ABSTRACT

For finding the performance of the banking sector, evidence found from its profitability of the bank. Profitability has been an important criterion to evaluate the overall efficiency of a bank’s operations. Being a relative measure, it is devoid of the pitfalls associated with interpretation of term ‘profit’. Even if one ignores the past year or peer aspect of measuring profitability, it is still the best indicator of efficiency of banking operations. The concept of profitability is used and interpreted the same way both in a business firm and a banking company. Bank’s profitability has assumed greater importance in the changing scenario of autonomy to banks and financial reforms. Profitability in banking parlance, demotes the efficiency with which a bank deploys its total resources to optimize its profit and thus serves an index of asset utilization and managerial effectiveness. The present paper attempts to explore the relationship between bank profitability and its determinants. Since there are many variables affecting profitability, a model giving the most critical variables / ratios has been developed by using Multiple Discriminant Analysis.

Keyword : Financial performance, Central Co-operative Bank, Multi Discriminant Model.
1. Introduction

In the early 20th century, the availability of credit in India, more particularly in rural areas was nonexistent. There was no organized institutional credit for agriculture and related activities. People in the rural areas largely depended on money lenders who lent money at very high rates of interest. Thus, there was need to create an institution which would cater to the needs of ordinary people and was based on the principles of cooperative organization and management. In 1904, the first legislation on cooperatives were passed. In 1914, the Maclagen committee suggested a three tier structure for cooperative banking i.e. Primary Agricultural Credit Societies at the grass root level, Central co-operative Banks at the district level and State co-operative Banks in the State or Apex level. Co-operative banks were expected to serve as substitutes for money lenders, and provide both short-term and long-term institutional credit at reasonable rates of interest.

Banks occupy a unique position in the economy of any nation and they have a long history in India, as in other countries, though the form and character of their operations have been changed in consonance with the changing times. The earliest banking institutions were agency houses which carried on banking business in addition to their trading activities. When banking activities were separated from other business activities banks made their appearance. The Swadeshi movement gave impetus to many Indian entrepreneurs to start banking institutions. During the first half of the twentieth century, there was a mushroom growth of banks in India. In India today, banks are owned and managed by the public sector, the private sector, the joint sector and the co-operative sector. However, the co-operative sector acts as a balancing force between the public sector and private sector.

2. REVIEW OF LITERATURE

Inmaculada Carrasco (2004) stated in his article that the phenomenon of globalization has an effect on all the fields of economic and financial activity. In this increasing competitive environment, the majority of the Spanish credit institutions has been integrated in a cooperative banking group: the Grupoaja Rural. In other countries of long cooperative tradition, important credit institutions have responded to the challenges presented by economic Internationalization and the increasing competence in financial markets with the abandonment of mutuality and cooperative model. These changes have been justified by companies in order for their own survival and business growth necessities. In Spain, the reaction has been the opposite. In spite of that, some elements can make one think of a possible demutualization process in the Group, due to the trivialization of cooperative principles.

Carlos Pestana Barros, Nicolas Peypoch and Jonathan Williams (2006) discussed in their paper that proposes a framework for benchmarking European co-operative banks and the rationalization of their operational activities. The analysis is based on the Luenberger productivity indicator. A key advantage of this method is that it allows for both input contraction and output expansion in
Financial Performance Of The Salem District Central Co-Operative Bank Since Computerization – Evidence From Multi Discriminant Model

determining relative efficiencies and productivity changes. Benchmarks are provided for improving the operations of those banks which perform worse than others. Several interesting and useful managerial insights and implications arise from the study. The general conclusion is that, between 1996 and 2003, productivity increased for the majority of European co-operative banks.

Gutierrez, Eva (2006) discussed in their paper that the governance framework of cooperative banks may hamper raising capital, particularly at times of distress, complicating the bank resolution process? Especially for large banks? and may not provide adequate incentives to control banks' management. Reforms should preserve the positive characteristics that make cooperative banks a valuable addition to the Italian financial system, while providing enough flexibility and incentives for banks to adopt a suitable governance model. Their empirical analysis suggests that cooperative banks may enjoy a higher degree of monopoly power than commercial banks. Thus, regulations and the enforcement of antitrust policies should ensure a leveled playing field.

Dutta, Probal and Bose, Sudipta (2007) stated in their article that in today’s corporate world, board diversity is a much talked-about topic and gender diversity is an important aspect of board diversity. Gender diversity refers to the presence of women on corporate boards of directors. In this paper, an effort has been made to examine whether an association exists between the financial performance of commercial banks in Bangladesh and the presence of women on the boards of directors of these banks and in order to examine the existence of this association, a non-parametric test, namely Kruskal-Wallis H test has been conducted, but the test has yielded conflicting results at different significance levels.

Martin Cihik and Heiko Hesse (2007) stated in their article that cooperative banks are an important, and growing, part of many financial systems. This paper empirically analyzes the role of cooperative banks in financial stability. Contrary to some suggestions in the literature, they find that cooperative banks are more stable than commercial banks. This finding is due to the lower volatility of the cooperative banks' returns, which has lower profitability and capitalization. This is most likely due to cooperative banks’ ability to use customer surplus as a cushion in weaker periods. We also find that in systems with a high presence of cooperative banks, weak commercial banks are less stable than they would be otherwise. The overall impact of a higher cooperative presence on bank stability is positive on average but insignificant in some specifications.

Panayiotis P. Athanasoglou, Evangelia A. Georgiou and Christos C. Staikouras (2009) discussed in their paper that assesses the evolution of output and productivity in the Greek banking industry for the period 1990–2006. Three main categories of bank output were estimated based on modern theoretical approaches, while for the estimation of output and productivity (partial and total factor) they relied on the index number method (Tornqvist index). They also considered the effect of labor quality on banks’ productivity and the contribution of total factor
productivity to bank output growth. Bank output and labor productivity outpaced considerably the respective GDP growth and labor productivity of the Greek economy during the period under examination. Capital and total factor productivity have also improved remarkably mainly since 1999, due to the structural changes that took place within the industry, capital (mainly IT) investments and improvement in the quality of human capital.

3. STATEMENT OF THE PROBLEM

The central co-operative banks occupy a position of cardinal importance in the cooperative credit structure. They form an important link between the apex co-operative bank and the primary agricultural societies. The success of the co-operative credit movement largely depends on their financial strength. The chief object of central co-operative banks is to meet the credit requirements of the member societies. It finances agricultural credit societies for production purposes, makes the societies to reduce the working expenses. They work as an intermediary to link the primary societies with the money market. Further the central banks serve as a balancing centre for adjusting the surplus and deficiency of the working capital of the primary credit societies.

The performance of the bank largely depends on deposit mobilization, lending operations, repayment performance and utilization of funds. The present study is an attempt to probe into the deposit mobilization, lending operations, repayment performance and utilization of funds during pre-computerization and post computerization periods. The empirical findings of the study would pave way for taking certain policy decisions for better performance of the Salem District Central Co-operative Bank.

4. OBJECTIVES OF THE STUDY

The study has the following objectives;

1. To study the performance of central co-operative Banks in Salem District, Tamilnadu and India.
2. To examine the relationship between bank profitability and its determinants through multi-discriminant model.

5. DESIGN AND SAMPLE SELECTION

The present study is mainly based on the secondary data. The required secondary data were collected from various published and unpublished documents maintained by the SDCC Bank and its branches located in the different parts of Salem and Namakkal districts. The data relating to deposits, lending performance and the overall financial performance of the bank were collected from the published Annual Reports of the bank and also from the appropriate records available with the bank. Ratio analysis has been applied to assess the performance evaluation of the financial strength and profitability of the bank. Various ratios such as operational ratios, liquidity ratios, solvency ratios and statutory compliance ratios have been used to analyze the performance of the bank during the pre-computerization and post-computerization periods. The period covered in the study is divided into a pre-computerization period 1992-

6. OPERATIONAL EFFICIENCY OF THE BANK

The operating ratios help in assessing the operational efficiency of a bank. The operational efficiency of the Bank has been measured with the help of the following ratios: i) interest earned in total income, ii) interest paid to total income, iii) total income to working capital, iv) total expenditure to total income.

Interest Earned to Total Income Ratio

Interest is a major source of income for a bank and it is earned out of advances and investments. This ratio expresses the share of interest income in the total earnings of the bank.

**TABLE 1 - Ratio of Interest Earned to Total Income of the Bank during the Pre-Computation and Post-Computation Periods**

<table>
<thead>
<tr>
<th>S. No</th>
<th>Year</th>
<th>Pre-Computation</th>
<th>Post-Computation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Interest Earned</td>
<td>Total Income</td>
</tr>
<tr>
<td>1</td>
<td>1992-93</td>
<td>3629.66</td>
<td>3744.59</td>
</tr>
<tr>
<td>2</td>
<td>1993-94</td>
<td>3713.41</td>
<td>3851.62</td>
</tr>
<tr>
<td>3</td>
<td>1994-95</td>
<td>5928.15</td>
<td>6077.36</td>
</tr>
<tr>
<td>4</td>
<td>1995-96</td>
<td>6990.04</td>
<td>7163.61</td>
</tr>
<tr>
<td>5</td>
<td>1996-97</td>
<td>8429.26</td>
<td>8584.84</td>
</tr>
<tr>
<td>6</td>
<td>1997-98</td>
<td>9957.90</td>
<td>10128.55</td>
</tr>
<tr>
<td>7</td>
<td>1998-99</td>
<td>8718.14</td>
<td>8863.31</td>
</tr>
<tr>
<td>8</td>
<td>1999-00</td>
<td>9966.66</td>
<td>10162.73</td>
</tr>
</tbody>
</table>

*Source: Annual Reports of the SDCC Bank from 1992-93 to 2007-2008*

Table 1 shows the ratio of interest earned to total income during the periods of the pre-computerization and post-computerization. In the pre-computerization period, the share of interest in the total income of the Bank was less. In the case of the post-computerization period, the total share of the interest amount varied between 91.34 per cent in 2004-05 and 98.24 per cent in 2002-03. It shows that the share of the income from interest in the total income of the bank is more stable. From this analysis, it is clear that computerization has not had any major impact on the share of the income from interest earned out of the total income of the bank.

7. Ratio of Interest Paid to Total Income

The ratio of interest paid to the total income indicates the extent of total income that is drained out as payment of interest. Table 2 shows the ratio of interest paid to total income of the Bank.
Table 2 presents the ratio of the interest paid to the total income during the pre-computerization and post-computerization periods. In the pre-computerization period, the ratio varied from 74.89 per cent in 1992-93 to 84.59 per cent in 1997-98. There are high fluctuations in the percentage of the interest paid on the borrowings and deposits to total income during the pre-computerization period. In the post-computerization period this ratio varied between 55.13 per cent in 2004-05 and 80.05 per cent in 2000-01. It could be deduced that there were high fluctuations in the percentage of payment of interest paid by the Bank.

8. Ratio of Total Income to Working Capital

This ratio shows the income earning capacity of the bank with respect to its working capital. This ratio also shows the relationship between the total income and the working capital of the bank.

Table 3 illustrates the ratio of the total income to the working capital during the pre-computerization and post-computerization periods. This ratio
varied 11.34 per cent in 1992-93 to 17.24 per cent in 1996-97 in the pre-computerization period. It shows that there were violent fluctuations in the total income capability of the Bank with its working capital. In the post-computerization period, the ratio fluctuated between 7.47 per cent in 2007-08 and 12.93 per cent in 2001-02. It shows that there are great fluctuations in the total income to working capital ratio. From this analysis it is found that there is the smallest level of impact the total income had on working capital.

9. Ratio of Total Expenditure to Total Income

The total expenditure of the Bank is incurred in the form of the interest paid and the establishment expenses. This ratio shows the relationship between income and expenditure. This helps to diagnose the health of the banks and is used to test the adequacy of the net earnings of the bank.

### TABLE 4 - Ratio of Total Expenditure to Total Income of the Bank during the Pre-Computerization and Post-Computerization Periods

*(Rs. in Lakhs)*

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Year</th>
<th>Pre-Computerization</th>
<th>Post-Computerization</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Total Expenditure</td>
<td>Total Income</td>
</tr>
<tr>
<td>1</td>
<td>1992-93</td>
<td>3673.21</td>
<td>3744.59</td>
</tr>
<tr>
<td>2</td>
<td>1993-94</td>
<td>3761.03</td>
<td>3851.62</td>
</tr>
<tr>
<td>3</td>
<td>1994-95</td>
<td>5940.00</td>
<td>6077.36</td>
</tr>
<tr>
<td>4</td>
<td>1995-96</td>
<td>6980.50</td>
<td>7163.61</td>
</tr>
<tr>
<td>5</td>
<td>1996-97</td>
<td>8372.50</td>
<td>8584.84</td>
</tr>
<tr>
<td>6</td>
<td>1997-98</td>
<td>9895.08</td>
<td>10128.55</td>
</tr>
<tr>
<td>7</td>
<td>1998-99</td>
<td>8555.85</td>
<td>8863.31</td>
</tr>
<tr>
<td>8</td>
<td>1999-00</td>
<td>9826.51</td>
<td>10162.73</td>
</tr>
</tbody>
</table>

*Source: Annual Reports of the SDCC Bank from 1992-93 to 2007-08*

Table No. 4 exhibits the ratio of total expenditure to total income during the pre-computerization and post-computerization periods. In the pre-computerization period, the ratio varied from 96.53 per cent in 1998-99 to 98.09 per cent in 1992-93 constituting a range of 1.56 per cent. It indicates that the Bank had spent more than 96.53 per cent of the total income in that period. During the post-computerization period, the ratio of total expenditure to total income varied between 94.31 per cent in 2006-07 and 99.95 percent in 2005-06. It is inferred that the bank had spent more than 94.00 per cent of the total income, from the analysis, it is clear that the Bank has maintained its expenditure around 95.00 per cent during the pre-computerization and post-computerization periods and that the computerization policy has had no impact on the maintenance of total expenditure.

10. Comparative Position of the Operating Ratios of the Bank

In order to identify whether there is any change in the operating ratios during the pre-computerization and post-computerization periods, the F-test has
been applied. The F-values in respect of the operating ratios of the Bank are shown in Table No. 5.

### TABLE 5 - F-Values in respect of Operating Ratios of the Bank during the Pre-Computerization and Post-Computerization Periods

<table>
<thead>
<tr>
<th>S. No</th>
<th>Operating Ratios</th>
<th>F-Values</th>
<th>Table Values</th>
<th>Result at 5%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Ratio of Interest Earned to Total Income</td>
<td>0.064</td>
<td>3.79</td>
<td>Not Sig.</td>
</tr>
<tr>
<td>2.</td>
<td>Ratio of Interest Paid to Total Income</td>
<td>0.469</td>
<td>3.79</td>
<td>Not Sig.</td>
</tr>
<tr>
<td>3.</td>
<td>Ratio of Total Income to Working Capital</td>
<td>1.117</td>
<td>3.79</td>
<td>Not Sig.</td>
</tr>
<tr>
<td>4.</td>
<td>Ratio of Total Expenditure to Total Income</td>
<td>0.101</td>
<td>3.79</td>
<td>Not Sig.</td>
</tr>
</tbody>
</table>

*Source: Computed from Tables 1, 2, 3 and 4*

It is observed from Table 8 that the operating ratios like interest earned to total income, interest paid to total income, total income to working capital, total expenditure to total income were not significantly different during the pre-computerization and post-computerization periods as the F-value is lower than the Table value (3.79) at the five per cent level of significance.

### 11. Development of Discriminant Model

In the financial relationship, profitability has been viewed as position or status in qualitative terms and hence, measured on non-metric scale, while, the variable spread, burden and financial leverage being quantitative have been measured in metric terms. Thus, the dependents relationship is that of one metric dependents variable and several metric independent variables confirmed to the application of Multiple Discriminant Analysis. The dependent variable has been defined in terms of pre-computerization and post-computerization in the SDCC bank which is considered the most preferred measure of financial position during the period. In case of independent variables, all the 20 ratios representing spread, profitability, working capital, income and their components have been taken. The 20 ratios / independent variables affecting the financial health of the SDCC bank before and after computerization are:

**Variable Ratios**

\[
\begin{align*}
X_1 & : \text{Interest Earned to Total Income Ratio} \\
X_2 & : \text{Interest Paid to Total Income} \\
X_3 & : \text{Total Income to Working Capital} \\
X_4 & : \text{Total Expenditure to Total Income} \\
X_5 & : \text{Establishment Expenditure to Total Expenditure} \\
X_6 & : \text{Interest Paid to Interest Received} \\
X_7 & : \text{Operating Cost to Working Capital Fund} \\
X_8 & : \text{Net Profit to Total Income} \\
X_9 & : \text{Net Profit to Total Deposit} \\
X_{10} & : \text{Net Profit to Spread}
\end{align*}
\]
Financial Performance Of The Salem District Central Co-Operative Bank Since Computerization – Evidence From Multi Discriminant Model

\[ X_{11} : \text{Return on Assets} \]
\[ X_{12} : \text{Return on Equity} \]
\[ X_{13} : \text{Net profit to Working Capital} \]
\[ X_{14} : \text{Cash to Deposits} \]
\[ X_{15} : \text{Investment to Deposits} \]
\[ X_{16} : \text{Spread to Total Assets} \]
\[ X_{17} : \text{Credit to Deposits} \]
\[ X_{18} : \text{Total Outside Liabilities to Own funds} \]
\[ X_{19} : \text{Long term Debt to Own} \]
\[ X_{20} : \text{Deposits to Own Funds} \]

The sample consists of 8 years from 1992-93 to 1999-00 for pre-computerization of SDCC bank and 8 years from 2000-01 to 2007-08 for post-computerization of SDCC bank. The data relate the period between 1992-93 and 2007-08. All the 20 ratios for the SDCC bank have been calculated and discussed in following Table No.9.
### Table 6 - Pre and Post Categorical Values and 20 Ratios for SDCC Bank (1992-93 to 2007-08)

<table>
<thead>
<tr>
<th>Year</th>
<th>DV</th>
<th>X₁₁</th>
<th>X₁₂</th>
<th>X₁₃</th>
<th>X₁₄</th>
<th>X₁₅</th>
<th>X₁₆</th>
<th>X₁₇</th>
<th>X₁₈</th>
<th>X₁₉</th>
<th>X₂₀</th>
</tr>
</thead>
<tbody>
<tr>
<td>1992-93</td>
<td>1</td>
<td>0.21</td>
<td>3.17</td>
<td>0.22</td>
<td>0.040</td>
<td>0.33</td>
<td>0.025</td>
<td>1.18</td>
<td>11.54</td>
<td>10.58</td>
<td>8.62</td>
</tr>
<tr>
<td>1993-94</td>
<td>1</td>
<td>0.27</td>
<td>3.72</td>
<td>0.27</td>
<td>0.038</td>
<td>0.32</td>
<td>0.022</td>
<td>1.09</td>
<td>11.10</td>
<td>10.87</td>
<td>9.12</td>
</tr>
<tr>
<td>1994-95</td>
<td>1</td>
<td>0.34</td>
<td>5.09</td>
<td>0.34</td>
<td>0.042</td>
<td>0.32</td>
<td>0.022</td>
<td>1.17</td>
<td>12.06</td>
<td>10.64</td>
<td>9.13</td>
</tr>
<tr>
<td>1995-96</td>
<td>1</td>
<td>0.41</td>
<td>5.95</td>
<td>0.42</td>
<td>0.039</td>
<td>0.32</td>
<td>0.026</td>
<td>1.04</td>
<td>11.37</td>
<td>11.07</td>
<td>9.60</td>
</tr>
<tr>
<td>1996-97</td>
<td>1</td>
<td>0.43</td>
<td>5.92</td>
<td>0.43</td>
<td>0.040</td>
<td>0.33</td>
<td>0.029</td>
<td>0.94</td>
<td>11.10</td>
<td>11.16</td>
<td>9.95</td>
</tr>
<tr>
<td>1997-98</td>
<td>1</td>
<td>0.37</td>
<td>5.95</td>
<td>0.37</td>
<td>0.037</td>
<td>0.49</td>
<td>0.022</td>
<td>0.70</td>
<td>13.35</td>
<td>12.96</td>
<td>12.18</td>
</tr>
<tr>
<td>1998-99</td>
<td>1</td>
<td>0.40</td>
<td>7.26</td>
<td>0.46</td>
<td>0.035</td>
<td>0.65</td>
<td>0.024</td>
<td>0.54</td>
<td>15.32</td>
<td>14.75</td>
<td>14.11</td>
</tr>
<tr>
<td>1999-00</td>
<td>1</td>
<td>0.35</td>
<td>7.32</td>
<td>0.41</td>
<td>0.033</td>
<td>0.71</td>
<td>0.020</td>
<td>0.50</td>
<td>17.42</td>
<td>16.99</td>
<td>15.83</td>
</tr>
<tr>
<td>2000-01</td>
<td>2</td>
<td>0.33</td>
<td>7.14</td>
<td>0.39</td>
<td>0.034</td>
<td>0.71</td>
<td>0.019</td>
<td>0.57</td>
<td>18.03</td>
<td>16.39</td>
<td>15.64</td>
</tr>
<tr>
<td>2001-02</td>
<td>2</td>
<td>0.39</td>
<td>7.26</td>
<td>0.46</td>
<td>0.034</td>
<td>0.67</td>
<td>0.022</td>
<td>0.54</td>
<td>15.36</td>
<td>13.96</td>
<td>14.12</td>
</tr>
<tr>
<td>2002-03</td>
<td>2</td>
<td>0.38</td>
<td>6.48</td>
<td>0.44</td>
<td>0.032</td>
<td>0.60</td>
<td>0.025</td>
<td>0.61</td>
<td>14.31</td>
<td>12.73</td>
<td>13.07</td>
</tr>
<tr>
<td>2003-04</td>
<td>2</td>
<td>0.38</td>
<td>5.02</td>
<td>0.43</td>
<td>0.031</td>
<td>0.62</td>
<td>0.034</td>
<td>0.73</td>
<td>11.27</td>
<td>9.26</td>
<td>9.14</td>
</tr>
<tr>
<td>2004-05</td>
<td>2</td>
<td>0.44</td>
<td>4.45</td>
<td>0.44</td>
<td>0.031</td>
<td>0.56</td>
<td>0.034</td>
<td>0.81</td>
<td>8.51</td>
<td>7.67</td>
<td>6.94</td>
</tr>
<tr>
<td>2005-06</td>
<td>2</td>
<td>0.00</td>
<td>0.04</td>
<td>0.00</td>
<td>0.030</td>
<td>0.42</td>
<td>0.035</td>
<td>0.94</td>
<td>7.96</td>
<td>7.33</td>
<td>6.55</td>
</tr>
<tr>
<td>2006-07</td>
<td>2</td>
<td>0.43</td>
<td>3.25</td>
<td>0.44</td>
<td>0.031</td>
<td>0.41</td>
<td>0.030</td>
<td>0.96</td>
<td>5.79</td>
<td>5.21</td>
<td>5.05</td>
</tr>
<tr>
<td>2007-08</td>
<td>2</td>
<td>0.42</td>
<td>3.18</td>
<td>0.44</td>
<td>0.027</td>
<td>0.40</td>
<td>0.024</td>
<td>0.96</td>
<td>5.55</td>
<td>5.10</td>
<td>4.83</td>
</tr>
</tbody>
</table>
THE MODEL

The Discriminant model has been developed by using step-wise computational methods as there are relatively a large number of independent variables for consideration and the objective is to have a parsimonious model by selecting the most efficient discrimination variables.

Out of the various measures viz., Wilk’s Lambda, Mahalanobis Smallest F-Ratio, and Rao’s V available for step-wise procedure, the Mahalanobis $D^2$ measures has been used with minimum F values, (required for entry) of 3.84. The step-wise procedure begins with excluding all the variables from the model by selecting the variable that maximizes the Mahalanobis distance between the groups. Step-1 involves selection of variable $X_6$ (Interest Paid to Interest Received). For inclusion in the discriminant function as it meets all the selection rules of minimum tolerance level, minimum F to enter and the associated Mahalanobis distance ($D^2$) is the maximum. After $X_6$ has entered into the model, the remaining variables are evaluated on the basis of distance between their means after the variance associated with selected variables has been removed. Again, the variable complying the selection rules and the highest $D^2$ is selected in the next step. In this way, variables $X_{20}$, $X_{19}$ and $X_{18}$ have selected in step 2, 3 and 4 respectively. After step 4, no variable is found to have the tolerance level / F value more than the minimum and therefore, the selection process is stopped.

<table>
<thead>
<tr>
<th>Step</th>
<th>Variable</th>
<th>Min. $D^2$</th>
<th>Exact – F</th>
<th>Coefficients</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Statistic</td>
<td>df1</td>
</tr>
<tr>
<td>1</td>
<td>$X_6$</td>
<td>3.833</td>
<td>15.332</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>$X_{20}$</td>
<td>6.377</td>
<td>11.844</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>$X_{19}$</td>
<td>13.834</td>
<td>15.810</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>$X_{18}$</td>
<td>21.641</td>
<td>17.004</td>
<td>4</td>
</tr>
</tbody>
</table>

Table 8 - Summary Of Canonical Discrimination Function Eigen Values

<table>
<thead>
<tr>
<th>Canonical Correlation</th>
<th>Eigen Value</th>
<th>Wilks lambda</th>
<th>Chi-Square Value</th>
<th>df</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.928</td>
<td>6.183</td>
<td>0.139</td>
<td>23.661</td>
<td>4</td>
<td>0.000</td>
</tr>
</tbody>
</table>

Thus Multiple Discriminant Analysis (MDA) identifies only four variables as the most significant discriminators, and given the following discriminant function.

$$Z = 1.071 X_6 - 4.941 X_{20} + 10.462 X_{19} - 6.248 X_{18}$$

Where,

$Z$ = Discriminant score and

$X_6$ : Interest Paid to Interest Received
Financial Performance Of The Salem District Central Co-Operative Bank Since Computerization – Evidence From Multi Discriminant Model

\[ X_{20} : \text{Deposits to Own Funds} \]
\[ X_{19} : \text{Long term Debt to Own} \]
\[ X_{18} : \text{Total Outside Liabilities to own funds} \]

are variables in standardized form.

The canonical correlation of the discriminant function is 0.928 which proves its substantial utility. A high coefficient indicates that there exist a strong relationship between the groups and discriminant function. By squaring \((0.928)^2 = 0.861\), it can be concluded that 86% of variance in the dependent variable, i.e. the financial position of pre and post computerization is accounted by the model which is fairly high.

Wilk’s Lambda and Chi-square test values suggested that the discriminating function is significant at the 1% level.

It is inferred from the above analysis that discriminant analysis of financial position provides a model which not only has high classification / prediction rate, but at the same time, it is parsimonious by selecting only four most discriminating variables out of as many as 20 variables. This reduced set of four key discriminators can be effectively used to measure the financial health of the SDCC bank in post computerization.

However there are a number of parameters / ratios of profitability. There is therefore, an urgent need to identify the key determinants of bank profitability which may provide a scientific and empirically tested framework to measure it. The present paper uses the technique of multiple discriminant analysis (MDA) to identify the most critical profitability ratios and develop a model which may be effectively used for financial decision-making relating to bank profitability.

12. **Recommendations**

1. The computerization of SDCCB was started in 2000-2001. Since then only 80 per cent of the Bank Branches are computerized. The Bank authorities should take quick action to implement total computerization of all branches of DCCBs. As DCCBs are registered under the Banking Regulations Act, it should be converted its ordinary Banking Business into core or Internet Banking.

2. All the SDCC Banks should be modernized with latest infrastructure. It is necessary to attract the customers. It should be modernized on par with new age banks, public and private sector banks.

3. The SDCC Bank is a customer driven enterprise, it is necessary to benchmark oneself by setting performance standards and comparison with the industrial standards. The standards should not only be developed by the organization, but also stated publicly through display boards so that customers can know and compare for themselves the quality standards that are provided by the SDCCB.

4. The SDCC Banks are doing Banking Business on par with other commercial banks functioning in their area. The commercial bank managers are given power to grant loans to a limited extent. But under
SDCC Banking System no power is given to Branch manager even for sanction of a small amount of loan. All loans are subject to the permission of District level Bank authorities.

5. As only 80 percentages of banks are computerized since 2000-01, no ATM facilities were provided to the customers. So, banking authorities should take necessary step to computerize all 59 branches, so as to attract the customers.

6. Since 2000-2001 all SDCCBs are managed by special officers appointed by the Tamilnadu Government. No recruitment was done for the year 2000 and onwards. Computerization was introduced but no proper training was provided to all employees of the bank. The special officers are not interested in the recruitment of employees. If an elected board of directors manages the bank they will understand the problems of employees better and they will redress the grievances of employees and recruit more employ who are well versed with knowledge of computer in order to increase the productivity of the bank and business per employee and in turn attract more customers also.

7. There are 374 PACBs and 1309 co-operative societies are under the control and supervision of SDCCB. Now Salem District Central Co-operative Bank includes banks in Salem District and Namakkal District. In Namakkal District alone, there are 165 PACBs and 302 other societies. Therefore in order to offer better service to the above mentioned societies in Namakkal District, The Salem District Central co-operative Bank should be bifurcated and a separate District Central Bank should be started in the name of “Namakkal District Central Co-operative Bank”. As the PACBs and co-operative societies are far off from their existence to Salem i.e., from more than 100 km, quick decision making is not possible. If Namakkal DCCB is stated the members of PACBs and other co-operative institutions will save the time, money and labour.

8. The study shows that during the pre-computerization and post-computerization periods, nearly 75 per cent of the deposits constitutes fixed deposit. This indicates that the Bank has been spending more on interest payment. So, the Bank should mobilize funds through low cost deposit schemes like savings and current deposit accounts. However, the Bank should also mobilize funds under low cost deposit schemes of fixed deposit to the maximum extent. The SDCCB should concentrate on low cost Savings, Current Account and Term Deposits of lower tenure.

9. At present out of 59 branches only 2 branches are fully managed by women employees. Women customers are considered to be the backbone of savings in a family. So more number of women's branches should be started at least one in each Taluk headquarters.

13. Limitations of the Study

- The researcher has evaluated only the financial performance of the bank.
- This study is pertinent to Salem District Central Co-operative Bank Only. As the banks are audited after two or three years the records and
ledgers are not properly available. Some of the audit reports are kept pending with authorities and officials.

References

- Dr. B. S. Mathur, Co-operation in India, Pp. 174,175.
- G.M. Laud Co-operative Banking in India P.336.
- Report of the committee on cooperation in India (1915) P.72.
- Annual reports of SDCCB
- Martin Cihik and Heiko Hesse, “Cooperative Banks and Financial Stability”, Paper provided by the International Monetary Fund in its series IMF Working Papers with number 07/2.