

**CAPITAL FORMATION STRATEGIES IN DISTRICT LEVEL DAIRY  
CO-OPERATIVE UNIONS**

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Research Report Submitted  
to  
**National Dairy Development Board**  
Anand

by

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## ***Executive Summary***

The Institute of Rural Management Anand (IRMA) undertook a study to examine the relationship between member funds, member control, member usage, member satisfaction and co-operative performance in four District Level Dairy Co-operative Unions (DCUs) of Gujarat, India. The study used the methodology developed at IRMA and tested out in a study of the multico-op sector.

Two levels of data were collected. Details of financial accounts and DCU level data were collected from published sources. Responses from the primary level were collected from a total of 131 Dairy Co-operative Societies (DCSs) through a questionnaire.

It was found that member funds were closely associated with control, usage and satisfaction. At the DCS level it was found that share capital in the DCU was closely associated with member control through periodic decisions taken in the annual general body meetings, and with member satisfaction. It was also found that the total funds of the DCSs with the DCU were closely associated with member control through routine operations, usage and satisfaction. A causal path modelling was carried out which established that categories of member funds had influence on certain types of control and usage, and these explained member satisfaction of the primary DCSs. At the DCU level, it was found that co-operative performance was closely associated with certain types of member funds and control mechanisms. The path starting from member funds leading to member satisfaction was traced for each DCU.

On the basis of these findings, it was possible to rank member funds in order of quality. It was found that member deposits ranked higher than share capital which ranked higher than non-withdrawable reserves and member dues.

It was also found in the process of the study that the most important issues that agitate the minds of the users (DCSs) are aspects related to day to day activities. Unless these aspects were amicably settled, the users would be unwilling to discuss strategic issues related to capital formation.

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## Contents

1.	Introduction	1
2.	Research Methodology	2
3.	The Setting	8
4.	Sample Co-operative Characteristics	11
5.	Analysis of Society (DCS) Level Data	15
6.	Analysis of DCU Level Data	22
7.	Synthesis	33
	APPENDIX 1: Research Instruments	38
	REFERENCES	41

## LIST OF FIGURES

Figure 2.1	Hypothesised Relationships	2
Figure 5.1	DCS Level Model	20
Figure 6.1	Path of Kheda DCU on Control Factors	24
Figure 6.2	Path of Valsad DCU on Control Factors	26
Figure 6.3	Path of Vadodara DCU on Control Factors	28
Figure 6.4	Path of Mehsana DCU on Control Factors	30

## LIST OF TABLES

Table 2.1	Data Sources	4
Table 2.2	Sample Size of Respondents - Classified by Union	6
Table 3.1	Turnover of GCMMF Over the Years	10
Table 4.1	Important Indicators of Sample Dairy Unions (1994-95)	12
Table 5.1	Member Control	
	Rotated Factor Matrix (Varimax Rotation)	16
Table 5.2	Individual Level Correlation Coefficients	
	All DCUs (131 respondents)	17
Table 5.3	DCS Level Multiple Regressions	19
Table 6.1	Financial Indicators of Sample Co-operatives	31
Table 6.2	Means of INS 3 Variables By DCU	32

## LIST OF ABBREVIATIONS

### *Member Funds*

Quality Q1	Non-withdrawable reserves
Quality Q2	Member Share-Capital, Non-Withdrawable Deposits, and Debentures
Quality Q3	Withdrawable Reserves and Withdrawable Deposits
Quality Q4	Dues to members on account of produce supplied
FundP	Member Funds Provided by Individual DCSs, Measured by Using Survey Instrument INS 3.

### *Member Control*

MCPER	Member Control through Periodic Decisions
MCROU	Member Control through Decisions Regarding Routine Transactions
MCOC	Member Control through Occasional Decisions

### *Other*

AI	Artificial Insemination
AGM	Annual General Body Meeting
Co-op	Co-operative
DCCB	District Co-operative Central Bank
DCS	Dairy Co-operative Society
DCU	Dairy Co-operative Union at the District Level
GCMMF	Gujarat Co-operative Milk Marketing Federation
GDDC	Gujarat Dairy Development Corporation
IRMA	Institute of Rural Management, Anand
Multico-op	Multipurpose Co-operative
NDDB	National Dairy Development Board, Anand

Comment:



## **1 Introduction**

### **1.1 Background**

The National Dairy Development Board, Anand (NDDB) invited the Institute of Rural Management, Anand (IRMA) to study capital formation strategies in Dairy Co-operative Unions (DCUs) of Gujarat.

This research was the continuation of the earlier work done by IRMA in devising a methodology to study the **Capital Formation** processes in co-operatives (co-ops). The first stage of the research produced a research manual on how to carry out such research. For preparing the manual, IRMA had studied primary level dairy co-ops, multico-ops and sugar co-ops. It was suggested in that study that it might be *useful to study sectors where financing needs at the primary co-op level are significant* (IRMA, 1993). In the case of dairy co-ops, it was suggested that the study of primary co-ops alone would miss some critical linkages in the organisational set-up where there is a great deal of integration of federal and primary co-ops' activities.

Given these findings, IRMA, at the outset made an in-depth study of multico-ops, examining the relations between Member Funds, Member Control, Usage of the services provided by the co-op, the Performance of the co-op and the Satisfaction derived by the Members. The study (Agrawal et.al., 1994) had established certain relationships in the context of multico-ops in the agricultural sector. Given the past experience in conducting such a study, IRMA proposed to NDDB that it would be in a position to study Capital Formation Strategies in DCUs. The methodology developed in 1993 was used with appropriate modifications in this study also.

### **1.2 Contents**

The report is organised as follows. Section 2 summarises the research methodology. Section 3 provides the background information on the dairy co-ops in Gujarat. Section 4 provides descriptive statistics of co-ops that were studied, and the types of member funds mobilised. Section 5 provides the analysis of the data collected from the village level dairy co-op societies (DCSs). Section 6 provides the analysis of each of the DCUs. It also documents the capital profile of each of the DCUs and how they have changed over the years in keeping with the expansion of their activities. Section 7 provides a synthesis of the results of all the four DCUs and makes some general observations. Section 8 provides a brief summary and concludes the report.

Research Instruments used in the study are provided in Appendix 1.

## 2 Research Methodology

### 2.1 Research Agenda

The objectives of the study were to empirically determine whether:

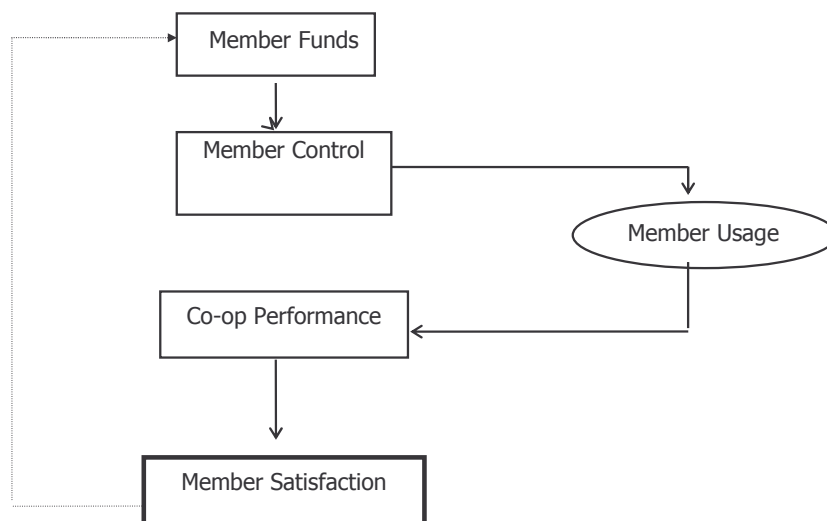
- (a) Higher levels of capital formation stimulate or are associated with:
  - co-op growth, measured by the volume of business turnover, and
  - greater participation and control.
- (b) Capital formation is affected by the federal structure of the dairy co-ops.
- (c) The quality of capital is associated with capital accumulation and member control.

### 2.2 Hypothesis

The study examined the following hypotheses:

- (a) The greater the proportion of the member-owned funds (in this case the DCSs) to total capital employed, the greater will be the member control, member usage, member satisfaction and growth rate of the co-op.

**Figure 2.1 Hypothesised Relationships**



- (b) The higher the quality of the capital, the greater will be the member control, member usage, member satisfaction and growth rate of the co-op.
- (c) The higher the growth rate of member owned funds, the greater will be the member control, member usage, member satisfaction and growth rate of the co-op.

### **2.3 Review of the Past Work**

IRMA had undertaken a similar study in the multico-op sector with a sample of 30 primary co-ops and over 900 respondents (Agrawal et.al., 1994). In the study, it was found that member-funds were significantly associated with member control and member usage. Member satisfaction in turn was strongly dependent on member usage and to a lesser extent on member control. A path analysis was undertaken which showed that member control had significant total effects on member usage and member satisfaction. It was also found that certain categories of member funds were associated with co-op performance. It was suggested in the study that a plausible ranking of member funds from the highest to the lowest would be:

- a. Non-Withdrawable Reserves and Non-Withdrawable Deposits
- b. Withdrawable Deposits
- c. Withdrawable Reserves
- d. Member Share Capital
- e. Short-Term Funds

The case studies undertaken as a part of the study documented successful capital formation strategies adopted by multico-ops. Similar studies were simultaneously undertaken in Kenya, Finland and Guatemala by other agencies in order to understand this factor better. The other studies also made significant observations regarding the types of member capital being raised in the co-operative sector. The study undertaken in Kenya included some dairy co-ops. It was found in the study that members were willing and able to contribute to the capital of the co-op, but control and growth did not have positive association with increased financial stake of the members in the co-op (KNFC, 1995). Another interesting study was undertaken in Guatemala but it was not in the dairy co-op sector and hence has not been reviewed (Marion, 1995).

### **2.4 Research Design**

#### 2.4.1 Overview

The first issue in the Research Agenda was addressed by collection of financial data from the DCUs and a survey for getting the data on member control. The study covered four DCUs in Gujarat namely Kheda, Mehsana, Valsad, and Vadodara. While trained research investigators were used in the collection of member control data from the primary societies in Kheda, Mehsana and Valsad Unions, the Chairmen and Secretaries of 33 DCSs belonging to Vadodara Union were invited to Anand for a two-day workshop where the study was discussed with them and data

collected. The data on member control was collected from at least 30 Chairmen of the DCSs of each DCU. The Chairman of each DCS participates in the Annual General Body Meeting (AGM) of the DCU where he represents the DCS in all respects. Control over the DCU is exercised through these representatives. We also collected data from one of the members on the Management Committee of the DCS who would alternate to attend the meeting in case the Chairman were not in a position to attend the meeting.

#### 2.4.2 Relationships: Variables

As mentioned earlier, data were collected at two levels, that of the DCU and that of the individual DCSs which were members of the DCU. These were to provide measures of five variables (Table 2.1). Multiple measures of funds and member control were obtained both from the DCUs and the DCSs.

**Table 2.1: Data Sources**

<b>Variable</b>	<b>Published Sources</b>	<b>Primary Sources</b>
Member Funds (funds of the DCS with the DCU)	Yes (Reports)	Yes
Member Control (measures obtained through INS3)	No	Yes
Member Usage (measures obtained through INS 3)	No	Yes
Performance of the DCU	Yes	No
Satisfaction (measures obtained through INS 3)	No	Yes

The variables used in the analysis are briefly described below:

**Member Funds Q1:** Member funds which cannot be withdrawn (indivisible and non-withdrawable reserves, containing - reserve fund, investment allowance reserve, general reserve and so on).

**Member Funds Q2:** Member funds which can only be withdrawn on termination of the membership including:

**Member Share Capital**

**Redeemable Debentures** (though debentures are redeemable over a period of time, it was classified under this category essentially because they were renewed as a routine and almost permanently stayed with the co-operative union).

**Member Funds Q3:** Member funds committed for more than one year. These include:

**Withdrawable Reserves** (including accumulated profits, co-operative propaganda fund, dividend equalisation fund and so on.)

**Withdrawable Deposits**

**Member Funds Q4:** Member funds due or committed for less than one year including dues for supply of milk.

**Member Control:** Perception of members about their ability to influence the decisions of the DCU. Essentially, control is defined as the extent of member participation in the decisionmaking processes of the DCU. The control features included control through participation in occasional decision making, control through periodic decision making and control through routine operations.

**Member Usage:** Percentage of actual usage of DCU's services by the DCSs to the potential usage. The services were categorised as primary service (milk procurement), secondary service (cattlefeed supply ) and other services (veterinary and AI services). Usage was estimated for each of the category by collecting data on milk supplied to the DCU as a percentage of the total milk procured, cattle feed bought from the DCU as a percentage of total cattlefeed purchased, and the extent of veterinary and AI services used from the DCU as compared to other sources. The calculations of percentages were made in terms of volumes in case of milk and values in case of cattlefeed. It was found that in general cattlefeed was not purchased from any other source other than the DCU.

**Member Satisfaction:** The satisfaction expressed by the members with the primary, secondary and other services of the DCU and with the overall functioning of the DCU.

**Co-operative Performance:** Annual rates of growth of the DCU in terms of sales, capital employed, gross fixed assets, net working capital, long term capital and net-worth.

2.4.3 Data

1. Financial Data

Ten years' financial statements (balance sheet and income statement) was collected from each of the DCUs that participated in the research.

2. Non-Financial Secondary Data

Ten-years DCU level data on physical output, membership, audit status and audit lag was collected from each of the DCUs using secondary sources.

3. Data from the Chairmen of DCSs

Data on member funds (investment by the DCS in the Union), member control, member usage, and member satisfaction was collected from a sample of 131 DCSs using research instrument INS 3 (translated into Gujarati). The respondents consisted of the Chairman and a member on the Management Committee/Secretary of each society. We had thus data from 255 respondents. English and Gujarati versions of the research instrument INS 3 are given in Appendix 1. The details of DCU-wise sample size are given in Table 2.2.

**Table 2.2: Sample size of respondents - Classified by DCU**

<b>Name of the Union</b>	<b>Respondent: Chairman</b>	<b>Respondent: MC Member/Secretary</b>	<b>Total</b>
<b>Kheda</b>	32	29	61
<b>Valsad</b>	32	32	64
<b>Vadodara</b>	29	33	62
<b>Mehsana</b>	34	34	68
<b>Total</b>	127	128	255

2.4.4 Analysis

Of the above sample, only the responses of the Chairmen of each DCS were used in the analysis. The data collected from Management Committee Member/Secretary from the same DCS was used in the first round, and it was found that the responses of the other member of the DCS did not significantly differ from its Chairman. In any case, since each DCS is represented by its Chairman in the decision making process of the DCU, it was felt that the data from the other member of the DCS should not be used except in cases where the Chairman's response was not available. There were four such cases which were used in the ultimate analysis of member control.

Initial data processing yielded the following outputs:

1. DCU level indicators of member funds, member control, and co-op performance.
2. DCS level indicators of member funds, member control, member usage, and member satisfaction.

Subsequently factor analysis was performed to reduce the number of indicators of member-control, member-usage and member-satisfaction. Correlations were estimated to establish relationships among these indicators; multiple regressions were performed on the DCS level data and LISREL modelling was carried out. The data at the DCU level was analysed and interpreted

based on the means and standard deviations. No sophisticated statistical analysis was carried out for want of a sufficiently large sample size. Each of the indicators was examined in detail, and the findings were summarised.

## **2.5 Research Administration**

### 2.5.1 Field Data Collection

A team of two trained research investigators was used to collect both hard data from the DCS and responses to INS 3. In case of one DCU, the respondents were invited to IRMA for a two day workshop, where the objectives of the research were explained in Gujarati and administration of INS 3 was done at IRMA itself. Sufficient care was taken to see that all the respondents understood the items in INS 3 before they filled in their responses. Care was also taken to see that respondents did not get influenced by the responses of others. Only clarifications were offered in the session on each item. No discussions on these items were entertained. Aspects related to the capital and control were explained prior to the session.

### 2.5.2 Data Processing

Packages developed by IRMA for the earlier study were used for the initial data formatting and processing. Subsequent analysis was carried out on SPSS PC+ and LISREL7.

### 3 The Setting

#### 3.1 The State of Gujarat

This section intends to put the locale in perspective. It provides some background information about the State of Gujarat and the structure of dairy co-operatives. The state of Gujarat was formed in the year 1960 out of the regions of the bilingual state of Bombay. The state is broadly divided into the regions of Saurashtra, (which formerly had around 200 princely states), Kutch (which is sparsely populated and poorly endowed with resources), and the regions classified under the North, Central, and South Gujarat.

#### 3.2 Dairy Co-operative Movement in Gujarat

Gujarat has been widely regarded as the bastion of the co-operative movement. The success of the co-ops in the dairy sector in Gujarat and the sugar sector in Maharashtra has been well documented and researched. There have been streams of literature looking at the social formations of these two states which seems to have led to the formation of a strong culture of collective action. There have also been studies which have looked into the design aspect of co-operatives in Gujarat and how they succeeded because of the internal systems that they have developed over the years. A large body of literature on these strands exists and it is not our intention to do an exhaustive literature review on these lines. The dairy co-operative movement in Gujarat is now fifty years old. It started with the setting up of the Kheda co-operative and was later expanded first to other parts of the state and subsequently, to rest of the country under the massive Operation Flood Programmes.

##### 3.2.1 Anand Pattern

The Gujarat dairy co-operatives were pioneers in setting up a model successful dairy programme, which incorporated all the functions of value addition to the raw material that was pooled on a co-operative basis. The style of organisation of co-operatives on the lines of Gujarat has been rightly called the *Anand Pattern* - named after the town in which the processing plant of the co-operative was set up.

The essential feature of *Anand Pattern* is in integrating all the important functions of value addition to raw milk. Towards achieving this, the co-ops are organised as a three-tier structure. The village level primary co-op or DCS collects or pools milk from the members. Milk so collected from each of these DCSs is supplied to the district-level union (DCU) which undertakes the task of processing the milk and converting milk into milk products. The DCUs, in turn are members of a state-level federation which undertakes to market these products to the ultimate consumer



through a common brand name. The milk producers are members of the DCS, all the DCSs in a district are in turn members of the DCU, and all the DCUs in a state are members of the federation. Even the control of each of these structures follows the flow - the Chairmen of DCSs are members on the General Body of the DCU who elect the Board of Directors from amongst themselves. Similarly, the Chairmen of the DCUs are members on the General Body of the federation.

While the Kheda co-operative was established in 1946, there were efforts to replicate this model in other parts of Gujarat also. As a result of such effort, the Gujarat Co-operative Milk Marketing Federation (GCMMF) with a membership of six DCUs, was set up in 1973. The Federation was established essentially in order to avoid unnecessary and perhaps unfair competition among the DCUs and to give proper direction to the dairy industry in Gujarat. Over the years, more DCUs have joined GCMMF. Currently it has 12 DCUs as its primary members and the Gujarat Dairy Development Corporation (GDCC) - a Government of Gujarat undertaking - as its associate member.

GDCC manages dairy development projects in the districts of Kutch, Surendranagar, Bhavnagar, Junagadh, Amreli, Jamnagar and the Abad Dairy Project in Ahmedabad by organising milk procurement through the co-operatives and processing through the dairy units set up in each of these districts. The dairy industry is still weak in these districts and yet to reach a commercially viable stage. As soon as these dairies reach a commercially viable stage, they would join GCMMF as full members.

### 3.2.2 GCMMF: An Overview

GCMMF is India's largest food products marketing organisation. It is a state level apex body of milk co-operatives in Gujarat which aims to provide remunerative returns to the farmers and also serve the interest of consumers by providing quality products which are good value for money. As mentioned earlier, it has 12 DCUs as members, and GDCC as an associate member. In 1994-95, it covered 1.74 million producer-members belonging to 9205 DCSs. The milk handling capacity of the DCUs which were members of GCMMF was 4.9 million litres per day; the milk collection in 1994-95 was 9,856 million litres with a daily average of 2.7 million litres. The milk drying capacity of the DCUs was 450 Mts per day; the cattlefeed manufacturing capacity in the seven plants was 1450 MTs per day. The turnover of GCMMF in the last few years is as follows:

**Table 3.1: Turnover of GCMMF Over the Years**

<b>Year</b>	<b>Rs (million)</b>	<b>US \$ (million)</b>
1990-91	7,150	400
1991-92	10,040	440
1992-93	9,790	325
1993-94	9,890	330
1994-95	11,140	355

GCMMF sells its products under two brand names, namely AMUL and SAGAR. It has a wide product range consisting of *milk* (Amul Shakti - Standardised Milk, Amul Gold - Full Cream Milk, Amul Taaza -Toned Milk), *milk powders* (Amulspray Infant Milk Food, Amul Whole Milk Powder, Sagar Skimmed Milk Powder, Amulya Dairy Whitener, Amulspree Instant Milkmaker), *butter* (Amul Butter), bread spread (Amul Lite), cheese (Amul Processed Cheese, Amul Cheese Spread), *ghee* (Amul Pure Ghee, Sagar Pure Ghee), *cocoa products* (Amul Chocolates, Nutramul Malted Milkfood), *ice cream* (Amul Ice Cream), and *ethnic sweets* (Amul Shrikhand). It sells these products through an extensive marketing network covering 200,000 outlets in almost every city and town in India.

It is important to state here, that GCMMF is the largest co-operative federation in the country and is widely considered as a successful model of co-operation in India. The four DCUs included in the study were all members of GCMMF. Three of them were the original members of GCMMF and the fourth DCU joined later. Details about the DCUs included in the study are given in Section 4.

## 4. Sample Co-operative Characteristics

### 4.1 The Dairy Co-operative Unions

Four DCUs were covered in this study. All the four DCUs had milk processing plants and undertook the essential services of milk procurement and processing, supply of cattlefeed and provision of Veterinary and Artificial Insemination (AI) services. The DCUs represented large and small Unions as well as old and young Unions.

#### 4.1.1 Kheda District Milk Producers' Co-operative Union Ltd, Anand (Amul Dairy)

The Kheda Union is popularly known as Amul after the name of its dairy and is the oldest dairy co-operative in the state. Amul had inspired not only the establishment of other dairy co-ops in Gujarat but was also a model for launching the Operation Flood programme which heralded the White Revolution in the country. Established in December 1946 with two DCSs and 250 litres of milk per day, Amul now collects and processes over 900,000 litres of milk per day in the peak season (November-February) from 954 DCSs owned by 534,000 member farmers. Over the years, Amul developed indigenous technologies for several milk products for the first time in India, besides contributing the famous *Anand Pattern* for organising dairy co-ops in the country. It has also lent the AMUL brand name to GCMMF so that products of other DCUs in the state could also be sold under a common brand. Amul produces the full range of the products handled by GCMMF (except ice cream) and is also a major contributor to the National Milk Grid. The turnover of Kheda DCU in the year 1994-95 was Rs. 3,500 million.

#### 4.1.2 Valsad District Co-operative Milk Producers' Union Ltd. (Vasudhara Dairy)

Vasudhara is one of the younger members of the GCMMF. It became the full member of GCMMF in early 1990s. Though established in 1971, Vasudhara Dairy became an independent processing unit only some time in 1982, till which time its processing facilities were managed by GDDC. Compared to other districts in the sample, Valsad is a small district and more than half of its area is resource poor. Still, the performance of the DCU on all fronts has been quite satisfactory. In 1994-95, Vasudhara Dairy had procured and processed 33 million litres of milk from 50,982 members belonging to 419 DCSs. Most of its procurement was sold as liquid milk in different towns and cities of the district. The turnover of Valsad DCU in 1994-95 was Rs. 410 million.

#### 4.1.3 Vadodara District Co-operative Milk Producers' Union Ltd., Vadodara

The Vadodara Union was established in 1957. It has a processing capacity of 250,000 litres per day. In 1994-95, it procured and processed 94 Million litres of milk from 158,116 members belonging to 935 DCSs. Vadodara Dairy is unique amongst all the DCUs of Gujarat. It is the only

DCU producing ice-cream. It also specialises in producing ethnic sweets. As of now, Vadodara produces Amul and Sugam brands of ice-creams. It also produces other milk products being marketed by the GCMMF. However, a major part of its milk is sold in liquid form within the Vadodara district itself. In the year 1994-95 Vadodara DCU had a turnover of Rs. 920 million.

#### 4.1.4 Mehsana District Co-operative Milk Producers' Union Ltd, Mehsana (Dudhsagar Dairy)

Mehsana Union as of now has the largest milk processing facility in the country. It is significant to note that this DCU has been able to achieve this status in spite of being located in a region which is poorly endowed with resources. Established in 1960, the quantity of milk collected and processed in the DCU's Dudhsagar Dairy was 250 Million litres of milk in the year 1994-95. This milk was collected from 292,800 members belonging to 920 DCSs. The Dudhsagar Dairy all the products, excepting cocoa products and ice cream, being marketed by the GCMMF. It is also an important contributor of milk to the National Milk Grid. In 1994-95, Mehsana DCU had a turnover of Rs. 2,910 million.

Table 4.1 gives some key indicators of each of the DCUs for the latest year (1994-95)

**Table 4.1: Important Indicators of Sample DCUs (1994-95)**

Item	Kheda	Valsad	Vadodara	Mehsana
Number of DCSs	954	419	952	1,020
Number of Members in DCSs	532,670	50,982	158,116	292,800
Milk Collected ('000 Kgs)	229,210	33,644	51,875	257,222
No of AI Centres	827	130	224	371
AI Cases	672,852	19,043	26076	225,209
Sale of Cattlefeed (MTs)	144,161	13,755	25657	86,142
Share Capital (Rs in '000)	23,543	6,636	6,933	42,050
Net Worth (Rs. In '000)	530,071	32,378	81,762	185,524
Capital Employed (Rs. in Million)	2,109	942	244	1,313
Net Fixed Assets (Rs. in Million)	1,121	50	81	1,58
<b>Per Society Averages</b>				
Members	558	121	166	287
Milk Collection ('000 Kgs)	240.26	80.3	54.49	252.18
Sale of Cattlefeed	151.11	32.83	26.95	84.45
Share Capital	24.68	15.84	7.28	41.23

#### 4.2 The Capital Structure of DCUs

The DCUs raise funds from their members, state and national level apex institutions and financial agencies. The DCUs raise capital from their members in the form of share capital. In addition, capital is internally generated by ploughing back of profits by creating reserves. The DCUs have also been borrowing from the DCSs in the form of deposits and debentures. The face value of

each of the share which the DCS has with the DCU is Rs.1,000 each. The DCSs in turn collect share capital from their primary members. In case of the DCSs the face value of shares issued to the members is normally Rs.10.

Since the DCSs do not undertake any complex activity the necessity for them to generate capital from the members is limited. However, it is not the case with the DCU. Since all the processing facilities are usually owned by the DCU it is necessary for the DCU to have a strong capital base.

It is well documented in the co-operative literature that there is a strong tendency to disburse profits in the form of patronage benefits rather than retain profits for further investments. This stems out of the peculiar nature of residual claims which the co-ops have wherein the members have a right on residual claims on current income but no residual claims on liquidation. This feature is essentially built in, to take care of the principle of open membership. Similarly the principle of limited return on capital - which most of the co-ops have been following for a long time essentially because of legal requirements - does not encourage the members of the co-ops to put in more money in the form of share capital. Another reason why a co-op would tend to show a high price for the produce procured by paying a hefty price differential is the consideration of taxation. The price differential paid as procurement is tax deductible unlike dividends on share capital which is taxable in the hands of the DCU. Both these aspects have been documented (Phansalkar and Srinivasan, 1992a and 1992b; Agrawal, 1992).

This being the case, the co-ops tended to look at other innovative instruments through which they have raised the necessary funds. In case of DCUs in Gujarat, they tended to raise voluntary deposits from DCSs and also issue debentures with an attractive interest rate so that the DCSs can see this as a good investment opportunity to deposit surplus funds rather than as a compulsory appropriation of profits. In achieving these targets of capital generation, the DCUs have resorted to check-offs from payments of patronage benefits by seeking the consensus of the membership at large, through resolutions at the AGMs. It becomes evident that over a period of time DCUs have designed more instruments of generating capital from the members. In case of the DCUs included in this study, all of them have been resorting to generating capital in the form of either debentures or deposits or both. Some had also consciously increased the stakes of the DCSs by collecting share capital contribution on a regular basis.

The share capital is refundable only on withdrawal of membership. Though withdrawal of membership might be more often resorted to by individual members at the DCS level, withdrawal of a DCS from the DCU is a very rare phenomenon. Therefore, we could see that share capital

and deposits withdrawable on termination of membership as a much more permanent source of capital in the DCUs than in the case of the primary co-ops.

Apart from share capital contribution, the DCUs have also been generating ample internal reserves. Some of the reserves are statutory in nature - the law states that 25% of the declared profits of a co-op should be transferred to a reserve fund. Some of the reserves were created voluntarily. The members of the DCUs are not residual claimants of these moneys.

In addition to the above categories of funds, there are other forms of member-funds available to the DCUs. It can be seen that a significant portion of the member-funds available to each DCU was related to its procurement dues. While the DCSs paid their members either twice a day, daily or on a weekly basis, the DCUs paid the member DCSs more infrequently. This necessarily becomes a source of working capital provided by the member DCSs to its DCU. It can be seen that most of the DCUs had this float built into their payment structure. This was one more important source of member funds for the DCUs.

## 5. Analysis of Society (DCS) Level Data

This section relates to the analysis of data collected from the respondents from the DCSs, through the instrument INS 3. The section is organised as follows. In Section 5.1 we have carried out factor analysis on member control, member usage and member satisfaction. Correlations using the entire sample have been examined in section 5.2. The discussion on the multiple regression is detailed in section 5.3. Section 5.4 discusses the results of the causal path modelling carried out using LISREL.

### 5.1 Factor Analysis of INS 3 Data on Control

**INS 3** had 14 items related to member control, four items related to satisfaction, and three items related to member usage. Factor analysis was performed separately on each of these three groups of items to identify the respective common underlying factors.

#### 5.1.1 Member Control

Three factors emerged from the analysis of the data on member control (Table 5.1). These factors were labelled as **MCPER**, **MCRU** and **MCOC**. It can be seen that decisions taken periodically - in the AGMs - are all loaded on Factor 1. Hence it is labelled **MCPER** (Member Control through Periodic decisions). All items of control related to routine transactions with the DCUs are loaded on Factor 2, and hence it was labelled **MCRU** (Member Control through Routine transactions). Items of control related to decisions made occasionally are loaded on Factor 3 which was labelled **MCOC** (Member Control through Occasional decisions). The details of the individual item loadings (scores) are given in Table 5.1.

Though largely similar, these factors differed marginally from the factors that emerged in the earlier study carried out by IRMA in the case of multico-ops. In the earlier study (Agrawal et. al., 1994), the control factors that emerged were essentially control through elections labelled as MC1, control through operations labelled as MC2, and overall control labelled as MC3. The control items were loaded slightly differently in case of the dairy sector possibly due to the differences in the member interactions with the co-op.

Unlike multico-ops, where the member interaction with the co-op was not as frequent, the member interactions with a dairy co-op are on a daily basis. It can be seen that almost all the items loaded on the Factor 1 (**MCPER**) are the ones which are normally discussed in the AGM rather than at other forums. The items loaded on Factor 2 (**MCRU**) are related to the routine transactions such as fat testing procedures, mobilising funds, complaints on field staff and on

overall control. The surprise item in this factor is mobilising funds, but the explanation for this is obvious. Of late, mobilisation of funds has been through deduction in milk payments and the respondents are more conscious of the fact that such mobilisation is done week after week.

**Table 5.1: Member Control  
Rotated Factor Matrix (Varimax Rotation)**

Item	Description	Factor 1: MCPER	Factor 2: MCROU	Factor 3: MCOG
2111	Participation in elections	-0.07388	0.00268	<b>0.77933</b>
2211	Amendment of bye-laws	<b>0.79027</b>	0.03788	-0.04684
2212	Distribution of profits	<b>0.79712</b>	0.04173	0.01131
2213	Decisions regarding budgets	<b>0.81227</b>	0.03149	-0.17706
2214	Decisions on fixing milk price	<b>0.66791</b>	-0.04369	0.44564
2215	Decisions on cattle feed price	<b>0.65593</b>	0.03110	0.32107
2216	Capital expenditure decisions	<b>0.65344</b>	0.13782	-0.38766
2217	Decisions on fat testing procedure	-0.00703	<b>0.75392</b>	-0.27737
2218	Decisions on mobilising funds	0.06057	<b>0.68144</b>	0.20907
2219	Decisions on location of facilities	<b>0.72828</b>	-0.00885	0.18903
2220	Appointment of Managing Director	0.33120	-0.24851	<b>0.65559</b>
2221	Decisions on milk truck timings	<b>0.72050</b>	0.07798	0.16165
2222	Complaints on staff of DCU	0.02609	<b>0.72814</b>	-0.11232
2230	Overall control	0.08719	<b>0.80246</b>	-0.6159

This is one of the possible reasons why this element of control has got itself clubbed with the items which are of routine nature. The items loaded on Factor 3 are related to the occasional decisions such as elections and appointment of Managing Director. Unlike the multico-ops where its Chief Executive Officer (CEO/Secretary) is changed more frequently, in the case of dairy co-ops the CEO of a DCU is changed only occasionally. Therefore, the item related to the appointment of CEO had loaded with other operations decisions in the previous study whereas it loaded along with the elections in the present study.

#### 5.1.2 Member Usage

All the items of usage were loaded on a single factor. We have labelled this factor as **Usage**. This was consistent with our earlier findings in the case of multico-ops.

#### 5.1.3 Member Satisfaction

Similarly all the items on member satisfaction were also loaded on to a single factor **Satisfaction**. This was also consistent with our earlier findings on multico-ops.

### **5.2 Correlations: Overall**



Table 5.2 presents the correlations between eight variables - total funds of the DCS with the DCU including share capital, withdrawable deposits, debentures, deposits and procurement dues (**FundP**), share capital of the DCS with the DCU (**Share**), the age of the DCS (**Age**), with the five factors identified earlier, namely, **MCPER**, **MCRou**, **MCOC**, **Usage** and **Satisfaction**.

**Age** has significant positive correlations with **FundP**, **Share**, **MCOC** and **Satisfaction**. It is to be noted here that **Age** as a variable which has been included only in this study, essentially because the relations between the DCS and DCU could be determined by the length of their association. Also, unlike the relations between the DCS and individual members, the ease of exit or entry of a DCS from the DCU is not the same. Therefore, the principle of "open membership" is rarely applicable in this case because of the nature of relationship between the DCU and the DCS.

**Table 5.2: Individual Level Correlation Coefficients  
All DCUs (131 respondents)**

Item	AGE	FundP	SHARE	MCPER	MCRou	MCOC	USE	SAT
AGE	1.00							
FundP	<b>0.62*</b>	1.00						
SHARE	<b>0.45*</b>	<b>0.60**</b>	1.00					
MCPER	0.02	-0.13	<b>0.22**</b>	1.00				
MCRou	-0.00	<b>0.23**</b>	0.04	0.00	1.00			
MCOC	<b>0.40*</b>	-0.04	-0.16	<b>0.22*</b>	-	1.00		
USE	0.01	-0.01	-0.04	0.15	<b>0.37**</b>	-0.04	1.00	
SAT	<b>0.19*</b>	0.17	0.16	<b>0.29*</b>	0.00	0.14	<b>0.45*</b>	1.00
Mean	21.54	198643.81	26370.50	2.28	4.00	1.95	4.82	4.06
SD	10.56	228401.96	37770.72	0.88	0.84	1.22	0.39	0.77

\* Significant at 5% level

\*\* Significant at 1% level

The relationships of **Age** with other variables listed above suggest that the money that a DCS parks with the DCU is a function of how long the DCS has been associated with the DCU. This is fairly obvious as the co-ops in Gujarat have been following a policy of check-off against patronage benefits being paid at the end of the year. These check-offs have been retained in the DCUs in the form of deposits and share capital. This is represented in the growth rate of Q2 and

Q3 capital which essentially represents the growth in deposits (both withdrawable and non-withdrawable), debentures and share capital. The average rate of growth of these have been faster than other forms of capital in all the co-ops. The longer a DCS is associated with its DCU, the stronger this relationship should be. The correlation with **MCOC** essentially means that the older the DCS, the greater it has a tendency and confidence to apply control through elections and appointment of Managing Director. The relationship with **Satisfaction** may be interpreted as the longer the DCSs are associated with the DCUs, the more satisfied they are with the with the DCUs. This possibly stems from the confidence that occasional control can be applied if they are dissatisfied with the DCUs and it would work to the satisfaction of the DCSs.

**FundP** has significant positive correlations with **MCRou** and **Share**. The relation between **FundP** and **Share** need not be elaborated. Share Capital is a component of the **FundP** and it seems to be growing in tandem with the other components of **FundP**, namely, deposits, debentures and procurement dues. It is also seen that **FundP** has significant positive correlations with **MCRou** which is control through routine transactions. It essentially means that the greater the direct investment by the DCSs, the greater control they apply through regular routine transactions.

**Share** had significant and positive correlations with **MCPER**. This suggests that the tendency to attend and actively participate in the periodic decisions (AGMs) is related to the share capital invested in the DCU. The fact that the financial stakes of the DCS increases with time is established earlier. This reinforces the fact and adds the dimension that as time goes by and financial stakes of a DCS in a DCU increase, the tendency to control through active participation in the periodic decisions also increases.

**MCPER** had significant and positive correlations with **MCOC** and **Satisfaction**. Essentially what this relationship suggests is that the regular attendance in AGMs also gives the members a sense of involvement in the affairs of the co-op and they would have a tendency to take active interest in control through occasional decision making such as electing the board members or appointing the Managing Director. It is interesting to note that the participation in periodic decision making is not significantly related to **Usage** of the co-op's services.

**MCRou** had significant and positive correlation with **Usage** and negative correlation with **MCOC**. This essentially means that the greater the usage of the services availed from the DCU, the greater the sense of control DCSs have over routine matters. However, it is to be seen that

control through routine matters is negatively associated with decisions resulting in the change of the Board or Managing Director. This essentially would mean that if routine matters are not resolved, it would result in a sense of helplessness and despair. In such circumstances, the members would resort to changing the decision making structure through their participation in occasional decisions rather than resorting to the route of day to day resolutions.

**Usage** had significant and positive correlations with **Satisfaction** which is self-explanatory.

### 5.3 Multiple Regression

While correlation results explain the associative relationships between variables, regression analysis enables to establish the causal path - charting the path from those variables which explain the variance in other variable(s). The results of the multiple regression analysis are given in Table 5.3. As in the earlier study, the ultimate dependent variable **Satisfaction**, was regressed on the five remaining variables.

**Table 5.3: DCS Level Multiple Regressions**

$$\text{SATISFACTION} = -0.60 + 0.48 \text{ Usage} + 0.27 \text{ MCPER} + 25 \text{ FundP} - 0.16 \text{ MCROU}$$

$$\quad \quad \quad (-0.83) \quad (6.08) \quad \quad \quad (3.61) \quad \quad \quad (3.20) \quad \quad \quad (-1.99)$$

Adjusted R<sup>2</sup> = 0.32      F = 15.80\*\*

$$\text{USAGE} = 4.33 + 0.26 \text{ MCROU}$$

$$\quad \quad \quad (26.22) \quad (3.04)$$

Adjusted R<sup>2</sup> 0.06      F = 9.21\*\*

\*\* F Values significant at 1%

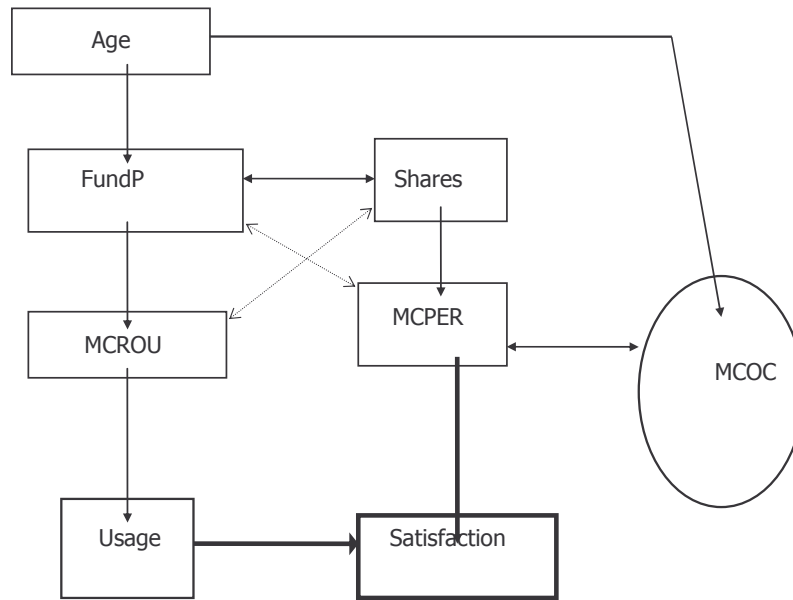
It can be seen from Table 5.3 that variance in **Satisfaction** is strongly explained by **Usage**, **MCPER** and **FundP**. Satisfaction is negatively associated with **MCROU**. On the other hand, **Usage** is almost solely explained by **MCROU** though the variance explained is small. Interestingly, **Age** and **Shares** do not find a place in the function, possibly because **FundP** seems to be a good enough surrogate for these two measures. It is interesting to note that even in our earlier study on multico-ops, MC2 - the control measure for operational control - had a negative association with satisfaction. It was then interpreted that this form of control is used when members are less satisfied. The same reasoning might hold good in this case also. A surprise deletion in the function is that of **MCOC** which has been an outlier in the correlations also. This essentially means that the elections do not have any bearing on the usage and satisfaction of the DCSs at all. If we look at the correlations, it is clear that **MCOC** is related only

to **Age** and **MCPER**, both of which relate more to confidence and conviction with which the DCSs participate in the affairs of the DCUs.

#### 5.4 LISREL

The model given in Figure 5.1 was developed using the correlation coefficients arrived in the previous section. These were tested using LISREL7.

**Figure 5.1 DCS Level Model**



The above model had a satisfactory adjusted goodness of fit index of 1.000 and a root mean square residual of 0.000.

The total (direct and indirect) effect of **Age** on **FundP** and **MCOC** was significant. Similarly, the effect of **FundP** on **MCROU** and of **Share** on **MCPER** was significant. The direct and indirect effect of **FundP** and **MCROU** on **Usage** was significant. The direct and indirect effect of **FundP**, **Share**, **MCPER** on **Satisfaction** was also significant. The outlier in this model is **MCOC** which was related only to **Age** of the DCS and to **MCPER**. Based on the above, two plausible paths emerge - **Age** influences **FundP** which in turn influences **MCROU**, **Usage** and **Satisfaction**. The second path being **Share** (which is a part of **FundP**) influences **MCPER** which in turn influences **Satisfaction**. These paths are consistent with the relationships discussed earlier.

It may be noted that **FundP** is negatively related to **MCPER** and **Share** is negatively related to **MCROU**. This essentially means that if the composition of **FundP** is predominantly through **Share**, then it is more likely that the control measure that will be used will be **MCPER** - control through periodic decisions - the decisions essentially taken in the AGM. If **FundP** consists of other funds like deposits, debentures and dues, then the control measure most likely to be used is **MCROU** - control through day to day operations. It might be interesting to note that the decisions that are taken in the AGM are closely linked to investments in shares and the factor of operational control is related to the direct investment of the DCS (**FundP**) in the DCU, unlinked to **Share**. This finding is also consistent with our earlier findings in the multico-op study that Share Capital is lower down in the quality of capital and voluntarily contributed capital such as deposits was associated more with control and performance.

These results and the results of the analysis at the Union level will be examined and synthesised in Section 7.

## 6 Analysis of DCU Level Data

In this section we analyse the data collected from the DCUs. It may be noted that in the earlier section, when we discussed member funds, we were essentially relating the funds invested by each of the DCSs participating in the research rather than with the total member funds generated by the DCUs. Similarly, since the analysis was essentially done at the respondent (DCS) level, factors such as the performance of the DCU, growth and other details were not built in. In this section we use both INS 3 data as well as the financial data of the DCUs. Though we carried out some statistical tests, we have not used them in the analysis essentially because of the small sample size. The raw data gives interesting insights into the capital mobilisation strategies of each of the DCU and its relation with the control variables. In order to enrich the interpretation, we have obtained clarifications from the respective DCUs on the practices they followed as regards the fund mobilisation strategies.

This section is organised as follows. The analysis of indicators from INS 3 and DCU level indicators was done separately for each DCU. We also drew a tentative path on the relationships of variables for each DCU. It is to be noted here that these paths are based on the interpretation of the raw data and not on the basis of any statistical tests. We try to align these paths with that of the DCS level model given in Section 5. Data on basic financial indicators are given in Table 6.1. Table 6.2 has the mean scores of each of the DCUs on the INS 3 variables.

### 6.1 Analysis of Kheda DCU

Table 6.1 summarises the financial indicators for each of the DCUs. It may be noted that in the case of the Kheda DCU we have taken the data for only 9 years and left out the data pertaining to the tenth year (1994-95). It was essentially because there have been very large investments undertaken by the DCU in 1994-95 which tended to distort the growth rates of the earlier years. For instance, if all the ten-years data were to be taken, the proportion of member funds to total capital employed would be only 49% as against 51% if a 9 year data were to be taken. Similarly the growth rate of member funds for a period of ten years would go down to 7% as against an 8% average growth rate the DCU has been having in the past.

It can be seen from Table 6.1 that the Kheda DCU has a significant contribution of member funds in the total capital employed. The composition of member funds is predominantly derived from withdrawable deposits and debentures raised from the DCSs. The proportion of share capital in the total member funds is quite low at 4% and is also growing at a very low rate. In fact, the strategy of the Kheda DCU is evident by the growth rates of each of the components of

member funds. The fastest growth is in withdrawable deposits at 18%. The DCSs are required by the statute to park their surplus funds and reserves in approved organisations, which usually is the District Co-op Central Bank (DCCB). The Kheda DCU offers higher interest on deposits which makes it attractive for the DCSs to park their funds with the Union rather than the DCCB. In addition, the Kheda DCU has been generating money through debentures which has also been growing at an annual rate of 8%. Debentures form around 16% of the member funds. An analysis of the data pertaining to the 9th and 10th years indicates that there is a shift in the thrust of the Kheda DCU from generating deposits to generating more money through debentures. It is understandable given that the Union has been making large investments in the last two years and needs a more permanent source of capital.

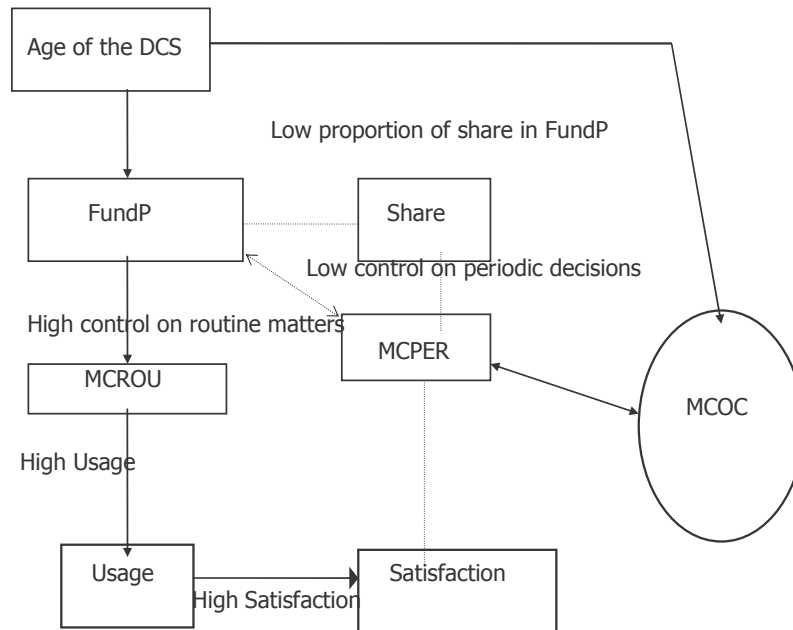
It may be interesting to see a few more figures pertaining to the Kheda DCU - the net worth is growing at a faster rate of 9% compared to the member funds which is growing at 7%. This is essentially because, net worth includes grants which the DCU has received under the Operation Flood and other programmes. In the last year (i.e., 1994-95) there have been very significant investments made in the DCU for its latest expansion project. The project has been predominantly financed by external borrowings which brings the contribution of member funds in the total capital employed to 27% from an average of 51%. But what is interesting is that enough ground seems to have been built up in the last ten years for undertaking this leap-frog operation. The path which the Kheda DCU might have taken is given in Figure 6.1

On the control variables, it can be seen from Table 6.2 that the Kheda DCU seems to have a high mean score of 4.21 on **MCROU** - control on routine operations. It has fairly low scores on **MCPER** - control through periodic decisions, and **MCOC** control through occasional decision making such as electing a new board. It has a high score on **Usage** and **Satisfaction**. The path of the Kheda DCU follows the path represented in the global level model, where sources of member capital other than shares have played a significant role in the growth of the DCU and have resulted in members (DCSs) having a sense of control through routine matters - leading to a high usage and satisfaction.

The data relating to the Kheda DCU supports the first hypothesis that the greater the member funds, the higher would be the control, usage, satisfaction and growth. However, the second hypothesis is not supported by the data. This DCU has a low percentage of Q1 Member Funds and highest proportion of Q3 Member Funds consisting of withdrawable reserves, accumulated profits and withdrawable deposits. This partly supports our ranking of funds in the study on multico-ops - a high proportion of debentures, withdrawable deposits and a low proportion of

member share capital. However, the proportion of short term funds (Q4) in all the DCUs is around 30% and this seems to be a feature peculiar to the dairy co-ops.

**Figure 6.1: Path of Kheda DCU on Control Factors**



Implications of the control scores might mean that because of a well oiled routine system - members rarely use **MCOC** and **MCPER** as control measures. If they are dissatisfied with the routine matters, then there is a likelihood of using the other control measures. The low score on **MCPER** could have stemmed from the low sense of involvement the DCSs might have had in the recent expansion plans of the Kheda DCU. While the members are satisfied with whatever they are getting from the DCU, they think that they can influence only those matters pertaining to routine aspects and not the matters of strategic concern. It is also possible that this stems out of the sheer size of the DCU, where each DCS possibly feels that it is a very small player in the overall sense of events and as long as the routine is fine, the DCU would take care of its interests as it has been doing in the past half a century. Similar explanation is offered for **MCOC**.

**6.2 Analysis of Valsad DCU**

It can be seen from Table 6.1 that Valsad DCU has the highest proportion of member funds to capital employed. This is also the fastest growing DCU on all counts - a growth of 25% per



annum in capital employed, a 30% growth in gross fixed assets and a 23% growth in the sales. The Valsad DCU is also the fastest growing in terms of long term capital and net worth. This confirms our third hypothesis that higher the growth in member funds, the greater would be the rate of growth of the co-operative. However the Valsad DCU presents an interesting case as regards member control. It is fairly low on all the three factors of control (Table 6.2). The control factors **MCPER** - control through participation in AGMs, and **MCOC** - control through elections are as low as 1.69 and 1.06 respectively on a scale of five. In case of **MCOC** the members were almost unanimous with a low score as indicated by a low standard deviation. This DCU gets the lowest score on **Usage** amongst all the DCUs, though, on an absolute scale, the score is high. The reason for the low score on **Usage** is because this DCU does not discourage the DCSs from undertaking local sales. The **Satisfaction** score of the Valsad DCU is also the lowest amongst all the DCUs.

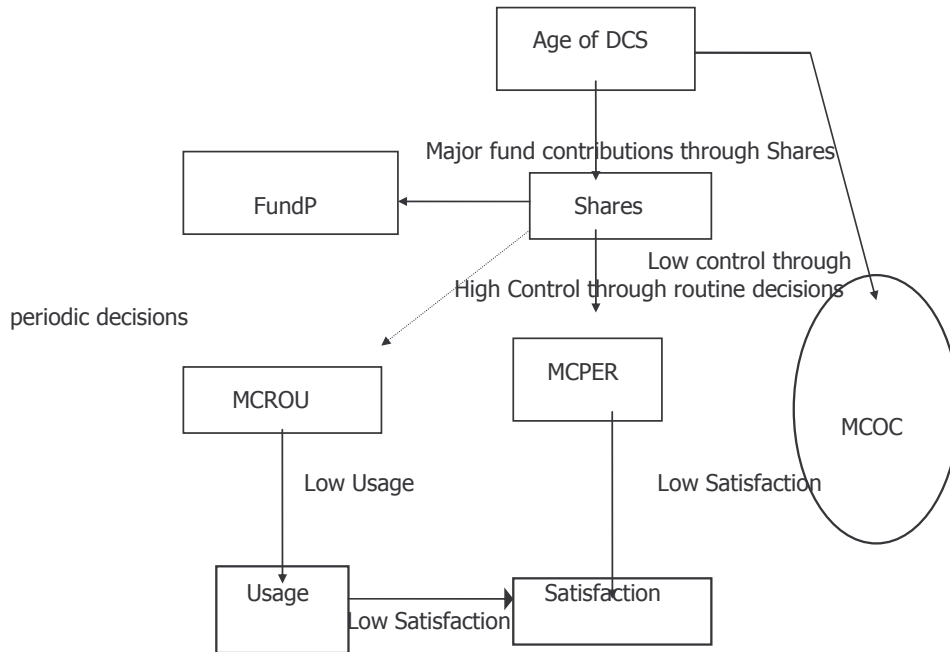
The fund raising strategy of the Valsad DCU has been through check-offs from milk payments. Most of these check-offs are straightaway converted into shares - reflected by an annual growth in share capital at a whopping rate of 28%. In fact, Valsad's performance on the deposit front has been sporadic - there are no withdrawable or non-withdrawable deposits belonging to the members in most of the years. But Valsad's growth has been impressive on the non-withdrawable deposits front which grew at the rate of 19%.

The Valsad DCU is an outlier compared to the other three DCUs on one more count. It does not have capital grants at all. The DCU has shown a great tendency to generate capital from its members for all its expansion programmes and has resorted to external borrowings on a very limited scale. The total capital employed by this DCU is low in absolute terms - Rs.40.66 Million on an average while it is higher by a factor of four to ten in the other DCUs. This essentially means that though the figures of growth are high, the DCU started with a very low base, and continues to be the smallest DCU in our sample. It should also be noted that the organised dairying in the Valsad district was started by GDDC in 1971 and the Valsad DCU was established in the early 80s as against the other DCUs in the sample which were started before 1960.

The path which the Valsad DCU might have taken on the member control factors is given in Figure 6.2. The bold lines represent stronger associations and the broken lines represent weak associations in the path. It can be seen that this DCU seems to have used the second path where shares are directly related to the other variables. This essentially means that the DCU has higher share capital as a part of **FundP**. Higher **Share** leads to lower control through **MCPER** leading to low satisfaction. The share capital is related to the other control measure

**MCROU** in a direction different from **MCPER**. This essentially means that if the members do not have a significant say on periodic decisions, it would tell on routine matters. A high **MCROU** stemming out of lack of adequate opportunities for expression in **MCPER** is bound to cause some frustration which is reflected by a low **Usage** and low **Satisfaction**.

**Figure 6.2: Path of Valsad DCU on Control Factors**



The Valsad DCU represents a highly centralised decision making process. The check-off from the milk payments which are to be decisions of fund raising strategy has been converted into a routine matter. This brings forth an interesting feature in the relations between the DCS and the DCU which is peculiar to the dairy sector. Since the DCS is closely embedded in the federal structure, the path of exit is not simple, unlike in the case of individual members walking away from the primary co-op. Such a strategy might actually prove counter-productive if applied to the members of a primary DCS. The Valsad DCU also represents the case of a "benevolent dictator" - which takes the stand of "I know what is good for you". This might make the co-op successful and might lead the co-op on a strong path of progress, but definitely leaves the members and other constituents of the co-op sulking. It is our guess that the members at the primary level might be highly satisfied by the overall services of the DCU, essentially because it would be giving good services and paying a good price for the milk, but the representatives of

the DCSs definitely do not feel that the DCU is under their control. The path of the Valsad DCU is strikingly similar to a case study we undertook in the Yendagandi multico-op in Andhra Pradesh, where the scores on control factors, usage and satisfaction were in the same direction as that of Valsad. This further enhances the value of our current research.

### 6.3 Analysis of Vadodara DCU

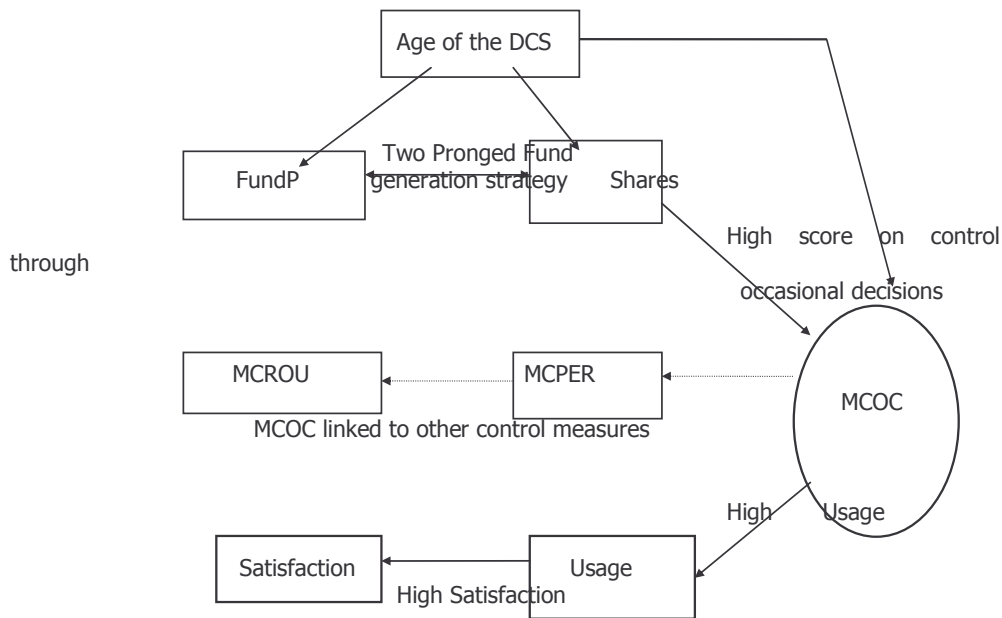
The Vadodara DCU has the lowest member funds as a proportion of total capital employed amongst all the DCUs that we studied. However, the growth of member funds in the past 10 years has been at a faster rate than the other DCUs except Valsad. This essentially means that there has been a greater concerted effort to raise member funds in the recent past as against the strategy adopted in the initial years of the DCU. Of the member funds, the growth of share capital, withdrawable reserves and withdrawable deposits (Q3) have been growing at an even rate of 12 to 14%. This is a case in contrast to the Valsad DCU which concentrated only on growth through share capital and the Kheda DCU which concentrated on other sources of member-funds. Though from Table 6.2 it can be seen that the Vadodara DCU has a very high composition of non-withdrawable reserves at an average of 33% in the 10 year period, it is gradually losing its predominance. In the tenth year, the share of non-withdrawable reserves in the total member funds was only about 22%. This is reflected in the growth rate of non-withdrawable reserves at only 6% in the 10 years which we studied. The strategy of Vadodara has been to get share capital at a faster rate (14% per year) and maintain the growth rates of Q3 category of member funds. We would therefore find in this model that both **Share** and **FundP** have been growing simultaneously.

The impact of this strategy is reflected in the scores which the Vadodara DCU has obtained on control factors (Table 6.2). It has average scores on all the three control factors **MCPER**, **MCRou** and **MCOC**. This DCU does not fall into either of the **Share** or **FundP** paths but actually seems to be negotiating its way through both the paths to **Satisfaction**. The Vadodara DCU has got a fairly high score on both the usage and satisfaction factors. The possible path taken by the Vadodara DCU is given in Figure 6.3.

Unlike other DCUs in the study, the Vadodara DCU has got the highest score on **MCOC** and it seems to be the most powerful mechanism through which the members of DCSs of Vadodara are operating. Though the **Usage** and **Satisfaction** scores are fairly high, the members are not convinced about the control through routine operations. It may be recalled that in analysing the DCS level data in Section 5, we had stated that if members do not think they can control routine aspects, then they would resort to changing the decision making structure itself through

occasional decisions in the form of elections. The observation made there is supported by the data of Vadodara DCU here.

**Figure 6.3: Path of Vadodara DCU on Control Factors**



The Vadodara DCU also presents a case where the members do not seem to feel that they are in control coupled with the fact that the proportion of member funds in the total capital employed is the lowest, thus supporting our second hypothesis that greater member funds results in greater control, usage, satisfaction and growth. We have an example in Vadodara DCU which has a low proportion of member funds, is low on control scores and also has the slowest growth rate amongst the co-ops included in the sample. Its fixed assets have been growing at 8% against a sample average of 12%, and its long term capital is growing at 10% against a sample average of 11%. The only aspect which seems to be growing faster than a couple of other Unions is the sale of output. Though the Vadodara DCU has been in existence for quite some time, its total sales in absolute terms have been very low and have got scaled up only in the past few years.

The data on the Vadodara DCU clearly indicates the change in focus and strategy in the period in which the DCU was studied, compared to the earlier period.

#### 6.4 Analysis of Mehsana DCU

The Mehsana DCU has had an average member fund contribution in the total capital employed at around 34% (Table 6.1). It is low when compared to the DCUs of Kheda and Valsad. It can be seen that the total member funds are also growing at an average rate of 3%, which is the slowest rate of growth of all the DCUs studied. But what is more interesting in case of Mehsana is the pattern of change in the composition of member funds. The fastest growth has been in share capital - at 17% per year. Though this rate of growth is not as high as that of the Valsad DCU, it is very high compared to the Kheda DCU, where the shares grew at only 3%. The other component of high growth is withdrawable reserves, accumulated profits and withdrawable deposits (Q3). Member funds listed under Q4 (temporary dues to the members) actually has a negative growth rate of 5%. This means that the Mehsana DCU, as a strategy has been paying its members faster than the other unions.

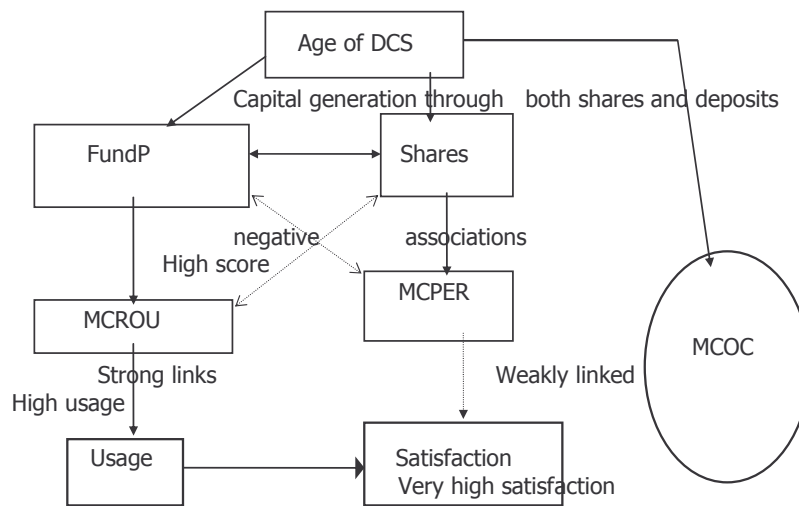
If we look at the data of the tenth year, we will find that member funds as a proportion to total capital employed have reduced to 17%, which is the lowest of all the DCUs studied. It is well known that the Mehsana DCU has been coping with organised competition from the private trade in the last few years. This might have forced the DCU to make faster payments and to step up its investments in the business. This is reflected by a high growth of capital employed in the business at 16% compared to the sample average of 12%. This DCU has been growing at an average rate on all other counts - at about 10% in long term capital, net worth, etc. It is evident from the growth in sales at 14% read with the growth in gross fixed assets at 10% that the energies of this DCU have been spent more on consolidating its position in the market than building up more assets and expanding capacities.

The Mehsana DCU presents interesting relationships on control variables (Table 6.2). The proportion of member funds is low in the total capital employed and therefore according to our hypothesis the Control, Usage, Satisfaction and growth factors should also have been low. However, we find that Mehsana gets the highest score on both **Usage** and **Satisfaction**. It also gets a very high score on **MCROU** - control on routine matters. This essentially means that the DCSs feel that the business is being run well by the DCU. This DCU also gets the highest score on **MCPER**, meaning that the members feel that they can have a say on matters discussed in the AGM. However, the score on **MCOC** is the lowest. An interpretation of this can be that the members do not feel the necessity to exercise control through **MCOC** because they are so satisfied with the day to day operations.

There is a striking similarity between the DCUs of Valsad and Mehsana on this count - both have stressed on shares as a strategy of fund generation and both have a very low score on **MCOC**. The difference is that while the DCSs are satisfied with Mehsana DCU, they are not with the Valsad DCU. This possibly might be because of the age and size of the DCU itself. Because Valsad is a small Union, the DCSs' felt need to participate in the decision making process may be higher and therefore there is a level of dissatisfaction in comparison to the expectations. Whereas in the case of the Mehsana DCU, the internal systems are probably so well established that the DCSs do not possibly feel the need to use election as a tool of control. It is a well known fact that the Mehsana DCU has been dominated by a single Chairman for a long time and he is not only the natural choice of people but also a very well respected leader in the area.

A plausible path the Mehsana DCU might have taken is given in Figure 6.4

**Figure 6.4 Path of Mehsana DCU on Control Factors**



It can be seen from the above figure that the path the Mehsana DCU has taken is essentially through **FundP, MCROU, Usage** and **Satisfaction**. This route is somewhat similar to that of the Kheda DCU except that the Mehsana DCU is also laying quite a bit of emphasis on generating share capital. The Mehsana DCU has not been able to undertake a massive deposit mobilisation activity because it could not obtain the permission of the Registrar of Co-op Societies to allow its member DCSs to place deposits with the Union. Now, we are given to understand that this permission has been obtained and the future growth of capital in the DCU is likely to be in this area.

**Table 6.1: Financial Indicators of Sample Co-operatives  
Ten Year Averages (Rs. in Million)**

Code	Description	All	Kheda #	Valsad	Vadodara	Mehsan a
			11301	11302	11303	11304
	Sales	4820	2223	203	512	1882
910	MEMBER FUNDS	668.73	382	26.40	48.96	211.37
911	MEMBER FUNDS Q1	65.71	21.97	12.03	14.95	16.76
912	MEMBER FUNDS Q2	109.42	83.8	2.25	3.25	20.12
912 a	Share Capital	45.02	19.4	2.25	3.25	20.12
912 b	Non-Withdrawable Deposits/ Debentures	64.4	64.4	0	0	0
913	MEMBER FUNDS Q3	257.15	151.4	-0.72	19.00	87.47
913 a	Withdrawable Reserves	125.58	84.5	-0.72	5.59	36.21
913 b	Withdrawable Deposits	131.57	66.9	0	13.41	51.26
914	MEMBER FUNDS Q4	236.52	124.8	12.93	11.76	87.03
920	LONG TERM CAPITAL	911.8	471.9	22.68	102.46	314.76
930	CAPITAL EMPLOYED	1658.5	765.8	40.66	152.97	699.07
940	NET WORKING CAPITAL	512.17	326.3	6.74	41.23	137.90
951	MEMBER FUNDS/CAPITAL EMPLOYED	0.5	0.51	0.71	0.31	0.34
952	MEMBER FUNDS Q123/ L T CAPITAL	0.545	0.55	0.67	0.37	0.41
953	MEMBER FUNDS COMPOSITION Q1 %	0.06	5.99	44.52	32.67	8.59
954	MEMBER FUNDS COMPOSITION Q2 %	0.22	22.53	7.62	6.42	8.89
955	MEMBER FUNDS COMPOSITION Q3 %	0.4	39.39	-3.87	37.96	42.26
956	MEMBER FUNDS COMPOSITION Q4 %	0.33	32.07	51.73	27.93	40.23
961	LT CAPITAL/CAPITAL EMPLOYED	0.62	0.61	0.51	0.66	0.48
962	NET WORTH/ CAPITAL EMPLOYED	0.22	0.24	0.33	0.35	0.18
<b>FINANCIAL ANALYSIS: TEN YEAR GROWTH-RATES</b>						
971	GROWTH-CAPITAL EMPLOYED	0.12	0.10	0.25	0.12	0.16
972	GROWTH-GROSS FIXED ASSETS	0.12	0.13	0.30	0.08	0.10
973	GROWTH-NET WORKING CAPITAL	0.11	0.11	0.41	0.15	0.12
981	GROWTH-MEMBER FUNDS	0.07	0.07	0.22	0.12	0.03
982	GROWTH-MEMBER FUNDS Q123	0.09	0.09	0.36	0.10	0.08
982 a	Growth - Member Funds Q 23	0.09	0.10	0.20	0.12	0.10
983	GROWTH-LONG TERM CAPITAL	0.11	0.11	0.25	0.10	0.11
984	GROWTH-NET WORTH	0.10	0.09	0.22	0.10	0.10
991	GROWTH: SALE OF OUTPUT	0.13	0.12	0.23	0.17	0.14

# Data for Kheda pertains to 9 years.

**Table 6.2: Means of INS 3 Variables by DCU**

INS 3 Variable	ALL UNIONS		KHEDA		VALSAD		VADODARA		MEHSANA	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
MCPER	2.28	0.88	1.67	0.69	1.69	0.69	2.72	0.37	3.00	0.98
MCROU	4.00	0.84	4.21	1.01	4.16	0.61	3.30	0.79	4.35	0.42
MCOC	1.95	1.23	2.42	0.88	1.06	0.17	3.36	1.12	0.99	0.09
USE	4.82	0.39	4.85	0.44	4.67	0.52	4.78	0.33	4.96	0.14
SAT	4.06	0.77	4.10	0.84	3.52	0.76	4.12	0.74	4.49	0.32
AGE	21.54	10.56	30.84	9.30	12.31	7.32	22.23	8.48	21.12	8.32
SHARE	26370	37771	31019	32519	4517	4362	10001	6684	60456	52613
FundP	198644	228402	424228	281800	88963	53285	54919	46506	230956	207131



## 7 Synthesis

This section is organised as follows. Section 7.1 examines the types of member funds generated by the sample DCUs. Section 7.2 looks at the consequences of member funds, particularly on control. This section draws not only from the data and hard conclusions arrived at in Section 5 and Section 6 but also on the inferences made from our interactions with the functionaries of the DCUs.

### 7.1 Types of Member Funds

#### 7.1.1 Share Capital

The study clearly indicated two distinct strategies of generation of member funds. The first strategy was to generate member funds through raising more share capital. This strategy was adopted both by the Valsad and Vadodara DCUs and to a lesser extent by the Mehsana DCU. The share capital is usually generated through a process of check-offs from the profits or patronage benefits that are to be distributed to the member DCSs. This strategy has several advantages. The first advantage is that it is administratively much simpler. It would not be necessary to convince the Registrar of Co-operative Societies on this count. In fact, the Registrar would not even raise an objection and therefore this would appear to be the most legitimate way of generating a permanent source of member funds. It has a greater advantage in terms of permanence of this capital with the DCU. The only danger in this strategy is that in case a DCU is inefficient in the medium run, the pressure from the members to perform would not be very high. This is because of the way the DCU is positioned in the overall structure of dairy co-ops. The structure does not make the exit easy for the DCSs, which means that withdrawing of the share capital is also ruled out. Since the share capital does not get a fixed return but only a part of the residual claim, the pressure on the DCU to service the share capital is also low. It was for this reason that we had argued in the earlier study that share capital might not be the best source of member funds in the co-ops.

Generating more share capital has also benefits in terms of borrowings from term lending institutions for purposes of expansion activities. The term lending institutions would be unwilling to consider debentures or withdrawable deposits raised from members as part of the net-worth. They would rather add this amount to the debt portion than to equity if they were to calculate the debt-equity ratio.

The effect of this strategy on the DCS is a matter worth examining. The DCS might resort to either pay the members a lower price and make the share capital contribution from retained earnings. In such a case, over a period of time, the DCS would end up having a large amount of reserves and investments not identifiable with the individual members. The alternative would be for the DCS

also to adopt a similar strategy and resort to check-offs from patronage benefits to its individual members and retain it as member share capital. Since the path of exit in case of an individual member is simpler, there is a danger that the capital might erode after a period of time because of the temptation to withdraw this substantial amount and re-enter using the principle of open membership. We found this tendency exhibited in our study on multico-ops. Adequate checks will have to be evolved to overcome this short-term strategic behaviour of the individual members.

#### 7.1.2 Deposits and Debentures

The second strategy of generating member funds seems to be to take the route of generating deposits and debentures. The Kheda DCU has followed this strategy to a very large extent. The DCUs of Mehsana and Vadodara have also had their member DCSs invest excess funds in the form of deposits. However, operationally, this might be a slightly difficult route as evidenced by the experience of Mehsana. The Mehsana DCU has been having problems with objection raised by the Registrar of Co-op Societies to the DCSs investing their surplus funds in the DCU. Traditionally the DCSs are required to invest their funds in the DCCB and not elsewhere. While this is a problem which is routine with the regulatory authorities, this route seems to be a better route to generate member capital. We say this essentially because this route of generation of capital is strongly associated not only with the control factors, but also with the factors of **Usage** and **Satisfaction**. From the vantage point of the DCSs there are advantages in this strategy. They are assured of a decent rate of return on the surplus funds they have invested in the DCU. They also have an additional control mechanism in the sense that they can withdraw the deposits whenever they feel that the Union is not performing to their expectations. This could be termed as temporary withdrawal of financial patronage which is not as drastic as withdrawing the membership. It is also easier to implement even in the three-tier dairy co-op structure.

The only danger in this strategy is from the vantage point of the DCUs. In case the DCUs are embarking on large expansion plans and want the capital to be with them for a long time, then having a large proportion of withdrawable deposits makes their position very vulnerable. The DCUs could overcome this problem by issuing fixed term debentures which would be a hybrid between withdrawable short-term deposits and shares. This would also help the DCUs in planning their cash flows better. The Kheda DCU presents a good illustration of a conscious shift in its thrust from withdrawable deposits to debentures at a stage when the DCU was making massive investments in expansion.

The question that can be validly raised about the Kheda DCU is on how the DCU has been able to undertake massive expansion activities if its strategy of fund raising has been in generating debt

rather than equity from the members. The answer for this lies in the net worth of the DCU. It may be important to note that the net worth of Kheda has been increasing at a rate of 9% per annum while the member funds have been increasing only at the rate of 7% per year, and non-withdrawable reserves and share capital in particular have been growing at a rate of 2% and 3% per annum respectively. The rest of the net worth has been predominantly financed by grants from programme agencies, which the DCU has put to full use. This route might not always be available to DCUs at all times to come and therefore appropriate checks have to be built in for planning new strategies of generating member funds. In fact this facility might not be easily available for the Kheda DCU's future expansion also. The shift in the Kheda DCU's fund raising strategy also clearly indicates the recognition of this particular fact.

### 7.1.3 Other Forms of Member Funds

In the study, it was found that the DCUs of Valsad and Vadodara had significant amounts of non-withdrawable reserves. These are generally generated from appropriation of profits. These reserves are permanently with the DCU and are not member identifiable. The members also do not have any residual claims on these amounts. Since these two DCUs adopted the strategy of generating permanent capital more from the member DCSs, it can be seen that their borrowing power is greater. On an average both the Valsad and Vadodara DCUs had a greater net-worth to capital employed ratio than the other DCUs. While we had listed this as the top of the quality capital in our multico-op study, we would be wary of ascribing that position to these funds in dairy co-ops. This is essentially because there are implications of taxation in the case of DCUs which were not there in the DCSs. By and large, in the multico-op study, it was found that the income of the multico-ops were tax-exempt unless the co-op had a processing facility. Even then, the tax liability was limited to the extent of the profits earned by the unit having the processing facility. This however is not true in the case of DCUs and therefore a better strategy here would be to pay a price differential and collect back the money as contributions to the other categories of member funds.

Non-withdrawable deposits as a category were not used in any of the DCUs at all. Over a period of time, this route to financing might catch the fancy of the DCUs because it blends the strengths of share capital as well as that of deposits. While there would be market related pay-offs for the deposits, these are also likely to be considered as a part of the net-worth for leveraging purposes by the lending institutions. This is demonstrated by the sugar co-ops in Maharashtra which have effectively used this route to financing their expansion activities. In fact, they have even used this route not only to retire the debt which they had taken during the initial stages, but also to retire the share capital which they had received from the government. Based on this study we would slightly

modify the plausible ranking of member funds given in our multico-op study. In the DCUs, plausible ranking of funds from the highest to the lowest quality would be as follows:

- a. Non-withdrawable deposits
- b. Withdrawable deposits, Debentures
- c. Share capital, Withdrawable reserves
- d. Non-withdrawable reserves
- e. Short term dues

#### 7.1.4 Operational Issues

There are certain operational issues related to the generation of member funds, which might have implications on the overall structuring of the capital in the DCU as well as have a significant bearing on the member control, usage and satisfaction. How does one operationalise the strategy to raise member funds? Check-offs seem to be one of the easiest and the most powerful strategies in raising member funds. Check-off as a strategy would work better if the DCS is fully dependent on the DCU and there is some mutual binding. Check-off as a strategy might not work in the areas where there is intense competition for procurement of milk. For instance, in the case of the Mehsana DCU check-off might not be a very good strategy for generation of member funds where the DCU might have to compete intensely for procurement of milk, and it might be in the interest of the DCU to pay out as high a price as possible. Instead, it might be better to encourage the DCSs to voluntarily invest in the fixed deposits with the DCU. Similar would be the case probably with the Surat DCU (not included in this study). Check-offs would have their own disadvantages in the perception of members essentially because it would be perceived as receiving so much less for the product supplied.

The second issue pertains to what category of member funds does one use to undertake the activity of check-offs. When we look at the strategy of check-offs, we find that these check-offs are effected from milk payments to be made on a regular basis. It would be a matter of operational detail as to how much would a DCS be willing to receive in the form of cash for the product supplied. As long as the check-off is within a reasonable limit, it gives the DCU enough operational leverage (see Phansalkar and Srinivasan, 1992a). If the check-offs exceed a reasonable limit, then disenchantment would set in. It might be interesting to quote the case of a DCU in South India which converted all the member-dues for more than 10 weeks into share capital. This was the other end of the spectrum of generating member-funds. While we analyse the financial statements of such a DCU, we might find that the DCU has suddenly generated a significant amount of member-funds but the question is, at what cost?

## 7.2 Consequences of Member Funds: Control Factors

It was seen in this study that excessive reliance on share capital was associated with control through periodic decisions and satisfaction. However, share capital did not have an association with either usage or with control on routine matters. This was also amply demonstrated in the two-day workshop we had conducted with the functionaries of the Vadodara DCU. In a context where the importance of capital was being discussed, they expressed the opinion that they could not think of strategic issues when the operational irritants like fat testing, timings of the truck, quality of cattle feed, etc., are not addressed. This has very important implications on the control scores of **MCROU** obtained by each of the DCUs. If routine matters are not addressed adequately, the members would not only have the tendency to use **MCOC** as a more powerful tool of control, but also would not be even open to the idea of additional capital generation. To that extent, the other DCUs are fairly better off on this aspect.

**MCPER** is a control measure which involves taking decisions on annual basis. This would be used lesser and lesser unless **MCROU** is not adequately addressed. It is interesting to find that **MCROU** is a control tool used by the Vadodara and Mehsana DCUs, both of whom have followed a two-pronged strategy of generating share capital as well as member deposits, unlike the Valsad DCU which has concentrated only on share capital and the Kheda DCU which has concentrated on deposits/debentures. On the control measure **MCOC** we find a clear pattern - the DCUs of Kheda and Vadodara have a greater reliance on **MCOC** compared to the other DCUs. This is partly explained by the fact that the Valsad DCU has an imposing managerial leadership and the Mehsana DCU has an imposing political leadership. The only difference between these two is that Mehsana scores higher on both **MCPER** and **MCROU** suggesting that the system of capital generation might be a bit more involved than in the case of Valsad. This also supports our earlier suggestion that in the areas of strong competition, a system of check-offs could prove counter productive.

The findings suggest that the best path to member-satisfaction might be through generating funds other than share capital, which have permanence. This would lead to control on routine matters which in turn will lead to usage and satisfaction. The other route which by-passes the control on routine matters is somewhat sub-optimal and would leave the members with a sense of discomfort in spite of being satisfied with the services of the DCU. The study also strongly suggests that if routine matters are not resolved, there would be no platform for negotiating strategic matters.

**APPENDIX 1 : INS 3**

**Title Member Control, Usage and Satisfaction**

ADMINISTRATION SECTION							
COLLECTION		VERIFICATION		ENTRY		ENTRY CHECK	
Sign	Date	Sign	Date	Sign	Date	Sign	Date

IDENTIFICATION SECTION							
Union Code						Union Name	
Society Code						Society Name	
						Society's Regn. No.	
						Year Established	

DATA SECTION: SOCIETY'S FUNDS WITH UNION								
Item		Amount						
Share Capital								
Debentures								
Dues from Union								
Others								
2011	Total Funds							

DATA SECTION: SOCIETY'S BUSINESS WITH UNION DURING 1994-95		
Item		Quantity
Total quantity of milk procured by the Society		
Milk supplied to the Union		
Local sale of milk		
Total quantity of various types of cattlefeed sold by the Society	a)	
	b)	
	c)	
Various types of cattlefeed purchased from the Union	a)	
	b)	
	c)	

DATA SECTION : MEMBER CONTROL	
Instructions for Item 2111 (election/selection of Union Chairman and Board of Directors).	
2111	Election of Board of Director/Chairman of the Union
<p>All Unions are usually managed by a Chairman and a Board of Directors. The Chairman and the Board are either elected or nominated. Elections may be contested or the appointments may be unanimous.</p> <p>Use the following scale for Coding the response:  5 = Actively campaigned for the candidature of Chairman/Director(s) in one or more elections, even if these were unanimous.  4 = Voted in all the elections on his own.  3 = Voted in all the elections following persuasion/request  2 = Voted only in some of the elections on his own or due to persuasion/request.  1 = Did not vote in any of the elections.  0 = Not applicable.</p>	

DATA SECTION : MEMBER CONTROL	
Instructions for Items 2211 to 2230	
<p>A Union takes decisions on a range of issues. Some decisions are taken annually, and others more frequently. Societies would desire that their Union takes decisions in the interest of Societies. To ensure this, Societies exert influence on decisions either directly (by participation in the decision-making process) or indirectly (requesting a Director to represent to the Union management on their behalf).</p> <p><input type="checkbox"/><input type="checkbox"/><input type="checkbox"/></p> <p>We are going to ask you specific questions related to important decisions of your Union. We would like to know to what extent you think you (or your predecessor) have influenced these decisions in the last five years.</p> <p><input type="checkbox"/><input type="checkbox"/><input type="checkbox"/></p> <p>Use the following scale for recording responses:</p> <p>5 = To a very great extent, most of the time  4 = Fairly high, most of the time  3 = To a lesser extent, most of the time  2 = To a lesser extent, most of the time  1 = Very little or none most of the time  0 = Not applicable</p>	

2211	Passing/amendment of bye-laws	
2212	Decisions regarding distribution and allocation of surplus : (Ex: price difference/dividend)	
2213	Budget decisions (Ex: accounts/annual expenditure details)	
2214	Decisions regarding fixation of the sale price of milk	
2215	Decisions regarding fixation of the sale price of cattle feed	
2216	Capital expenditure decisions (Ex: New Chilling Centre, additional machinery)	
2217	Testing procedure of milk supplied to Union (Ex: Fat, SNF, weight, sourage)	
2218	Fund raising strategy (Ex: Additional share capital/debentures, deposits, retention of patronage surplus)	
2219	Location of Processing Plant/Chilling Centre	
2220	Appointment of the Managing Director of the Union	
2221	Fixing the milk truck timings	
2222	Extent to which your complaints against Union staff are resolved	

2230	On the whole how much influence and control do you think you have on the decisions of the Union?	
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DATA SECTION : SOCIETY USAGE		
Instructions for Item 2303		
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Please indicate the extent to which your Society members depend on Union's Veterinary Services (Ex: A.I., treatment of diseases, etc.) during the last one year? <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		
Use the following scale for recording the responses:		
5 = 80% or more		
4 = 60-80%		
3 = 40-60		
2 = 20-40%		
1 = Below 20%		

2303	Use of other services (veterinary services)	
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DATA SECTION : SOCIETY SATISFACTION		
Instructions for Items 2401 to 2404		
The satisfaction of the Society can be of two types: satisfaction with the overall performance of the Union, and satisfaction with the specific services provided by the Union.		
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> We would like to have your responses on both these aspects. <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		
Use the following scale for recording the responses:		
5 = Very high satisfaction		
4 = High satisfaction		
3 = Moderate satisfaction		
2 = Low satisfaction		
1 = Very low satisfaction		

2401	Are you satisfied with the overall functioning of your Union?	
2402	Are you satisfied with the milk business of your Union?	
2403	Are you satisfied with the cattlefeed business of your Union?	
2404	Are you satisfied with the veterinary services provided by your Union?	



## References

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