



# An Analysis of Financial Statement of Selected Co-Operative Bank using Financial Ratio to predict their Profitability (INS Bank)

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## Abstract:

*The study examined the analysis of financial ratio of select co-operative bank's financial statement to predict profitability. The study used correlation test developed by Pearson and multiply regression test to create predictor model which help to bank for increasing their profitability. In this study INS bank selected as a sample. Financial data from this bank during the period from 2013-14 to 2017-18 was measured for twelve independent variable and one dependent variable. The outcomes also disclosed there is relationship between dependent variable and independent variables in terms of net profit to owner's fund ratio. The regression analysis reveals the variable gross nonperforming assets ratio had direct relationship with net profit to owner's fund ratio. At the end of the study research created one financial model for INS bank which helps bank to increase its profitability.*

**Keywords:** Net profit, Financial Performance, Financial Statement, Owner's Fund, Profitability

## 1. Introduction

Schedule banks and non schedule banks play a very useful and crucial role for the healthy economy; co-operative bank is one of them. The blood is needed to run all the part of human body in same way co-operative bank needed to run all the financial and business activity in rural area. Co-operative bank provides finance to proprietors, farmers, small scale industries, businessman and those who need money to run a business in rural area. Co-Operating banks play a very significant role in saving of money of people of rural area. For the Indian economy these banks play important role in rural area to run businesses. These co operative banks are registered under the co operative society act, 1912. There are two types of cooperative banks fall under banking structure, one is Urban Co-operative bank and another is state co-operative bank. The INS Bank Limited was constituted in 1969 at Idar. The INS Bank is Co-operative bank of rural area falls under schedule bank of banking structure in India. The INS bank refer to Idar Nagrik Sahkari Bank Limited. Businessmen, Proprietors, industrialists, and social workers are in the BoDs of INS Bank. Recently INS Bank completed 50 years and has total assets of 73 crores, total deposit of 55 crores, total advances of 24 crores and net profit of 54 lacs. RTGS, NEFT, Demand draft and SMS banking services has been provided by the INS Bank to their customers.

## 2. Methodology

### Title of Problem

“An Analysis of Financial Statement of Selected Co-Operative Bank using Financial Ratio to predict their Profitability”

## 3. Objectives of the Study

1. To analyze financial performance of INS Bank
2. To evaluate the profitability of INS Bank in terms of NP/OF ratio.

3. To develop model for the bank for predicting its profitability.

The present research study predict the financial performance of INS Bank using Bivariate Correlation coefficient test of Pearson and Multiply regression analysis. In this analysis INS bank was selected as a sample and INS Bank is co-operative bank fall under banking structure. For this study secondary data was collected from the bank’s annual report. The period of this study is five year from 2013-14 to 2017-18. The relationship with dependent variable to independent variable is examined with the help of correlation analysis. There are twelve independent variable and one dependent variable examined for this study. To study relationship between NP/OF ratio to independent variable, multiply regression analysis used. MS Excel is used for summarized data and SPSS used to conduct tests.

### 3. List of Ratios

Following ratios are used to determine profitability of INS bank.

Code	Name of Ratio	Variable Type
FD/TD	Fixed Deposit to Total Deposits	Dependent
CD/TD	Current Deposits to Total Deposits	Dependent
SD/TD	Saving Deposits to Total Deposits	Dependent
SA/TA	Short Term Advances to Total Advances	Dependent
MA/TA	Medium Term Advances to Total Advances	Dependent
LA/TA	Long Term Advances to Total Advances	Dependent
I/TD	Investment to Total Deposits	Dependent
CSTD	Cash to Total Deposits	Dependent
ICFD/TD	Investment in Current and Fixed Deposits to Total Deposits	Dependent
GNPA/TA	Gross Non Performing Assets to Total Assets	Dependent
II/TA	Interest Income to Total Income	Dependent
IE/TD	Interest Expenses to Total Deposits	Dependent
NP/OF	Net Profit to Owner's Fund	Independent

### 4. Analysis and Result

The financial performance of INS Bank is measured using pearson correlation and kendall’s correlation coefficient test. Table 1 showing financial ratios of financial statement of INS bank during the period 2013-14 to 2017-18. There are eleven independent and one dependent ratio has been measured to predict the financial performance of INS Bank.

**Table 1: Ratios of INS Bank**

Year	Independent Variable											Dependent Variable	
	FD/T D	CD/T D	SD/T D	SA/T A	MA/T A	LA/T A	I/TD	CS/T D	ICFD/T D	GNPA/ TA	II/TA		IE/T D
2013-14	66.83	4.93	28.24	37.13	44.39	18.47	26.83	4.12	47.25	3.31	23.82	7.11	7.43
2014-15	66.04	5.00	28.96	41.70	41.21	17.09	26.34	4.76	47.69	1.83	24.62	7.14	9.02
2015-16	66.46	5.11	28.43	41.05	42.13	16.82	25.22	4.76	50.58	1.75	25.41	7.18	9.05
2016-17	60.79	5.72	33.50	44.03	38.21	17.76	32.88	4.91	45.20	2.43	26.52	6.46	8.75
2017-18	59.54	5.21	35.25	41.96	37.40	20.64	55.86	4.84	22.83	2.37	26.03	6.39	8.50

Figure 1 indicates fixed deposit to total deposit ratio and net profit ratio to owner’s fund ratio. There is decrease in FD/TD ratio from 66.46% to 59.54 % during the period 2015-16 to 2017-18. In same way dependent NP/OF ratio is also decreased from 9.05% to 8.50% during the period 2015-16 to 2017-18. Higher FD/TD ratio indicates banks have more fund to advance loans to customers for certain period. Figure 2 indicates CD/TD ratio of bank and its showing continuous increasing from 4.93% to 5.72%

during the period 2013-14 to 2016-17. Current deposit means banks have to pay amount of current account to account holder at anytime of demand of account holder so higher CD/TD ratio indicates bank can not advances more loans to customers.

Figure 3 reveals SD/TD ratio of INS bank during the period of last five years. Its continuous increased from 28.43% to 35.25% during the period 2015-16 to 2017-18. but NP/OF ratio is decreased from 9.05% to 8.50% during the period 2015-16 to 2017-18 so there is a inverse relationship between SD/TD ratio to NP/OF ratio. Saving deposits has limitation of transactions for the account holder so banks can earn interest by advancing short term loan from saving deposits. SA/TA ratio of INS bank is calculated by short term advances divided by total advances. Banks earn high rate of interest from short term advances and its 35.25% in 2017-18. Banks pay short term loan to proprietors and borrowers for short period of time in terms of overdraft. This time is limited to 30 days to 90 days depending upon banks. Interest rate on short term loan is higher then medium term loan and long term loan. So higher ratio indicates banks have to earn high rate of interest on short term advances for short period then medium and long term advances.

Figure 1: FD/TD Ratio

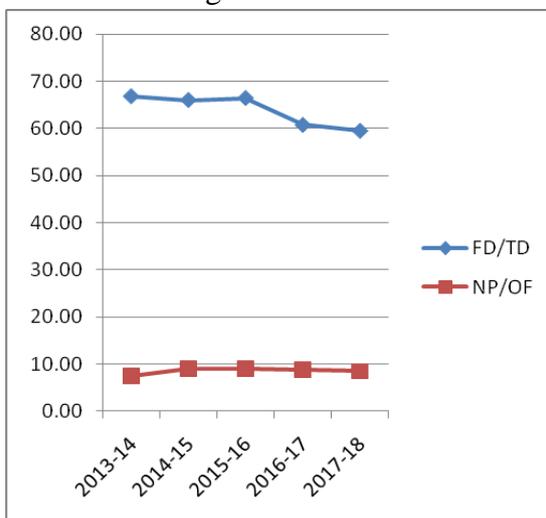


Figure 2: CD/TD Ratio

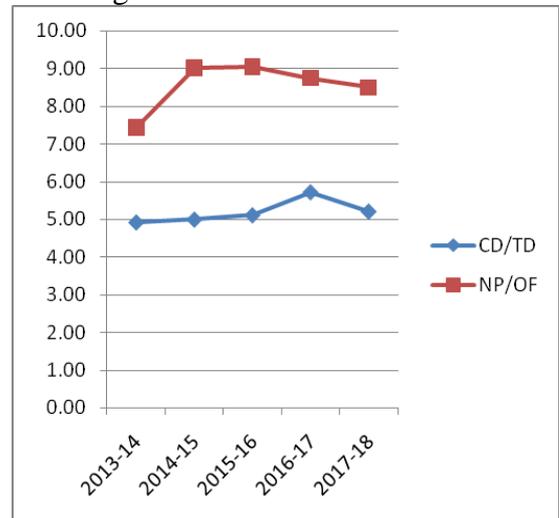


Figure 3: SD/TD Ratio

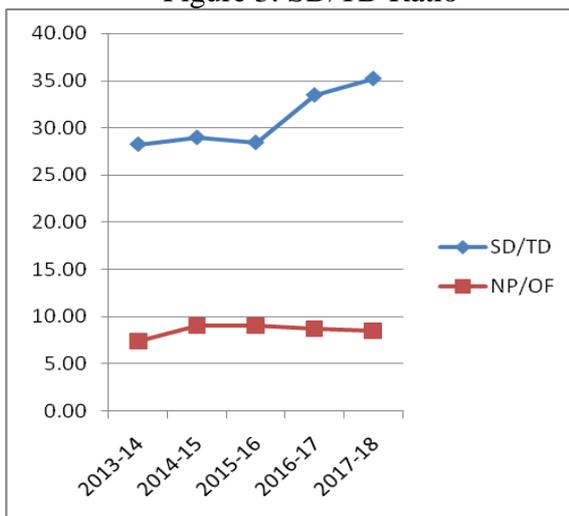


Figure 4: SA/TA Ratio

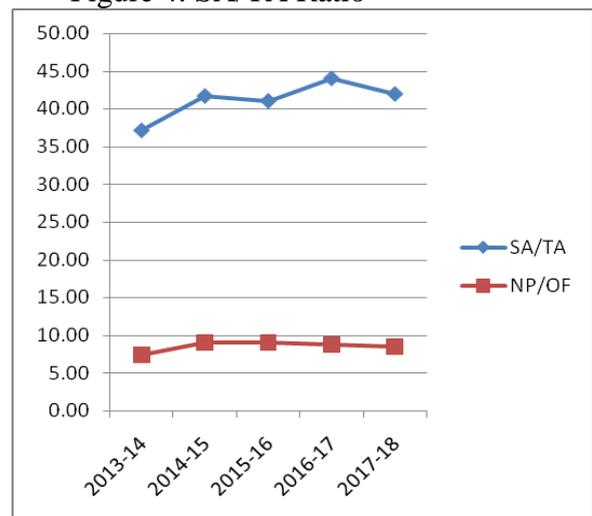


Figure 5 indicates MA/TA ratio of INS bank. MA/TA ratio of INS bank decreased from last three years from 4.13% to 37.40%. NP/OF ratio is also decreased in last three years that means MA/TA ratio and NP/OF ratio have direct relationship. Interest rate on medium term advances is lower then short term advances and higher then long term advances. Higher MA/TA ratio reveals bank earn very good interest for certain period from medium term advances. Bank's long term advances to total advances

ratio is increased from 16.82% to 20.64% during the period 2015-16 to 2017-18. Figure 7 reveals investment to total deposit ratio of INS Bank. I/TD ratio of INS bank is highest in 2017-18 is 55.86% that means bank's total advances is lower than total deposit in 2017-18 that's why bank invested in investment. Cash to total deposit ratio of INS bank increasing continuous from 4.12% to 4.91% during the period 2013-14 to 2016-17.

Figure 5: MA/TA Ratio

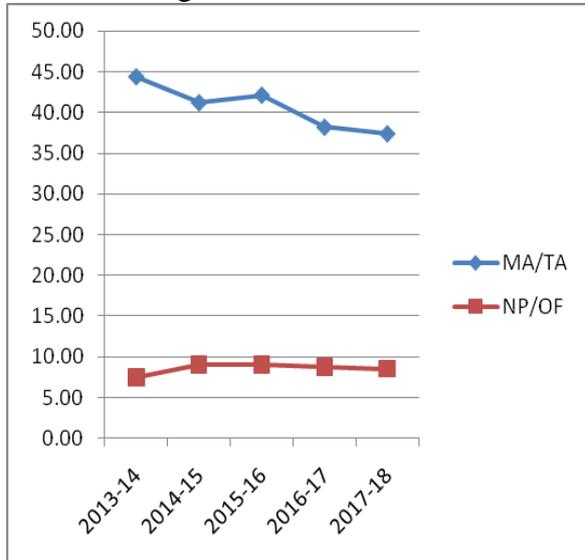


Figure 6: LA/TA Ratio

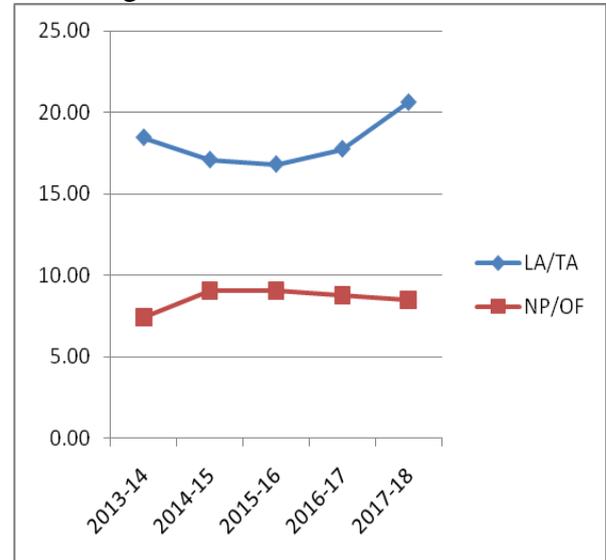


Figure 7: I/TD Ratio

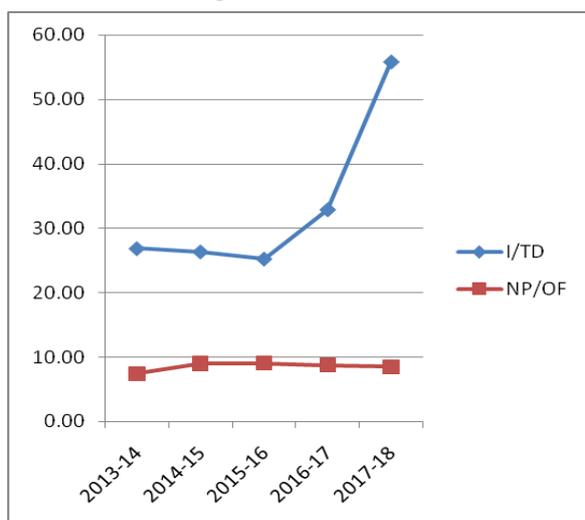


Figure 8: CS/TD Ratio

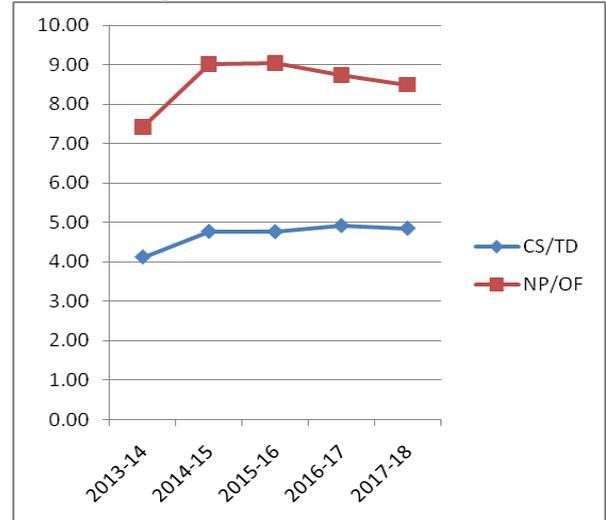


Figure 9 showing investment in current and fixed deposits ratio to total deposit ratio. Bank has invest remaining amount over the advances in current and fixed deposit. Lower ratio indicates bank has done good in advances ICFD/TD ratio of INS bank is 22.83% in 2017-18 and 45.20% in 2016-17. That means this ratio fall 50% in last year. ICFD/TD ratio has direct relationship with dependent variable NP/OF ratio. NP/OF ratio also decreased in last year. In recent year all the banks suffering from NPA problems and NPA has direct effect on profit of the bank. GNPA/TA ratio of INS Bank 2.43% in 2016-17 and 2.37% in 2017-18 that means decreased from previous year its goods for the bank because bank have GNPA is affecting the profitability of banks. Figure 11 indicates II/TA ratio of INS bank. Interest income to total advances indicates bank's business. Higher ratio reveals good for the bank's profitability. Its continuous increased from 23.82% to 26.52% during the period 2013-14 to 2016-17. That means banks earning is continuously increasing in terms of interest. NP/OF ratio is also increased in same direction. IE/TD ratio is 6.46% in 2016-17 and 6.39% in 2017-18. Dependent variable also decreased in same direction.

Figure 9: ICFD/TD Ratio

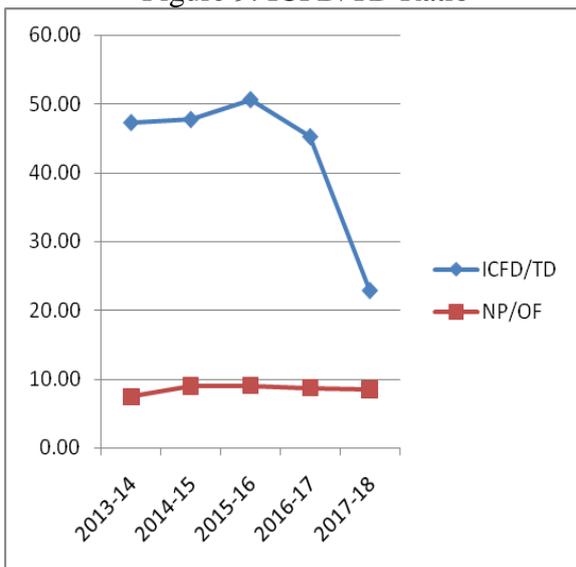


Figure 10: GNPA/TA Ratio

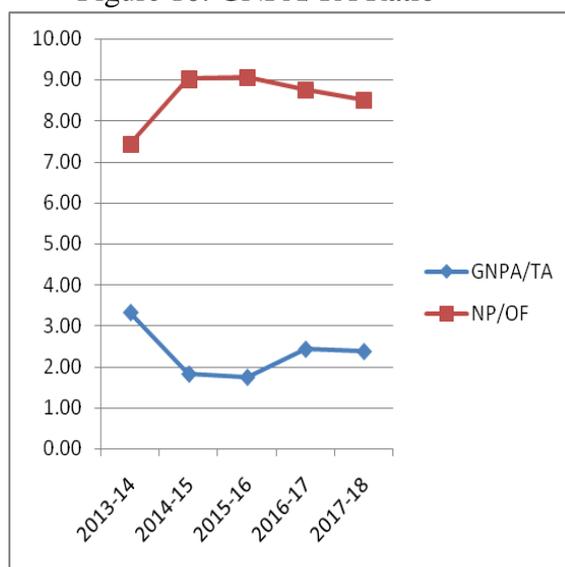


Figure 11: II/TA Ratio

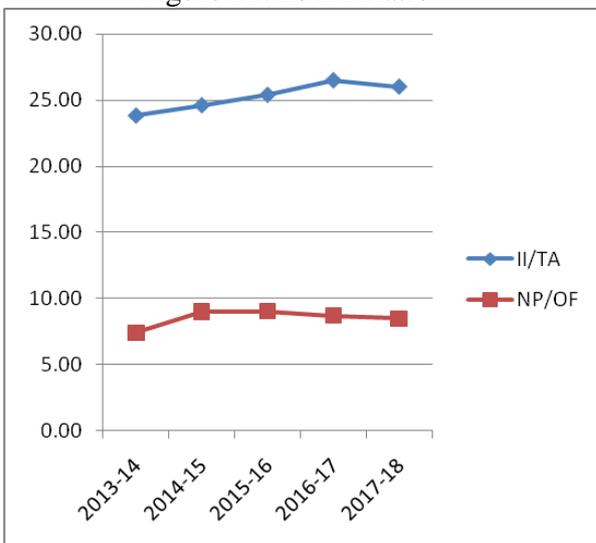


Figure 12: IE/TD Ratio

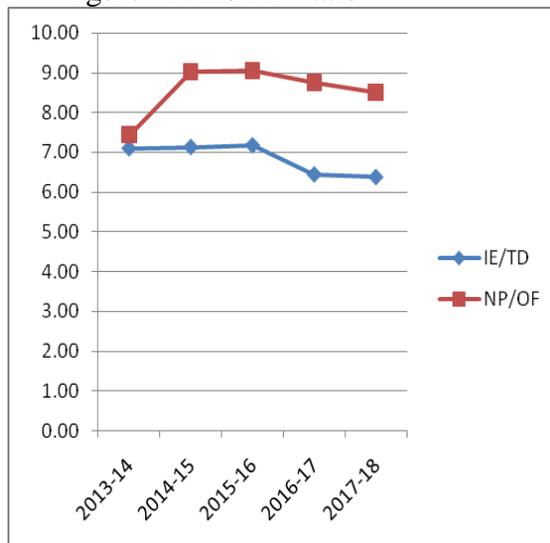


Table 2 showing mean and standard deviation of independent and dependent variables. The result of the Pearson Correlation test and multiple regression analysis for the all ratios are given in table 3. The Table 3 also indicates, the correlation analysis at different significant level, that is significant at 0.01 level and significant at 0.05 level for each independent variable and dependent variable. In this study NP/OF variable is taken as dependent variable.. It can be seen that, calculated value of FD/TD ratio to SD/TD Ratio: -0.998, FD/TD ratio to IE/TA ratio: 0.990, SD/TD ratio to IE/TD ratio: -0.985, SA/TA ratio to CS/TD ratio: 0.960, I/TD ratio to ICFD/TD ratio: -0.993 and GNPA/TA ratio to NP/OF ratio: -0.968 are significant at 1% level. Where as calculated value of FD/TD ratio to MA/TA ratio: 0.943, SD/TD ratio to MA/TA ratio: -0.938, SA/TA ratio to II/TA ratio: 0.885, MA/TA to II/TA ratio: -0.893, LA/TA ratio to I/TD ratio: 0.918, LA/TA ratio to ICFD/TD ratio: -0.939 and IE/TD ratio to MA/TA ratio: 0.894 are significant at 5% level. This result shows that above all variable are working together efficiently for increase profitability of INS Bank. Independent variable's relationship with dependent variable is also identified in this study. It can be observed that GNPA/TA ratio has statistically significant correlation with NP/OF ratio. Table 5 indicates out of twelve variable four variables are entered by enter method and those are IE/TD,GNPA/TA, ICFD/TD and II/TA. Table 6 reveals excluded variable for this study and excluded variables are FD/TD, CD/TD, SD/TD, SA/TA, MA/TA, LA/TA, I/TD and CS/TD. So from the above study table 7 reveals model summary and predictors are

IE/TD,GNPA/TA, ICFD/TD and II/TA. To examine whether the regression model as a whole is significant R-square is calculated on table 7. Table 7 indicates that 100% variation in NP/OF.

**Table 2: Mean and Standard Deviation**

Ratios	Mean	Std. Deviation	N
FD/TD	63.932	3.478	5
CD/TD	5.194	0.312	5
SD/TD	30.874	3.263	5
SA/TA	41.173	2.520	5
MA/TA	40.668	2.875	5
LA/TA	18.158	1.528	5
I/TD	33.426	12.890	5
CS/TD	4.679	0.320	5
ICFD/TD	42.710	11.276	5
GNPA/TA	2.340	0.625	5
II/TA	25.280	1.082	5
IE/TD	6.855	0.396	5
NP/OF	8.550	0.668	5

**Table 3: Pearson Correlation Test**

Ratios	FD/T D	CD/T D	SD/T D	SA/T A	MA/T A	LA/T A	I/TD	C S/T D	ICFD/T D	GNPA/ TA	II/T A	IE/T D	NP/O F
FD/TD	1	-.715	.998 <sup>-</sup>	-.667	.943 <sup>-</sup>	-.675	.845 <sup>-</sup>	-.607	.784	-.018	.831 <sup>-</sup>	.990 <sup>-</sup>	-.150
		.174	.000	.219	.016	.211	.071	.277	.117	.977	.081	.001	.809
CD/TD	-.715	1	.667	.794	-.714	.033	.242	.630	-.131	-.088	.866	.738 <sup>-</sup>	.326
	.174		.219	.109	.176	.958	.695	.254	.833	.888	.058	.154	.592
SD/TD	.998 <sup>-</sup>	.667	1	.635	.935 <sup>-</sup>	.717	.878	.587	-.823	.028	.803	.985 <sup>-</sup>	.129
	.000	.219		.250	.019	.173	.050	.298	.087	.965	.102	.002	.836
SA/TA	-.667	.794	.635	1	-.847	-.055	.309	.960 <sup>-</sup>	-.223	-.611	.885 <sup>-</sup>	.604	.781
	.219	.109	.250		.070	.931	.613	.010	.719	.273	.046	.280	.119
MA/TA	.943 <sup>-</sup>	-.714	.935 <sup>-</sup>	-.847	1	-.484	.759 <sup>-</sup>	-.826	.694	.301	.893 <sup>-</sup>	.894 <sup>-</sup>	-.458
	.016	.176	.019	.070		.409	.137	.085	.193	.622	.041	.041	.438
LA/TA	-.675	.033	.717	-.055	-.484	1	.918 <sup>-</sup>	-.028	-.939 <sup>-</sup>	.441	.220	.686 <sup>-</sup>	-.426
	.211	.958	.173	.931	.409		.028	.964	.018	.457	.722	.201	.475
I/TD	-.845	.242	.878	.309	-.758	.918 <sup>-</sup>	1	.366	-.993 <sup>-</sup>	.084	.529	.812	-.038
	.071	.695	.050	.613	.137	.028		.545	.001	.893	.359	.095	.952
CS/TD	-.607	.630	.587	.960 <sup>-</sup>	-.826	-.028	.366	1	-.292	-.763	.854	.514	.876
	.277	.254	.298	.010	.085	.964	.545		.634	.134	.065	.376	.051
ICFD/T D	.784	-.131	-.823	-.223	.694	.939 <sup>-</sup>	.993 <sup>-</sup>	-.292	1	-.113	.427	.750	.090
	.117	.833	.087	.719	.193	.018	.001	.634		.856	.473	.144	.885
GNPA/ TA	-.018	-.088	.028	-.611	.301	.441	.084	-.763	-.113	1	.378	.146	.968 <sup>-</sup>
	.977	.888	.965	.273	.622	.457	.893	.134	.856		.531	.815	.007
II/TA	-.831	.866	.803	.885 <sup>-</sup>	.893 <sup>-</sup>	.220	.529	.854	-.427	-.378	1	.793	.552

\*\* . Significant at 1%.

\* . Significant at 5%.

**Table 5: Variables Entered/Removed<sup>b</sup>**

Model	Variables Entered	Variables Removed	Method
1	IE/TD, GNPA/TA, ICFD/TD, II/TA	.	Enter

a. Tolerance = .000 limits reached.

**Table 6: Excluded Variables<sup>b</sup>**

Model	Beta In	t	Significant	Partial Correlation	Co linearity Statistics
					Tolerance
FD/TD	. <sup>a</sup>	.	.	.	.000
CD/TD	. <sup>a</sup>	.	.	.	.000
SD/TD	. <sup>a</sup>	.	.	.	.000
SA/TA	. <sup>a</sup>	.	.	.	.000
MA/TA	. <sup>a</sup>	.	.	.	.000
LA/TA	. <sup>a</sup>	.	.	.	.000
I/TD	. <sup>a</sup>	.	.	.	.000
CS/TD	. <sup>a</sup>	.	.	.	.000

a. Predictors in the Model: (Constant), IE/TD, GNPA/TA, ICFD/TD, II/TA

**Table 7: Model Summary**

Model	R	R Square	Adjusted R Square	Standard Error of the Estimate
1	1.000 <sup>a</sup>	1.000	.	.

a. Predictors: (Constant), IE/TD, GNPA/TA, ICFD/TD, II/TA

**Table 8: Coefficients**

Model	Un-standardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
	B	Standard Error	Beta			Lower Bound	Upper Bound
(Constant)	19.323	.000		.	.	19.323	19.323
1 ICFD/TD	.019	.000	.318	.	.	.019	.019
GNPA/TA	-1.146	.000	-1.073	.	.	-1.146	-1.146
II/TA	-.098	.000	-.158	.	.	-.098	-.098
IE/TD	-.938	.000	-.556	.	.	-.938	-.938

a. Dependent Variable: NP/OF

Table 8 shows coefficients relationship between variables at 95% confidence level. The regression Analysis done using the following equation:

$$NP/OF=19.323+0.019(ICFD/TD)-1.146(GNPA/TA)-0.098(II/TA)-0.938(IE/TD)$$

Where dependent variable is NP/OF.

### 5. Limitations of the study

The present study is based on only one cooperative bank (INS Bank) from the Indian banking sector and its also limited to only five years. So result of this study limited to only INS Bank. The study have included ratios related to deposits, advances and profitability based on secondary data so qualitative factors not considered for this study. Only internal factors are considered for this study and external factors like GDP, Interest rates, Bank Rate, SLR etc. not considered for this study.

### 6. Conclusion and future Implications

Majority of the previously research studies done only on commercial bank and very less number of studies done on rural co-operative banks in terms of develop model for the banks. Based on the result we conclude that, INS bank focus on predictors variable like ICFD/TD, GNPA/TA, II/TA and IE/TD to set its NP/OF. If we have value of ICFD/TD, GNPA/TA, II/TA and IE/TD, we can predict NP/OF of INS Bank, Conversely we can set value of ICFD/TD, GNPA/TA, II/TA and IE/TD to get specific NP/OF and in this way we can plan for better financial management of bank. Here, I have taken only one bank and data of only five years. We can take more then one bank and long run average ratios and can develop a robust model to predict financial position of a particular bank or banks. It is positively expected that finding of this study would help to bank, shareholders and future researcher.

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