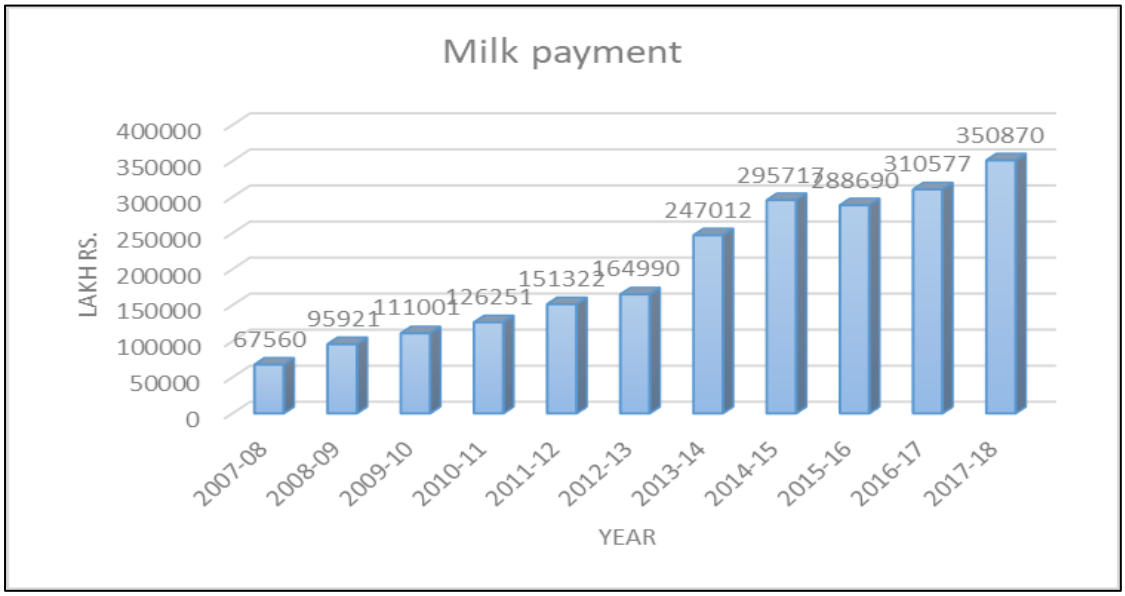

Fig. 4: Milk payment of Rajasthan Cooperative Dairy Federation Ltd.

In table 4.1 and figure 4 Milk payment for milk procurement of federation was increased in that particular period. Milk payment was 67560 lakhs in year 2007-08 which was increased up to 350870 lakhs in 2017-18 with a compound annual growth rate of 17.77 per year. All over the year the milk payment was increased except in the year 2015-16 it was decreased from the previous year to 288690 lakh Rs.

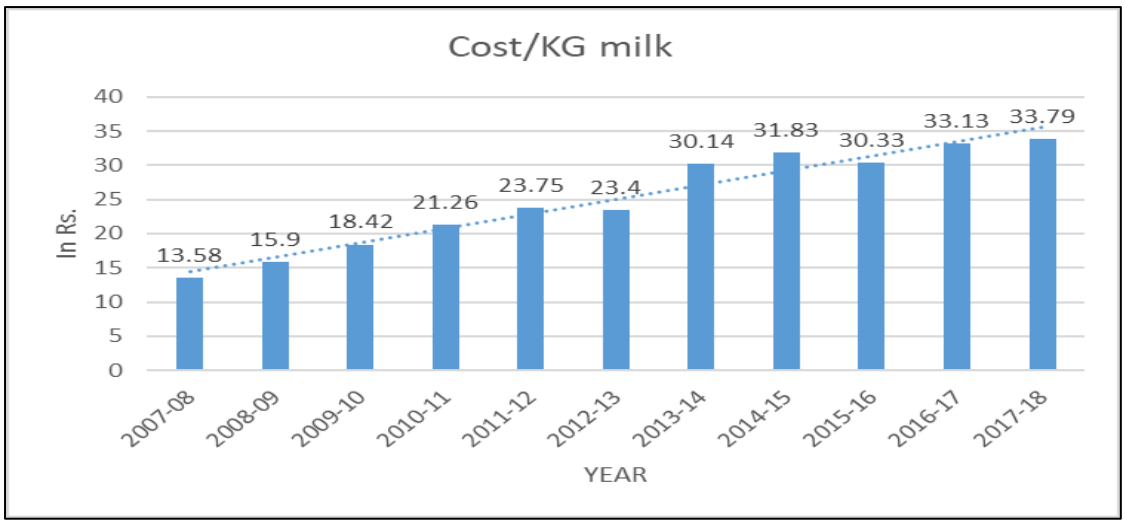

Fig. 5: Cost per kilogram of milk of Rajasthan Cooperative Dairy Federation Ltd.

In table 4.1 and figure 5, The per kilogram cost of milk was 13.58 Rs. in the year 2007-08 which was increased up to 33.79 Rs. in the year 2017-18 with a compound annual growth rate of 9.55 per year, except in the year 2012-13 and 2015-16 which decreased from the previous year to 23.40 Rs. and 30.33 Rs. Respectively.

4.2 Trend of profitability as indicated by income statement

Table 4.2: Net profit trend of Rajasthan Cooperative Dairy Federation Ltd.

Year	Net Profit (In Rs.)	% Trend Change Per Year
2007-08	84250762.45	-
2008-09	90435342.34	3.5
2009-10	81640322.59	-5.1
2010-11	154934661.29	31.0
2011-12	106809408.24	-18.4
2012-13	100153884.85	-3.2
2013-14	136997864.16	15.2
2014-15	23820009.57	-70.4
2015-16	175458978.84	76.1
2016-17	221099449.36	11.5
2017-18	407668795.94	29.7

(Source: sarasmilkfed.rajasthan.gov.in)

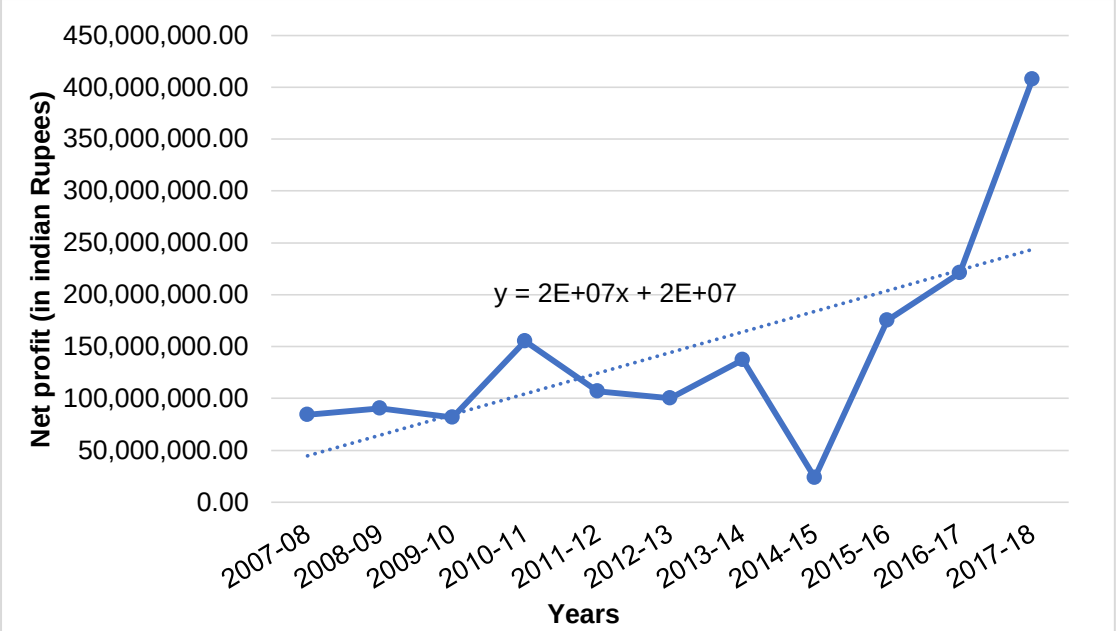

Fig. 6: Trend of profitability of Rajasthan Cooperative Dairy Federation Ltd.

Simple growth rate	13.83 %
Compound growth rate	9.77

In this profitability trend analysis, Net profit of federation was interpreted as profitability. Net profit show income left after reducing all the costs and expenses from revenues of federation. In table 4.2 net profit of year 2007-08 was 8,42,507,62.45 Rs. Which was increased up to 40,76,687,95.94 Rs in the year 2017-18. That show net profit of federation was increased in that particular study period except in the year 2009-10, 2011-12, 2012-13 and 2014-15 net profit was decreased from their previous years to -5.1, -18.4, -3.2 and -70.4 per cent respectively.

In figure 6 net profitability trend line of Rajasthan cooperative dairy federation Ltd. was moved in upward direction which indicated that profits of federation were raised and operational efficiency was improved. Simple growth rate and compound growth rate of year 2007-08 to 2017-18 was 13.83 per cent and 9.77, respectively.

4.3 Financial performance of Rajasthan Cooperative Dairy Federation

The financial performance of Rajasthan cooperative dairy federation was analyzed using net capital ratio, operating ratio and fixed ratio indicators.

These provide the possibility of comparison of actual performance with indicative ratio standards. These ratios were computed for ten years from 2007-08 to 2017-18.

Table 4.3: Financial performance of Rajasthan Cooperative Dairy Federation Ltd.

Years	Net Capital Ratio	Operating Ratio	Fixed Ratio
2007-08	0.96	0.89	0.25
2008-09	1.00	0.87	0.45
2009-10	1.02	0.55	0.59
2010-11	1.07	0.45	0.34
2011-12	1.09	0.28	0.90
2012-13	1.14	0.49	0.46
2013-14	1.15	0.22	0.36
2014-15	1.12	0.30	0.42
2015-16	1.14	0.39	1.20
2016-17	1.18	0.32	0.78
2017-18	1.25	0.20	0.52

(Source: sarasmilkfed.rajasthan.gov.in)

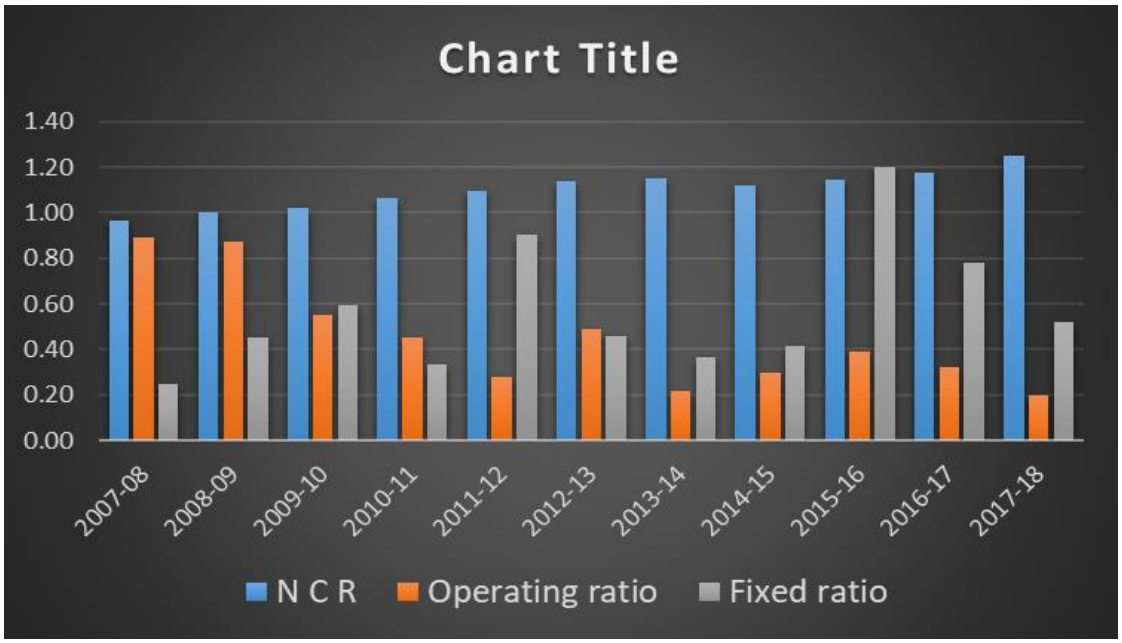

Fig. 7: Graphical representation of financial performance of Rajasthan Cooperative Dairy Federation Ltd.

4.3.1 Net capital ratio

The net capital ratio indicates margin of safety against the decline in the prices of major assets of the milk federation. Any firm should maintain the net capital ratio of not more than 15:1 between assets and liabilities. The net capital ratio of Rajasthan cooperative dairy federation is presented in Table 4.3.

In the present study, net capital ratio was highest during 2017-18 about 1.25 or least in the year 2007-08 about 0.96. Overall the trend of net capital ratio was showed an increasing growth which was a good indication for the federation. From this it was showed that federation has high liquid assets.

4.3.2 Operating ratio

The operating ratio shows the efficiency of a federation's management by comparing the total operating expenses of federations to net sales. The operating ratio shows how efficient the federation's management is at keeping operational costs low while generating revenue or sales. The smaller the ratio, the more efficient the federation is at generating revenue vs. operating expenses.

In table 4.3 operating ratio of 2007-08 was highest about 0.89 and lowest in 2017-18 about 0.20 that indicated a satisfactory performance. The operating ratio of the federation for all the ten years has decreased that is viewed as a positive sign for federation, as indicated that operating expenses are becomes an smaller percentage of net sales.

4.3.3 Fixed ratio

In table 4.3 the fixed ratio is highest in the year 2015-16 about 1.20 which means in that year federation's fixed expenses are more than revenue generated. The lowest fixed ratio is in the year 2007-08 which is about 0.25. It is conformed from table 4.3 that the fixed ratio in rest of all years is less than the standard norm indicating comfortable position of federation.

4.4 Factors affecting return over equity

Return over equity is a measure of the profitability of a federation in relation to the equity. Return over equity is calculated by dividing net income

by shareholder's equity because shareholder's equity is equal to a federation's assets minus its debt but ROE is not a perfect indicator of federation's performance. A high ROE is attractive but it doesn't say anything about the amount of debt taken, profit margin, assets use efficiency and net capital. So, to evaluate impact of these factors on ROE, ROE is decomposed into four factor net profit margin, assets turnover, net capital ratio, debt- equity ratio. To know the impact of these four factors on ROE modified du Pont method was used. The ratios were computed from 2007-08 to 2017-18 in the table 4.4

Table 4.4: Analysis of factors affecting return over equity by modified du Pont method

Years	Return Over Equity (In%)	Net Profit Margin (In%)	Assets Turnover (In%)	Net Capital Ratio (In%)	Debt-Equity Ratio (In%)
2007-08	-95.43	42.09	8.35	96.45	-2814.32
2008-09	4214.62	64.54	2.91	100.04	224031.66
2009-10	97.44	57.33	3.65	102.20	4552.91
2010-11	64.90	88.98	4.50	106.57	1522.40
2011-12	38.99	41.12	8.05	109.28	1077.52
2012-13	26.53	68.38	4.73	113.89	719.70
2013-14	26.42	50.81	6.76	114.95	668.67
2014-15	5.22	6.92	7.97	111.82	845.70
2015-16	32.37	86.29	4.71	114.36	696.46
2016-17	31.22	70.19	6.74	117.86	560.04
2017-18	39.94	66.65	11.90	124.79	403.47
Mean	407.48	58.48	6.39	110.20	21114.93
Standard Deviation	1263.57	23.09	2.62	8.35	67320.66
Coefficient of Variance (%)	310.10	39.48	40.96	7.58	318.83

Fig. 8: Graphical representation of factors affacting return over equity

In table 4.4 return over equity was break downed in four ratios by using modified du pont analysis method. In the year 2007-08 ROE was found to be -95.43 per cent which means in starting year federation loses more money than it brings in and experiences a net loss. In the year 2008-09 ROE was increased to 4214.62 per cent that shows federation is recovered their financial condition which increased a sudden bounce in ROE. In all the rest of the year's federations ROE was up to standard norms but in year 2014-15 ROE is decreased to 5.22 per cent. In that particular year federation net profit is decreased to -70 per cent from previous year which is tabulated in table 4.2

Net profit margin shows how much net income is generated as a percentage of revenue. In table 4.4 net profit margin was highest in the year 2010-11 which is about 88.98 per cent and least in 2014-15 about 6.92 per cent. In all the year the net profit margin was found satisfactory.

Assets turnover is an indicator of the efficiency with which federation used its assets to generates sales. In table 4.4 assets turnover was found highest in the year 2017-18 about 11.90 per cent and least in the year 2008-09 about 2.91 per cent.

Net capital ratio is a measure of cash and operating liquidity position of a business. In table 4.4 the net capital ratio was found highest in the year

124.79 per cent and lowest in the year 2007-08 which is about to 96.45 per cent.

Debt-equity ratio was used to evaluate the federation's financial leverage. It is a measure of the degree which can be used to evaluate much leveraged a federation is using. In table 4.4 in the year 2007-08 debt- equity ratio was in negative i.e. about -2814.32 per cent which means federation's liabilities are more than its assets. In this condition federation has interest rates on its debt that are greater than the return on investment. In the year 2008-09 this ratio was increased vigorously i.e. about 224031.66 per cent that is because federation is improving its financial condition from previous year loss. In the years 2009-10 to 2017-18 this ratio is decreased which means federation is less dependent on financial leverages and improved its financial condition.

3.5.3.1 Regression analysis

In this study the analysis finally ends with the Regression analysis of ROE, by taking ROE as a dependent variable and its factors (viz. Net profit margin, Assets turnover, Net capital ratio, Debt-equity ratio) as independent variables. This analysis is performed to understand the strength of influence of these individual factors on ROE of federation between 2007-08 to 2017-18.

Table 4.5: Result of multiple linear regression model of factors affecting return over equity

Dependent variable: Return over equity (In %)

VARIABLES	CO-EFFICIENT	p-VALUE
Net profit margin	0.504034	0.189235551
Assets turnover	-0.20906	0.95464299
Net capital ratio	-0.14073	0.700177571
Debt-equity ratio	0.018736	$5.69x10^{-14}$
F – statistic	9945.9848	$1.37x10^{-11}$
Adjusted R^2	0.856892	-

Significant p-Value= <0.05

Table 4.5 provides factors affecting Return over equity from the table 4.5, it can be inferred that out of four independent variables namely Net profit margin, Assets turnover ratio, Net capital Ratio and Debt-equity Ratio, only one variable (Debt-equity ratio) was found to be significantly affecting the return over equity. However, F-statistic is significant which means that Co-efficient of all independent variables was jointly significant. The R^2 value is 0.85 means that the model is adequate to explain the chosen dependent variables. This also means that all independent variables together account for 85 per cent of the total variation in dependent variable. The value of Co-efficient for Debt-equity ratio was 0.0187 which can be interpreted as one per cent point increase in Debt-equity ratio. Which would lead to 0.0187 per cent point increase in return over equity. This shows that return over equity is relatively insensitive to change in Debt-equity ratio.

CHAPTER – V

DISCUSSION

DISCUSSION

In this chapter, an attempt is made to discuss critically the results obtained from the chapter IV result. The important findings of the study are presented and discussed under the following sections in accordance with the objectives of the study.

5.1 Performance of Rajasthan Cooperative Dairy Federation

5.2 Trend of profitability as indicated by income statement

5.3 Financial performance of Rajasthan Cooperative Dairy federation

5.4 Factors affecting return over equity

5.1 Performance of Rajasthan Cooperative Dairy Federation

The business performance of Rajasthan cooperative dairy federation was analyzed by employing parameters such as milk procurement, milk payment and cost per kilogram milk. These data were collected for the 2007-08 to 2017-18 academic growth chart of Rajasthan cooperative dairy federation Ltd. The results of these growth parameters are discussed below:

5.1.1 Milk procurement of Rajasthan cooperative dairy federation Ltd.

Milk is the main product of federation which is further processed into byproducts. So more the milk procured to federation more income was generated to federation. In figure 3 and table 4.1 milk procurement of federation was showed an increasing with a compound annual growth rate of 7.51 per year. Which means that year on year federation milk procurement was increased.

5.1.2 Milk payment of Rajasthan cooperative dairy federation Ltd.

In table 4.1 in the year 2007-08 milk 67560 lakh Rs. Which was increased up to 350870 lakhs in 2017-18 with a compound annual growth rate of 17.77 per year. All over the years the milk payment was increased but except in the year 2015-16 it was decreased from the previous to 288690 lakh Rs. It showed that federation’s payment to milk is increased in that particular year.

5.1.3 Cost per kilogram of milk of Rajasthan cooperative dairy federation Ltd.

In table 4.1 and figure 5, cost per kilogram milk was showed an increasing trend from 2007-08 to 2017-18 period with 9.55 per year compound annual growth rate. Which means that during this period federation increased their cost per kg of milk to give benefits to their milk producer and also maintained a financially good condition in dairy market in Rajasthan.

5.2 Trend of profitability as indicated by income statement

In table 4.2 and figure 6, the net profit of federation is indicated as profitability from the year 2007-08 to 2017-18. The trend of profitability was showed an upward moving trend which means federation's profitability has recorded positive growth during this period with a simple growth rate and compound growth rate of 13.83 per cent and 9.77 respectively. Which shows an impressive growth over the study period.

The profitability of federation is directly influenced by milk procurement of all 21 milk unions in Rajasthan, milk payment of milk from milk unions and cost per kilogram of milk which is fixed by RCDF Ltd. The milk procurement, milk payment and cost per kilogram was showed a positive growth from the period of 2007-08 to 2017-18 which was tabulated in table 4.1. the net profit showed increasing trend over the study period except in the in the year 2009-10, 2011-12, 2012-13 and 2014-15 net profit was decreased from their previous years to -5.1, -18.4, -3.2 and -70.4 per cent respectively. (in table 4.2)

5.3 Financial performance of Rajasthan cooperative dairy federation

The financial performance of Rajasthan cooperative dairy federation was analyzed using net capital ratio, operating ratio and fixed ratio indicators. These provide the possibility of comparison of actual performance with indicative ratio standards. These ratios were computed for ten years from 2007-08 to 2017-18.

5.3.1 Net capital ratio

Net capital ratio was about 0.96 during 2007-08 which was increased to 1.25 in the year 2017-18. The trend of net capital ratio showed increasing trend over the study period. The net capital ratio is more than the standard norms during the study period indicating that, the assets are sufficient to cover all the liabilities except in the year 2007-08 this ratio is less than one which indicated that during that assets are more than liabilities (Table 4.2). These findings are different from those of *Kale et al.* (2000) who reported that the dairy cooperatives in Raigad district of Maharashtra has low owned capital and were dependent on borrowing from financial institutions.

5.3.2 Operating ratio

These ratio shows how efficient the federation's management is at keeping operational cost low while generating revenue or sales. The operating expense ratio in the year 2007-08 was about 0.89 which was decreased to 0.20 in the year 2017-18 (table 4.3). which indicates that the operating expenses are decreased during the study period. This finding shows that federation's management is good enough to keep operating expenses low while generating sales.

5.3.3 Fixed ratio

The fixed ratio was found smaller than one which indicates that federation's fixed capital expenses are lower during all the study period except in the year 2015-16 fixed ratio is exceeds to one i.e. about 1.20 which means during that particular year federation fixed capital expenses increased so highly. The cause of increase in this ratio is due to the previous loss in profitability about -70.4 per cent from their previous year which is tabulated in table 4.2

5.4 Factors affecting return over equity

In table 4.4 ROE was found negative in the year 2007-08 which means that federation losses money than it brings in and experience a net loss in income. In the year 2008-09 ROE was increased very high this indicates that federation recovered from previous year net loss in income by using their shareholder's equity or debt and in rest of the years the ROE is declined

which means federation is less dependent on their shareholder's money or debt. Net profit margin of federation was found satisfactory which show that federation's net income is increased as the revenue increased. Net capital ratio was found satisfactory in all the study period which means that federation have sufficient amount of assets over liabilities except in the year 2007-08 the net capital ratio was less than one which means in that particular year federation assets are less than its liabilities. Asset turnover ratio of federation indicates that federation is less efficient to use their capitals and assets to generates sales during the study period. Debt- equity ratio is the most important factors which creates rise and decline in ROE. This debt-equity ratio was negative in the year 2007-08 which indicates federation is in great loss in net profit (liabilities are more its assets). In next year federation's debt-equity ratio was increased vigorously which indicates that federation's financial leverages are so high (highly dependent on debt to increase net profit). Rest in all over the year debt-equity ratio was found to declined which show federation is becomes less dependent om shareholder' debt to generates revenue.

5.4.2 Regression analysis

The analysis finally ends with the regression analysis of ROE, by taking ROE as a dependent variable and its factors as independent variables. This analysis is performed to understand the strength of influence of these individual factors on ROE of RCDF Ltd. between 2007-08 to 2017-18.

In table 4.5 the regression analysis of ROE indicates that only debt-equity have statistically significant impact on the ROE with a coefficient value of 0.018736, which means for every per cent of DER increases, ROE increases 0.018736 per cent. Other three factors such as NPM, ATR, NCR have not statistically significant impact on ROE.

CHAPTER – VI

SUMMARY, CONCLUSION AND POLICY SUGGESTIONS

SUMMARY, CONCLUSION AND POLICY SUGGESTIONS

Dairying is an integral part of farming systems in India and also plays an important role in strengthening the rural economy. So, the Government of India established milk producers Co-operative Societies for collection of milk at the village level which provided the impetus for the rapid growth in dairy farming Dairy Co-operatives play an important role in marketing of milk and milk products and give incentives to producers. Millions of farm families depends on the income from dairy for their livelihood. Dairying is an important sector that generate employment with lower investment. It is estimated that an investment of Rs.10 lakh in dairying generates 290 days of employment, whereas the same investment can generate only 120 days of employment in crop production.

In Rajasthan, Dairy development was initiated by the state government in the early seventies under Rajasthan State Dairy Development Corporation (RSDDC) in 1975. Two years later RCDF assumed responsibility for many of the functions of RSDDC. It became the nodal agency for implementation of operation flood in the state. Rajasthan Cooperative Dairy Federation (RCDF) set up in 1977 as the implementing agency for dairy development programmes in Rajasthan that is registered as a society under the Rajasthan cooperative societies act 1965. The milk cooperatives in Rajasthan follow a three-tier structure. The farmer members, at the level one, own dairy cooperative societies (DCS). DCSs own district milk producer's union. At the top level, there is Rajasthan Co-operative Dairy Federation Limited (RCDF). In Rajasthan there are 14,991 no. of registered DCS, Total no. of memberships 8,17,153 and total milk procurement by 21 milk Union is 2791 Thousand Kilogram per day in the year of 2018-19.

Dairy has also been the source of liquidity and insurance against crop failure in Rajasthan. Farmers in Rajasthan realize 60%-70% of the consumer price from the dairy products. In such scenario, the importance of Rajasthan Milk Cooperatives can easily be understood and therefore analysis of the financial statement of RCDF LTD. helps us to know the financial information from the financial data contained in the financial statements and also allowed to assess the financial health (i.e. strength or weakness) of an enterprise. It

also helps to make a forecast for the future which helps us to prepare budgets and estimates.

6.1 Objectives of the study

1. To analyze the trend of profitability as indicates by income statement.
2. To analyze the financial performance of Rajasthan cooperative dairy federation Ltd.
3. To analyze the factors affecting Return over equity.
4. To suggests policy measures to enhance the financial situation of the company based on the finding of above study.

6.2 Methodology

The study was conducted on Rajasthan Cooperative Dairy Federation Ltd. Jaipur. The total milk production of Rajasthan is 53.77 Million Tonnes during 2017-18 (Summer) and the total livestock population of Rajasthan was 56.8 million. Rajasthan's agriculture is mainly dependent on rainfall and more than 60 per cent area is desert or a failure of monsoon causes severe drought and scarcity condition. In this situation livestock play an important role in Rajasthan economy. Dairy has also been the source of liquidity and insurance against crop failure in Rajasthan. Farmers in Rajasthan realize 60-70 per cent of the consumer price obtained from the dairy products. In this condition, the importance of Rajasthan Milk Cooperatives can easily be understood and therefore analysis of the financial statement of Rajasthan Cooperative Dairy Federation LTD was done in this research work helps us to know the market condition from the financial data contained in the financial statements and also allowed to assess the financial health (i.e. strength or weakness) of an enterprise. It also helps to make a forecast for the future which helps us to prepare budget estimates and suggests policy measures to enhance the financial situation of the federation.

The study was based on secondary data. Secondary data was collected from the financial statements maintained by Rajasthan Cooperative Dairy Federation Ltd., Jaipur, Rajasthan from the year 2007-08 to 2017-18.

The data pertaining to total assets, total liabilities, net profit, operating expenses, fixed expenses, gross income, revenue and shareholder's equity

was obtained from the income statements and balance sheets of RCDF Ltd. Other related information such milk procurement, milk payment, milk cost per kilogram was also collected from the website of Rajasthan cooperative dairy federation Ltd., Jaipur Rajasthan.

Website of Rajasthan Cooperative Dairy Federation Ltd., Jaipur was given below-

(http://www.sarasmilkfed.rajasthan.gov.in/)

6.3 Analytical tools

In order to know the trend of profitability of RCDF Ltd., trend analysis of net profit (as indicated by income statement) with compound and simple growth rate were used along with milk procurement, milk payment, cost per kilogram milk details are computed for over all the study period. In order to know the financial performance of RCDF Ltd. net capital ratio, operating ratio and fixed ratio have been analyzed. To know the factors affecting to the return over equity modified Du Pont analysis method was used. In this method ROE is breakdown into four ratio net profit margin, assets turnover, net capital ratio and debt-equity ratio or in order to know which of these four ratios is statistically significant impact ROE regression analysis was used. In regression analysis multiple linear regression model was used to estimate relation between ROE as dependent variable and NPM, AT, NCR and DER as independent variables.

6.4 Conclusion

From the financial analysis of RCDF Ltd., following findings can be pinpointed below:

- Trend of profitability as indicated by income statement show an upward movement of trend which means that federation net profit is increased during 2007-08 to 2017-18 with the simple and compound growth rate of 9.77 per cent and 13.87 respectively.
- Financial performance of RCDF Ltd. show that net capital ratio is less than standard norms in the 2007-08 in that particular year federation's price margin of assets is decreased to its liabilities but in the rest of the overall study period this was found to be increased up to the standard norms during rest of the year federation's assets price are increased to

liabilities. Operating ratio and fixed ratio of federation was showed a decreasing trend over the study period which means federation's management is good at keeping the operating expenses or fixed expenses cost low while generation revenue except in the year 2015-16 fixed expenses ratio is increased to 1.20 which is higher than one which indicates that during that particular year the fixed expenses of federation was very high while generating revenue due to the previous year loss in net profit of federation.

- Modified du Pont analysis show that federation is earning profit from the from debt or shareholder's equity. In the year 2007-08 ROE was found to be negative which show federation's losses more money than it brings in. In the next year ROE increased very high which indicates federation generates most of the profit from debt or shareholder's funds. Assets turnover of federation was found to be very low which means federation is management is not efficient enough to use its assets to generates sales during the study period.
- In regression analysis of ROE, it showed that only debt-equity ratio shows a statistically significant impact on ROE.

6.5 Policy suggestions

- Financial managers must be focused on managing debt-equity ratio for achieving higher return over equity by payed down any previous year debt, improve sales revenue and lower milk per kilogram cost, improve inventory management and restructured debt if the existing loans of federation have higher rate of interest by these suggestions federation can lower debt-equity ratio in future.
- High dependence in debt to fund capital investment must be reduced and capital investments must be financed using internal accruals.
- Capital asset purchase must be distributed over the years to avoid drain on profitability of federation in any particular year.
- Financial manager of the federation needs to increases federation's assets use efficiency from increasing its sales by more promotions and by quick movements of the raw milk from milk cooperatives societies to milk unions. Obsolete or unused assets should be liquidated quickly so federation should sell these assets that do not add to the bottom line. Another efficient way is to lease assets, instead of buying them. Any leased equipment is not counted as a fixed asset.

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CURRICULUM VITAE

CURRICULUM VITAE

Name of the author: Nihal Gurjar

Place: Rajasthan

Date of birth: 19 April, 1995

Institutions attended:

I. Jawaharlal Nehru Krishi Vishwa Vidyalaya, Jabalpur, MP

II. College of Agriculture, Bhilwara (Raj.)

III. GOVT. SH BK VB SR SEC SCH, KANKROLI

Educational qualification

Name of Degree	Subject(s) Major	Name of Institution	Year of passing	Percentage of marks/CGPA obtained
M.Sc. (Agriculture)	Agricultural Economics	J.N.K.V.V., Jabalpur, MP	2020	
B.Sc. (Agriculture)	Agriculture	College of Agriculture, Bhilwara (Raj.)	2018	7.35
12^{th}	Agriculture	GOVT. SH BK VB SR SEC SCH, KANKROLI	2013	60.80
10th	Mathematics, Science, Social	V.N.SEC SCH, KESHANAGRGUDLI KANKROLI (RAJSAMAND)	2011	70.83

Special interest:

- Development economics and policy making
- Agriculture finance and project management

For the partial fulfilment of the master's degree programme, he was allotted a research problem on "**Financial Analysis of Rajasthan Co-Operative Dairy Federation LTD., Jaipur, Rajasthan"** which is successfully conducted by him and being submitted in the form of this thesis.