

# Association between Management Capacity and Profitability of Scheduled Urban Co-Operative Banks in India

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Received: 2 February 2020

Revised: 13 March 2020

Accepted: 20 April 2020

Publication: 15 May 2020

**Abstract:** *The objective of the present study is to find out any affiliation among capital adequacy, management ability and profitability in scheduled urban co-operative banks operating in India. Sound management is the key factors behind the performance of banking institutions. A strong capital adequacy absorbs any incidental loss due to the inherent threat of risk-based capital. Over the years, urban co-operative banks have a significant role in mobilising saving and deposits from small investors of lower and middle income groups and purvey credit to small borrowers including priority sectors of society. During the analysis of this study, various accounting and statistical tools were used. Accounting tools include ratio analysis, while analyse the data, arithmetic mean, standard deviation, coefficient of variation, test of significance, correlation coefficient, and multiple regression analysis have been applied. The affiliation of management ability with profitability in terms of cost of deposits and business per employee is found negatively related and non-interest income to working fund has a positive impact on profitability.*

**Keywords:** *Urban co-operative banks, profitability, correlation, multiple regression analysis.*

## 1. INTRODUCTION

For the economic development of a country, banking sector is one of key ingredients. For a sound and accelerated growth in economy, the growth and soundness of the financial sector especially in banking sector is crucial. For this reason it can be said that the growth of the economy depend on a resilient and vibrant banking system. The urban co-operative banks are the most important segment of co-operative sector in the country which is totally self reliant and most vibrant (MAMATHA, 2008). In the late of 1700s, Robert Owen, a great philosopher, introduced the concept of Co-operative movement with the world in England to encourage gaining the financial stability of the weaker section of the people who were affected in the wake of industrial revolution in Europe. But the true movement was started in 1844,

in Manchester, England, when 'The Rochdale Society of Equitable Pioneer' was set up by some flannel weaver to increase their earnings. In 1849-50, Herman Schultz, another great philosopher, started some co-operative credit societies in Germany for the benefit of the artisans in the cities. Thus urban co-operative credit societies originated. In India, first such co-operative credit society named 'Anonya Sahakari Mandali' was set up in 1889, by Vital Layman in the state of Baroda. This movement gained the momentum after passing the 'Co-operative Societies Act, 1904' with the view to encourage thrift practice, eradicate poverty, and provide financial assistance among poor people in the country. The first Urban Co-operative Credit Society was registered in 1904 at Coneyjeevaram in Madras Province. However Urban Co-operative Credit Societies began to grow rapidly after 1915 when Maclegan Committee opined that Urban Co-operative Credit Societies were most suitable agencies to cater to the needs of the lower and middle income strata to collect local saving and providing relief to those who were in the clutches of moneylenders. At the same time banking crisis of 1913-17 which saw the failure of many commercial banks, created favourable climate to originate and developed the concept of Urban Co-operative Banks in India (UCBs). There is no such formal definition of Urban Co-operative Banks (UCBs), but it refers to the primary co-operative banks which are located in the urban and semi-urban areas and usually holds deposits, make loans and provide other financial services to its members who are at the same time the owners and customers of their bank. The main objective of these banks is to encourage thrift and savings among members and to meet their credit requirements mainly for the needs of middle class and lower income section of urban and semi-urban areas. In general Urban Co-operative Banks refer to primary co-operative banks organised on co-operative basis, located and operated in semi-urban and urban areas to cater to the needs of small borrowers, small entrepreneurs, SSIs, professionals and salaried class. Over the years UCBs have a significant role in mobilising saving and deposits from small investors of lower and middle income groups and purvey credit to small borrowers including priority sectors of society. The concern regarding the professionalism of UCBs demanded UCBs to be better regulated. Therefore, it was considered necessary to bring them under the purview of the Banking Regulation Act, 1949. Besides this, a need for introduction of Deposit Insurance Scheme which was only applicable for Commercial banks was also felt to extend for the benefit of the depositors of the UCBs. On 1<sup>st</sup> March 1966, some provisions of Banking Regulation Act 1949 were made applicable to the large co-operative banks with paid up capital and reserves

of Rs.1 lakh. Thus the Urban Co- Operative Banks were brought under the purview of the Banking Regulation Act 1949 by insertion of section 56 in the Banking Regulation Act, 1949. This was a landmark in the evolution of urban banking movement in India and marked the beginning of an era of duality of control over these banks. While the banking aspects of these banks (viz. licensing, area of operations, interest rates etc.) were to be governed by the directives/guidelines issued by the Reserve Bank of India and the managerial aspects of these banks namely registration, constitution of management, administration and recruitment, amalgamation, liquidation etc. are controlled by the State Governments under the provisions of the respective State Co-operative Societies Act. The salary earners banks were also advised to go out from the jurisdiction of the Banking Regulation Act,1949 and thus 181 Salary Earner's banks went outside the purview of the banking Regulation Act during the period in 1966 by converting themselves in to cooperative credit Societies. The Madhava Das Committee (1978) acknowledged that despite the various limitations, the urban banks raised enough local resources and tried to serve small lenders. According to the committee, some states have the opportunities and requirements for developing urban banks. The committee recommending support from RBI and Government in the establishment of such banks in backward areas and prescribing viability standards such as composition of model bye-laws, providing finance to small-scale industries, managerial aspects and self-employment etc. After the implementation of the recommendations of the Madhava Das Committee (1978), the urban banks increased rapidly. To follow the growth rate of economic activity, the central and state governments have adopted the cooperative as a tool for economic development. During the period between 1977-78 and 1991-92 numbers of UCBs have been rose from 1051 to1311 with an average growth rate of 1.62 percentages. Owned funds have increased from Rs. 132 crore to Rs. 1765 crores, showing an average growth rate of 20.75 percent. Deposits have rose from Rs. 591 crore at the end of 1977-78 to Rs. 11108 crore with an average growth rate of 24.07 percentage. The growth rate of loan disbursement was also increased with an average growth rate of 22.08 percentages during this time period. Over the years, the UCBs have seen a significant increase in the number, size and volume business so the claim to be recognized as a scheduled bank was taken unanimously on each of UCBs conference or seminar. The main reason behind that demand was several incidents where cheques/demand drft/pay-orders drawn on UCBs were being refused by scheduled commercial banks as the UCBs were non-scheduled banks. Similarly some of the Government undertakings and PSUs

like IOC, Hindustan Steel and some corporate bodies like CEAT Tyres Ltd. were refusing cheques/DD drawn on UCBs on the same ground. With respect to this demand, the Reserve Bank of India recognized 11UCBs which had demand and time liability of over Rs.50 crore, as scheduled banks by issuing a notification dated August 18, 1988 and included them in the second scheduled of the RBI Act, 1934. As on 31<sup>st</sup> March 2016 there were 1589 UCBs out of which 52 scheduled (Hence, SUCBs) and 1539 are non-scheduled. Thus UCBs are playing an important role in Indian economy and emerging as an integral part of Indian financial system.

Management Ability means setting standards, planning and responding to changing environments, leadership and administrative ability of banks (Misra & Aspal, 2013). It includes an analysis of skills of management in doing business and profit maximization (REDDY, 2012). Since management is a qualitative issue, it is usually difficult to measure (Rostami, 2015). Sound management is the key factors behind the performance of banking institutions. A strong capital adequacy absorbs any incidental loss due to the inherent threat of risk-based capital. On the other hand the good ability to react in diverse circumstances and setting up norms, plan and act according to the situation are the capacity of management that helps in generating business in competitive environment to maximise the profit. Thus, management ability help the financial institutions to be stable and make their existence in any adverse environment by eradicating incidental losses, generating incomes and making good returns on assets.

## **2. REVIEW OF RELATED LITERATURE**

There are many research studies that try to evaluate whether the Co-operative Banks are operating efficiently or not. An attempt is made in the following paragraphs to review some of important earlier works by the scholars with a view to find whether any researcher has worked on the topic of the proposed study:

Asher (2007) in his article surveys the quantitative importance of the UCBs in India, and their key performance indicators. The study revealed that for remaining a relevant part of Indian financial system and to play a significant role for development in India, requires same quality of governance and regulation as well as professionalism and modernisation as the mainstream commercial banks. The author urges for a paradigm shift in the role of UCBs. Gupta & Jain (2012) observed that co-operative financial institutions were facing severe problems like, limited ability to mobilise resources, low level of recovery, high transaction of cost, etc, which had restricted their ability to ensure smooth

flow of credit. Mitra (2012) studied five UCBs in the district of Hooghly, West Bengal during 2004-05 to 2010-11 and found that poor resource base is the main constraint of the urban co-operative banks. These banks are also suffering from lack of professional management and most of the cases approach is very much causal. He suggested the management to prepare a comprehensive perspective plan for product diversification to maintain a competitive edge in the market. Babu & Selkhar (2012) found that with the effect of liberalization cooperative bank in India are under pressure to change the ways in which they do business. They are facing the competitive environment not only from banks but also from non-banking financial institutions. They suggested to take certain measures such as professionalization of management, good corporate governance, technology absorption and scrupulous adherence to regularity framework for strengthening the uniqueness and growth of UCBs. Desai (2006) on his study on selected UCBs in North Gujarat noticed that UCBs are facing the problems of high cost of business operation, low capital base, inadequate loan appraisal and credit planning, poor recovery performance, mounting overdue and relatively low level of customer satisfaction. Talla et al. (2011) in their study of Dharmavaram Co-operative Bank (DUCB) found that there was significant growth in the deposit mobilisation, membership, loans and advances, working capital, reserves in reference to DUCB but there was no significant growth in the increase of Net Profit and Earning Per Share. The bank was also facing the problem of overdue during the period of the study. Das (2012) analysed financial and operational viability of state co-operative banks in Northeast India during 2002-2009 and observed that all the financial variables (e.g. capital, reserves, deposits, advances, collection, etc) increased with higher growth rate but it was evidence from the study of some financial indicators that state co-operative banks in Northeast region were not at par with all India level. Babu (2012) observed that though some UCBs have shown credible performance in the recent years, a large number of banks have shown discernible signs of weakness. The operational efficiency is unsatisfactory and characterized by low profitability, ever-growing non-performing assets and relatively low capital base. Also urban Cooperative Banks have not been able to service the growing credit requirements of clients or the newer demands for loans in the fields of personal finance. In the interest of healthy competition the UCBs should be encouraged to grow. Soni & Saluja (2013) analysed the financial position of the DCC Bank Ltd Rajnandgaon through of ratio analysis technique and explored that solvency, liquidity and profitability of DCC Bank were sound but the bank had not succeeded in mobilising deposits

in satisfactory level because of heavy competition from other banks and financial institutions. The DCC Bank Rajnandgaon was also suffering from high overdue during the study period. Bhatt & Bhat (2013) attempted to assess the financial performance of co-operative banks operating in Jammu & Kashmir by using Data Envelopment Analysis of eight co-operative banks during the period 2001-01 to 2006-07. The result shows that three banks are relatively efficient when their efficiency is measured in terms of 'constant return to scale' and five banks are relatively efficient when their efficiency is measured in terms of 'variable return to scale'. The researchers argue that co-operative banks should ensure effective supervision of loans, strengthen the share capital base, boost banking investment operation, employ skilled manpower and mobilise deposits and advances through innovative deposits and loans-advances schemes. Umamaheswari (2013) studied five UCBs in the district of Coimbatore, Tamilnadu and found there was imperative need for launching direct development and transformation process of the co-operative banking system towards self-sufficient and self-reliance mode. Researcher also suggested the UCBs to prepare a comprehensive perspective plan for product diversification for enhancing their fee based income. Unnamalai (2014) conducted a study on working capital management of TDCC Bank for a study period of ten years (2000-01 to 2009-10) and found that the bank had not maintained the normal current asset ratio over the last nine out of ten years. The average return on working capital in the study period was only 0.34 percentages which was not satisfactory. The researcher also observed an increasing trend for cost of management which was affecting on the performance of the bank. Palanivelu & Prakash (2014) in their study of Shevapet Urban Co-operative Bank, Salem found that the profit earning capacity of the bank is poor. They suggested taking some effective initiatives such as 'total quality control initiative', 'management initiative' and 'cost reduction initiative' to be taken to improve net profit of the bank. Trivedi (2014) attempted to assess the financial performance of Surat People's Co-operative Bank by using CAMEL Model. The researcher had used ten years data of the bank and analyzed 28 ratios related to CAMEL Model and diagnosed that overall capital adequacy of the bank was satisfactory but the bank was not able to generate good proportion of operating income to beat its obligation. The asset quality, management quality and earning capacity of the bank were overall satisfactory but the bank was not so much active to convert its deposits into profitable advance. The main concern of the bank was its liquidity. The researcher had revealed that the short term liquidity of the bank was below the standard norm which is



hazardous to the financial health and survival.

The final set of this retrospective review of relevant literature to date on the proposed topic reveals a wide range of validity and source for this work, and some important clues to confirm its reality, as it is here can be identified. No survey has linked the relationship between profitability and management skills in the scheduled urban co-operative banking sector. Nor has any previous study examined the existence of management capacity and profitability affiliation of scheduled urban co-operatives banks in India.

### **3. OBJECTIVES OF THE STUDY**

The primary objective of the present study is to find out any affiliation among capital adequacy, management ability and profitability in Scheduled Urban Co-operative Banks operating in India. More specifically it seeks to focus mainly on the following issues:

- To assess the management efficiency and areas of weakness, if any;
- To investigate the relationship between management efficiency and profitability.

### **4. DATA AND METHODOLOGY**

The present study is based on secondary data taken from RBI Database on Indian Economy- Primary (Urban) Co-operative Banks' Outlook and annual reports of the respective scheduled UCBs. The published annual reports of the banks have been collected from the official website of these banks. The reason for restricting to this period was the latest data for analysis was available for this period.

At the beginning of our study there were 54 SUCBs as on 31<sup>st</sup> March 2009. Later Madhavpura Mercantile Co-op Bank Ltd, Charminar Coop.Urban Bank Ltd and Vasavi Coop Urban Bank Limited were excluded from the list of Second Schedule of RBI and lost their "Scheduled Bank" status. Again four new UCBs were included in that list. These were Apna Sahakari Bank Ltd., Vasai Vikas Sahakari Bank Ltd., Rajarambapu Sahakari Bank Limited and Jalgaon People's Co-operative Bank Limited. So, there were 54 SUCBs as on 31<sup>st</sup> March 2018. So there are 50 common banks that are present for all study periods. Among these 50 banks 4 banks which had negative CAR throughout the study period had been excluded. These are Amanath Co-operative Bank Limited, Indian Mercantile Co-operative Bank Limited, Mapusa Urban Co-operative Bank of Goa Limited and Rupee Co-operative Bank Limited. Thus our universe reduced to 46 SUCBs.

During the analysis of this study, various accounting and statistical tools were used. Accounting tools include Ratio analysis, while among statistical tools Arithmetic Mean(AM), Standard Deviation(S.D.), Coefficient of Variation(C.V.), test of significance(T-test), Correlation Coefficient(r), Multiple regression analysis, Coefficient of determination(R<sup>2</sup>) and linear regression equation have been applied. All of these methods have been used in various places, considering the need for analysis.

The present study raises issues that identify key variables affecting profitability. All the variables below have been used to test the hypothesis of our study. The dependent variable is defined as the profitability of the sample banks. The independent variable is usually interpreted as the financial ratios that are commonly used. The ratios used are selected from those used by Prasad & Ravinder (2012), Reddy (2012), Kumar et al (2012). The variables with their significance is accessible in table 1, below:

**Table 1**  
**Key Variables examined**

<i>Ratio</i>	<i>Formula</i>	<i>Significance</i>
Capital Adequacy Ratio (CARR)	$CARR = \frac{(Tier\ I\ capital + Tier\ II\ capital) \times 100}{Risk\ weighted\ assets}$ <p>Tier I Capital=(Share Capital+Free Reserve+Intangible assets)</p> <p>Tier II Capital=(Long term unsecured Loans+Loss Reserve+Hybrid Debt capital)</p> <p>Risk-weighted assets denote the minimum capital that banks should hold as a reserve to reduce the risk of bankruptcy.</p>	A bank with a higher capital adequacy is considered safer because if its loans go bad, it can make up for it from its net worth, indicates Bank's sound financial capability, health and stability
Business per employee (BPE)	$BPE = \frac{(Total\ Advance + Total\ deposits)}{Number\ of\ Employees}$	The ratio indicates the efficiency of the employees of a bank. It measures how well the employees are doing their normal banking works. Basically it states whether the bank is over staffed or under staffed. Higher BPE ratio means higher efficiency.



<i>Ratio</i>	<i>Formula</i>	<i>Significance</i>
SPREAD ratio	SPREAD ratio = $\frac{(Interest\ Income - Interest\ Expenditure) \times 100}{Total\ Assets}$	The difference between income earned as interest from advances and the expenditure incurred as the interest paid on deposits is called SPREAD. Thus SPREAD ratio is the ratio of net-interest margin to total assets. Higher the ratio means better the performance.
Return on Assets (ROA)	$ROA = \frac{Net\ profit\ after\ Tax \times 100}{Total\ Assets}$	ROA measures the efficiency of the bank to generate profit from its assets deployed. Higher the ratio indicates the bank is more profitable in relation to its total assets.
Cost of Deposits (CODP)	$CODP = \frac{Interest\ paid\ to\ the\ depositors \times 100}{Total\ Deposits}$	CODP is the ratio that indicates the efficiency of the management of a bank to minimise the cost of yield and maximise the profitability. Basically it states whether the efficiencies of the management are profitable or not. Lower CODP ratio means higher efficiency.
Net-Interest Income to Working Fund (Net-IIWF)	Net-IIWF ratio = $\frac{(Interest\ Income - Interest\ Expenditure) \times 100}{Average\ Working\ Fund}$	The difference between income earned as interest from advances and the expenditure incurred as the interest paid on deposits is called Net interest margin. Thus Net-IIWF ratio is the ratio of net-interest margin to Average Working Fund. Higher the ratio means better the performance.
Non-Interest Income to Working Fund (NNIWF)	NNIWF ratio = $\frac{(Total\ Income - Interest\ Income) \times 100}{Average\ Working\ Fund}$	Income generated other than from interest income such as commission, brokerage, fees, PoS commission, etc, are called non-interest income. Thus NNET-IIWF ratio is the ratio of not-interest Income to Average Working Fund. Higher the ratio means better the performance.

## 4. EMPIRICAL RESULTS AND ANALYSIS

### 4.1 Descriptive statistics

For determining the management ability, variables have been tested several segments. To make the analysis and interpretation more faithful and unambiguous, the values of AM, SD, CV, skewness, and kurtosis are calculated from the ratios.

**Table 3**  
**Descriptive Statistics**

<i>Year</i>	<i>CODP</i>	<i>Spread</i>	<i>Net-IIWF</i>	<i>NNIWF</i>	<i>ROA</i>	<i>CAR</i>	<i>BPE</i>
Mean	6.97	2.76	3.03	0.99	0.81	10.81	55.45
SD	0.76	0.21	0.23	0.25	0.28	3.30	16.40
COV(%)	10.84	7.68	7.67	25.76	34.31	30.52	29.57
Skew	-0.71	-0.56	0.93	1.15	-0.11	0.34	-0.02
Kurtosis	-1.18	-0.51	0.63	2.13	-1.02	-0.29	-1.01
Shapiro-Wilk Statistics	0.85	0.95	0.93	0.86	0.95	0.94	0.96
Sig.	0.057	0.620	0.499	0.069	0.726	0.590	0.839

Though there is no standard set for CODP by RBI or by any regulatory authority but the average CODP of the SUCBs (6.97) is satisfactory. This indicates that efficiencies of the management of these banks in the work of collecting and maintaining deposits by expending less are satisfactory. The coefficient variation (10.84%) of the sample ratios also indicates the consistency during the study period of these banks. A lower variability expresses efficiency to manage the CODP to a desirable standard. Skewness, Kurtosis and Shapiro-Wilk Statistics with probability indicates the CODP ratio of these banks is approximately normally distributed.

The average SPREAD ratio of the SUCBs (2.76) is satisfactory as it is more or less similar to its standard (2.50) for banking sector, which is taken as the criterion. This means the sample banks are earning satisfactorily for every rupee of investment made in assets. Again, the coefficient of variation (7.68%) of the sample ratios shows consistency during the study period of these banks. A lower variability expresses better efficiency to manage the SPREAD ratio to a desirable standard. Skewness, Kurtosis and Shapiro-Wilk Statistics with probability clearly indicates the SPREAD ratio of the sample banks is approximately normally distributed.

The average Net-IIWF of the SUCBs (3.03) is satisfactory as it is more or less similar to its standard (3.00), which is taken as the criterion. This indicates that the sample banks are efficient to generate income by using their working funds. The coefficient variation (7.67%) of the ratios also indicates consistency during the study period of these banks. A lower variability expresses higher efficiency to manage the Net-IIWF to a desirable standard. Skewness, Kurtosis and Shapiro-Wilk Statistics with probability clearly indicates the Net-IIWF of the sample banks is approximately normally distributed.

The average NNIWF of the SUCBs (0.99) is satisfactory as it is more or less similar to its standard (1.00), which is taken as the criterion. This indicates that the sample banks are efficient to generate income other than from the source of interest income by using their working funds. However, the coefficient variation (25.76%) of the ratios indicates less consistency during the study period of these banks. A lower variability expresses lower efficiency to generate income other than from interest to a desirable standard. Skewness, Kurtosis and Shapiro-Wilk Statistics with probability clearly indicates the NNIWF of the sample banks is approximately normally distributed.

The average ROA of the sample SUCBs (0.81) is not satisfactory as it is lower than its standard (0.90), which is taken as the criterion. This indicates that the efficiencies of using total assets in profit generation of these banks are not satisfactory. Again, the coefficient variation (34.31%) of the sample ratios shows the less consistency during the study period of these banks. A higher variability expresses less efficiency to manage the ROA to a desirable standard. Skewness, Kurtosis and Shapiro-Wilk Statistics with probability clearly indicates the ROA ratio of the sample banks is approximately normally distributed.

The average CAR (10.81) of the sample SUCBs is satisfactory because it is higher than its standard 9% which is prescribed by RBI for the Scheduled Urban Co-operative Banks. This indicates its capability to absorb any unexpected loss arising from risk assets. But, a high coefficient variation of 30.52% indicates the less consistency during the study period of these banks. A higher variability expresses less efficiency to manage the CARR to a desirable standard. Skewness, Kurtosis and Shapiro-Wilk Statistics with probability clearly indicates that the CARR of the sample banks is normally distributed.

Though there is no standard set for BPE by RBI or by any regulatory authority but the average BPE of the sample SUCBs (55.45) is satisfactory. This indicates that efficiencies of the employees of the sample banks in the work of collecting and mobilizing of deposits and advances are satisfactory.

However, the coefficient variation (29.57%) of the sample ratios indicates the less consistency during the study period of these banks. A higher variability expresses less efficiency to manage the BPE to a desirable standard. Skewness, Kurtosis and Shapiro-Wilk Statistics with probability clearly indicates the BPE ratio of the sample banks is approximately normally distributed.

## 4.2 Correlation statistics

By and large, Correlation analysis tries to find out the degree and direction of association between two variables in the study. If there is any cause and effect relation between two variables in a bivariate distribution there should have a high degree of correlation between them. The co-efficient of correlation is being denoted by “r”. The correlation is studied by using Karl Pearson’s formula which is-

$$r_{xy} = \frac{\Sigma(xy) - \Sigma(x) \cdot \Sigma(y)}{\sqrt{[N\Sigma x^2 - \Sigma x^2][N\Sigma y^2 - \Sigma y^2]}}$$

Pearson’s correlation analysis is used to see the relationship between two variables in a bivariate distribution.

**Table 3**  
**Correlation Matrix**

	<i>CODP</i>	<i>Spread</i>	<i>Net-IIWF</i>	<i>NNIWF</i>	<i>ROA</i>	<i>CAR</i>	<i>BPE</i>
<i>CODP</i>	1						
<i>Spread</i>	-0.169 (0.641)	1					
<i>Net-IIWF</i>	-0.429 (0.216)	0.252 (0.482)	1				
<i>NNIWF</i>	0.241 (0.503)	-0.588 (0.074)	-0.373 (0.288)	1			
<i>ROA</i>	0.018 (0.960)	0.151 (0.677)	0.132 (0.716)	0.170 (0.639)	1		
<i>CAR</i>	-0.491 (0.150)	-0.078 (0.829)	-0.169 (0.640)	0.181 (0.616)	-0.319 (0.368)	1	
<i>BPE</i>	0.186 (0.606)	0.372 (0.290)	-0.650 (0.042)	0.100 (0.784)	-0.075 (0.836)	0.372 (0.290)	1

Table 3 shows the results of correlation coefficients and p-values are listed in parenthesis. It shows ROA is positively correlated with CODP, CAR, BPE, NNWIF, and Spread ratio with higher probability.

### 4.3 Multiple regression analysis

The most elegant multiple regression technique is used to study the combined effect of all selected ratios that indicate a company’s performance in terms of profitability. The most popular “t” test has been used to test the regression coefficient. In this study, Cost of Deposit (CODP), Spread ratio, Business per Employee (BPE), Non-Interest Income to Working Fund (NNIWF) and Capital Adequacy (CAR) ratio have been taken as the explanatory variables and on the other hand return on assets (ROA) ratio has been used as the dependent variable.

When ROA is being taken as a dependent variable, the regression model used in this study is-

$$ROA = \alpha + \beta_1 \text{ CODP} + \beta_2 \text{ Spread} + \beta_3 \text{ NNIWF} + \beta_4 \text{ CAR} + \beta_5 \text{ BPE} + \epsilon_t$$

Where  $\alpha$ ,  $\beta_1$ ,  $\beta_2$ ,  $\beta_3$ ,  $\beta_4$ , and  $\beta_5$  are the parameters of the ROA line and  $\epsilon_t$  is the unexplained variables or error terms.

**Table 4**  
**Multiple Regression Analysis**

Model		Unstandardized Coefficients		t	Sig.	Collinearity Statistics	
		B	Std. Error			Tolerance	VIF
1	(Constant)	-.024	3.595	-.007	.995		
	CODP	-.113	.232	-.487	.652	.421	2.377
	Spread	.544	.872	.625	.566	.378	2.644
	NNIWF	.643	.614	1.048	.354	.532	1.879
	CAR	-.045	.056	-.800	.469	.379	2.637
	BPE	-.001	.011	-.051	.962	.384	2.605

**Model Summary<sup>b</sup>**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson	F	Sig.
1	.574	.329	-.509	.3412703	2.933	0.939	<b>0.833</b>

a. Predictors: (Constant), BPE, CODP, CAR, Spread, NNIWF

b. Dependent Variable: ROA

Table 4 discloses that multiple regression result between ROA and the explanatory variables are unauthenticated as the result of variance inflation factor (VIF) can not satisfy the model (even rule of thumb of statistics), i.e., VIF value exceeds 2. We, therefore, remove Spread from the regression model and lay down a new model of linear regression..

New model of Multiple Regression is:

$$ROA = \alpha + \beta_1 CODP + \beta_2 NNIWF + \beta_3 CAR + \beta_4 BPE + \epsilon_t$$

Where  $\alpha$ ,  $\beta_1$ ,  $\beta_2$ ,  $\beta_3$ , and  $\beta_4$  are the parameters of the ROA line and  $\epsilon_t$  is the unexplained variables or error terms.

The results are shown in Table-5, below:

**Table 5**  
**Multiple Regression statistics**

Model		Unstandardized Coefficients		t	Sig.	Collinearity Statistics	
		B	Std. Error			Tolerance	VIF
1	(Constant)	2.002	1.451	1.380	.226		
	CODP	-.170	.200	-.852	.433	.498	2.008
	NNIWF	.421	.469	.899	.410	.800	1.250
	CAR	-.059	.048	-1.240	.270	.457	2.186
	BPE	.004	.008	.497	.640	.663	1.509

**Model Summary<sup>b</sup>**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson	F	Sig.
1	.514	.264	-.325	.3197769	2.415	.448	.772

a. Predictors: (Constant), BPE, CODP, CAR, NNIWF

b. Dependent Variable: ROA

Table 4 discloses that multiple regression result between ROA and the explanatory variables are still unauthenticated as the result of variance inflation factor (VIF) can not satisfy the model (even rule of thumb of statistics), i.e., VIF value exceeds 2. We, therefore, remove CAR from the regression model and lay down a new model of linear regression..

New model of Multiple Regression is:

$$ROA = \alpha + \beta_1 CODP + \beta_2 NNIWF + \beta_3 BPE + \epsilon_t$$

Where  $\alpha$ ,  $\beta_1$ ,  $\beta_2$ , and  $\beta_3$  are the parameters of the ROA line and  $\epsilon_t$  is the unexplained variables or error terms.

The results are shown in Table 6, below:

**Table 6**  
**Multiple Regression Analysis**

Model		Unstandardized Coefficients		t	Sig.	Collinearity Statistics	
		B	Std. Error			Tolerance	VIF
1	(Constant)	.721	1.064	.678	.523		
	CODP	-.003	.154	-.019	.986	.915	1.092
	NNIWF	.198	.452	.437	.677	.939	1.065
	BPE	-.002	.007	-.225	.829	.962	1.039

**Model Summary<sup>b</sup>**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson	F	Sig.
1	.194	.037	-.444	.3338083	2.203	.078	.970

a. Predictors: (Constant), BPE, CODP, NNIWF

b. Dependent Variable: ROA

The robustness of the association between the dependent variable (ROA) and all the explanatory variables taken together except BPE and NNIWF and the impact of these explanatory variables on ROA are given in Table-6. This was seen from the table above that an increase in CODP by one units; the ROA decreased by 0.003 units and it was statistically insignificant at 5percent level. When NNIWF is increased by one unit; the ROA increased by 0.198 unit and that was statistically insignificant at 5 percent level. Similarly, when BPE is increased by one unit; the ROA decreased by 0.002 unit and that was statistically insignificant at 5 percent level. The multiple correlation coefficients between dependent variable, ROA and the explanatory variables taken together are 0.194, which indicates that the ROA is amply retaliated by its explanatory variables. In addition it is visible from the value of R<sup>2</sup> that 3.7% of the variation in ROA is accounted by the combined variation of the independent variables. Standard error of the estimates being very low and that certifies that there really exists a line of estimates among the variables. Adjusted R<sup>2</sup> signifies that 44.4% variation of the ROA is explained by the explanatory variable.

The value of F=0.078 is higher than  $\alpha$  (0.05); it is insignificant and substantiates whatever occurs one of the explanatory variables is supportive in the prediction of ROA. With a view to avoid multicollinearity problem, we removed BPE and



NNIWF from the regression equation and find VIF statistics below 2 which indicates that there is no multicollinearity problem. Again, Durbin-Watson statistics (2.596) signifies that errors terms are not auto-correlated.

## 5. CONCLUSIONS

The importance of the present study is to find out the relation between management efficiency and profitability. A descriptive statistics explore that the association between management ability and profitability in terms of Non-Interest Income to Working Fund (NNIWF) is very satisfactory and positively related. The affiliation of management ability with profitability in terms of Cost of Deposits (CODP) and BPE is negatively related. Thus we can conclude that NNIWF have a positive impact on profitability. CODP and BPE have a negative impact on profitability. Multiple regression tests confirm that there is no association of CAR and Spread with profitability. The multiple regression among the dependent variable ROA and the independent variable taken together were 0.194 indicates that the profitability is moderately responded by its independent variables. Therefore the management of these banks should concern to enhance the ability of management decision making specially unexplained variables in purpose of maximising profitability.

The study extremely depends on the published financial data, so it is subject to all limitations inherent with published data. Again the study period is limited to 10 years only and selected accounting ratios are taken from RBI Database on Indian Economy- Primary (Urban) Co-operative Banks' Outlook.

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