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AN ANALYTICAL STUDY ON THE EFFICIENCY OF SELECTED PRIVATE SECTOR BANKS IN INDIA BASED ON KEY PERFORMANCE INDICATORS

[1.]Tulilekha Sil & [2.]Priyanka Chakraborty

[1.]M.Phil Research Scholar, University of Calcutta, Kolkata, West Bengal

[2.]Lecturer, Department of Economics, Sonarpur Mahavidyalaya, Kolkata, West Bengal

ABSTRACT

The term efficiency means how effectively and efficiently a bank uses its resources to increase its profitability and productivity. For an analytical view, profitability and productivity complement each other and are interrelated. In India, the earliest instances of analysis of efficiency of banks was done by Luther Committee in the year 1977 which examined the productivity, efficiency and profitability of the nationalised banks from 1969 to 1975 on the basis of selected set of efficiency indicators. This paper aims to analyse the efficiency of selected private sector banks in India with respect to seven key performance indicators. Keeping in mind the limitations of secondary data sourced from published reports and websites, to analyse the computed efficiency and productivity ratios, F-Test single factor analysis of variance (ANOVA) has been used as a statistical measure. For the convenience of study, only a set of five selected private sector banks viz ICICI bank, HDFC bank, AXIS bank, FEDERAL Bank and YES Bank have been incorporated based on the technique of random sampling. The study has been confined for a period of five financial years starting from 2015-16 to 2019-20. The study resulted with a mixed response with regard to the efficiency of the banks in terms of profitability and productivity and demanded an improvement in some banks as the banks have not succeeded in acquiring full efficiency in all the years of study.

Keywords: Efficiency, Profitability, Productivity, Private Sector banks, Performance Indicators, Single-factor ANOVA.

1. INTRODUCTION:

Private sector banks are those whose more than fifty percent shares are held with private shareholders and not the Government of India. In the context of Indian banking industry, previously which was dominated by public sector banks, the inefficiency and lack of upgraded banking technology paved way for the private players to enter the market. The entry of private sector in the Indian banking industry was made possible by the policy guidelines of the Reserve Bank of India on 22nd January, 1993 that had opened the door for their participation on a large scale. It formally happened when UTI Bank Limited came into operation on 2nd April, 1994 with its registered office in Ahmedabad followed by the establishment of ten other private sector banks in the country. Since then the private banks have dedicated themselves to meet the challenging financial needs of the corporate world. Slowly with the expansion of their tentacles in every nook and corner of the country, private sector banks reached the household of the poorest of the poor. Today, they not only help in mobilising savings from the depositors and channelizing them

to various investment avenues, they also play a vital role in extending smaller credit and advances to the common masses thereby actively participating in the nation building process.

With the nationalisation of banks in 1969, the private banks had diminished significantly. However, with economic reforms of 1991, the Narsimhan Committee laid emphasis on the importance of healthy competition in the banking sector which was missing in the post nationalisation era. With RBI's liberalisation policy in 1990s, private banks boomed again and they have been classified as:

- Old private sector banks (that emerged prior to 1968)
- New private sector banks (that emerged after 1968)

At present, there are 22 private sector banks in India and the RBI is entrusted with the responsibility of supervising and regulating them under the Banking Regulation Act, 1949. Some of the leading private sector banks in India are HDFC bank with a market capitalisation as on July 2016 (Rs 329,757.41 cr), ICICI Bank (Rs 151,877.77 cr), Kotak Mahindra Bank (Rs 150,176.96 cr) respectively. The shares of these banks are actively traded on the Bombay Stock Exchange (BSE) and National Stock Exchange (NSE).

2. CONCEPTUAL FRAMEWORK:

The efficiency of the banks can be checked by using some of the selected key financial ratios as recommended by RBI. The following ratios were used by the researchers for the analysis of efficiency of banks for the period concerned:

- Return on Assets (ROA)
- Return on Equity (ROE)
- Capital Adequacy Ratio (CRAR)
- Net Interest Margin (NIM)
- Cost-Income Ratio (CI)

Return on Assets (ROA):

Return on Assets is the ratio which shows the percentage of how profitable a company's average total assets are in generating revenue. A lower ROA indicates poor return on assets or high operating expenses or losses in loans and advances. ROAs over 5% are generally considered good. ROA can be calculated as follows:

Return on Assets (ROA) = (Net Profit/ Average total assets)

Return on Equity (ROE):

Return on Equity is the ratio which reveals how much profit a company could earn in comparison to the total amount of shareholder's equity appearing in the balance sheet. A higher ROE indicates a better performance of the company. ROEs can be calculated as follows:

Return on Equity (ROE) = (Annual Net Income/ Average Shareholder's Equity)

Capital Adequacy Ratio (CRAR)

Capital Adequacy Ratio, also known as Capital to Risk Assets Ratio, is the ratio of a bank's available capital to risk-weighted assets. This ratio protects banks against excess leverage, insolvency and keeps them out of all difficulties. An appropriate CRAR ensures the sufficiency of bank's capital for the expansion of its business. According to RBI norms, Indian Scheduled commercial Banks are required to maintain a CRAR of 9% which is 1% higher than that of Basel III norms, while public sector banks are required to maintain it to 12%. CRAR can be calculated as follows:

Capital Adequacy Ratio (CRAR) = [(Tier I + Tier II + Tier III capital) / Risk Weighted Assets (RWA)]

Net Interest Margin (NIM):

Net Interest Margin is the ratio of Net Interest Income to Total Earning assets. Net Interest Income is the difference between interest earned and interest expended. NIM is an indicator of profitability and financial strength of the bank and its ability to manage interest rate risk. Net Interest Margin can be calculated as follows:

Net Interest Margin (NIM) = (Net Interest Income / Total Earning Assets)

Cost-Income Ratio (CI):

Cost to income ratio is the ratio which shows cost efficiency of a company. It shows a company's costs in relation to the income. The lower the cost income ratio of a bank, the more is the efficiency leading to an increase in the profitability. Cost to Income Ratio can be calculated as follows:

Cost-Income Ratio = (Cost / Income) where, cost = operating expenses and Income = Net Interest Income + All other income.

In the banking industry, human resources, being the most skilful and valuable assets help in contributing to both the profitability and efficiency of the banks leading to a better financial performance. The skills of the manpower help in achieving high productivity. The employee productivity of the banks can be measured by some key financial indicators as recommended by RBI. The following ratios have been used by the researchers for measurement of employee productivity:

- Business per Employee
- Profit per Employee

Business per Employee:

This ratio measures how much revenue each employee generates for the company, indicating mainly the staff productivity of a company. As banking plays a very crucial role in the entire service industry, the measurement of staff efficiency becomes much important in assessing the performance of the bank. Business per Employee can be calculated as follows:

Business per Employee = [(Deposits + Advances) / Total number of employees]

Profit per Employee:

This ratio indicates the profit or net revenue earned per employee of the bank. Higher profit or higher revenue always indicates the better productivity of the bank on part of the employees. Profit per Employee can be calculated as follows:

Profit per Employee = [(Net Profit / Total number of employees)]

REVIEW OF LITERATURE:

1. Bakar and Tahir (2009) in their research study had studied about ROA as a dependent variable and seven predictor variables were used as independent variables. Multiple Regression Analysis was used in the study which showed that credit risk and cost to income ratio are significant in determining the bank performance. The study concluded with the fact that artificial neutral network id more powerful in predicting bank performance.

2. Dr. Janet Jyothi Dsouza (2016) in her research paper made an evaluation of financial performance of public sector banks in India, mainly the liquidity, profitability and priority sector advances using the ratio analysis and concluded with the result that there needed an improvement in terms of liquidity and profitability of public sector banks during 2002-2011. Banks need to step forward towards sensitive lending for economic development of the country, ensuring the growth of financial sector.

3. Kajal Chaudhary and Monika Sharma (2011) in their study attempted to analyse the efficiency of public and private sector banks in managing NPA and concluded that an efficient management information system should be developed and the bank employees should be trained enough to take charge of the measures to prevent advances turning into NPA.

4. Binish Varghese M. And Suman Chakraborty, in their research study analysed the efficiency of private sector banks and made a comparison in performance of the old and new generation private sector banks, keeping profitability as the main factor for measuring performance. They measured the efficiency of new and old generation private sector banks for a period of 7 years using the CAMEL model and proved that new generation private banks are better in performance as compared to the old generation private banks.

5. Alam HM, Razra A, Akram M (2011), in their research compared the financial performance of public and private sector banks which were operating in Pakistan during 2006-2009. Bank size and financial ratios like liquidity ratio, leverage ratio, profitability ratio and asset quality ratio were taken into consideration for the study. The study concluded with different rankings for different sector of banks with respect to the financial ratios.

6. B. S. Bodla and Richa Verma Bajaj (2010), in their paper examined the efficiency, benchmarks and targets of private banks functioning in India. They applied Data Envelopment analysis (DEA) to judge the efficiency where focus was given on interest expenses, non-interest expenses and the non-performing assets. The study concluded that there is a lot of scope for the private banks to improve their efficiency level by decreasing the NPA level and improving other parameters like deposits, advances and investments.

3. SIGNIFICANCE OF THE STUDY:

It is important for the regulators and policy makers to meticulously study the performance of the financial institutions especially banking institutions as they have a strong and direct linkage with the performance of the economy. To do an analytical study on the efficiency of selected private sector banks in India, key performance indicators have been taken into consideration like Return on Assets (ROA), Return on Equity (ROE), Capital Adequacy Ratio (CRAR), Net Interest Margin (NIM), Cost-Income Ratio (CI), Business per Employee, Profit per Employee etc. Today, private sector banks in India play a pivoted role in economic development. Not only that, they are well equipped with modern technology, they are also better known for their professional and efficient management. Their high standards of customer service and prompt resolution of customer complaints have made it possible for them gain a reasonable position in the Indian Banking industry. Today even the remotest of the villages and the poorest of the poor have been brought under the purview of private banking. Today they give a tough competition to many bigger nationalised players solely based on the parameter of the quality of service they give to the customers. Today from the well to do masses to the poorest of the poor, every other person has a general inclination towards the private banking sector.

This has arisen the necessity to study and analyse the functioning of private banks with special reference to their efficiency, profitability, customer satisfaction, market share and general accessibility by the Indian masses. This paper is a small and humble attempt to fulfil the necessity with the aid of key performance indicators of some selected banks for a confined period of time. Although the primary function of the bank is to accept deposits from surplus sectors and lend money to the needful in the form of advances, today banks perform lot of other functions other than conventional lending and borrowing that they have been doing since inception. Out of 34 banks operating today in India, 22 banks are of private sector alone. Thus arises the necessity to critically evaluate and analyse the functioning of private banks more than the public banks and the kind of impact they have on the economy.

4. RESEARCH GAP:

Though many research studies have been performed focussing on the profitability and liquidity position of public and private sector banks considering the past years, but the researchers found out that no study on the efficiency of the private sector banks has been performed on efficiency of the private sector banks considering both the profitability and productivity in the recent years. Moreover, in most of the research papers, comparisons have been made between selected public and private sector banks or focus has been made on a particular bank for measuring efficiency, so the researchers found it important to have an analysis of efficiency of only selected private sector banks in terms of profitability and productivity and to compare between them based on the key performance indicators.

5. RESEARCH OBJECTIVES:

- To analyse the efficiency of the selected private sector banks operating in Indian banking industry with the help of various key efficiency ratios like Return on Assets (ROA), Return on Equity (ROE), Capital Adequacy Ratio (CRAR), Net Interest Margin (NIM) and Cost-Income Ratio (CI).
- To analyse the efficiency of the selected private sector banks in terms of employee's productivity with the help of key productivity ratios like Business per Employee and Profit per Employee.
- To compare the efficiency of the banks in terms of key performance indicators and to check whether there lies any significant difference between the banks in all the five years concerned.

6. RESEARCH METHODOLOGY:

6.1 Period of the study:

The period of the research study has been considered for five financial years starting from 2015-16 to 2019-20.

6.2 Data collection:

The study focuses mainly on the secondary data, collected and compiled from the published annual reports, management discussion and analysis report of selected private sector banks for the period concerned, websites like moneycontrol.com, various articles and journals and the official website of Reserve Bank of India (RBI).

6.3 Sample size:

The study considers five top private sector banks flourishing in Indian Banking Sector, namely ICICI Bank, HDFC Bank, AXIS Bank, FEDERAL Bank and YES Bank. The banks have been selected based on random sampling method.

6.4 Tools and techniques of analysis:

1. As accounting measure, different financial key ratios have been taken for the analysis.
2. As statistical measure, computed efficiency and productivity ratios have been analysed with the help of F-Test single factor Analysis of Variance (ANOVA) and the research hypothesis have been checked, keeping at 5% level of significance.

6.5 Research Hypothesis:

H_{01}: There exists no significant difference in Return on Average Assets of selected private sector banks.

H_{02}: There exists no significant difference in Return on Average Equity of selected private sector banks.

H_{03}: There exists no significant difference in Capital Adequacy Ratio of selected private sector banks.

H_{04}: There exists no significant difference in Net Interest Margin of selected private sector banks.

H_{05}: There exists no significant difference in Cost-Income Ratio of selected private sector banks.

H_{06}: There exists no significant difference in Business per employee of selected private sector banks.

H_{07}: There exists no significant difference in Profit per employee of selected private sector banks.

7. LIMITATIONS OF THE STUDY:

1. The study involves analysis considering selected number of banks.
2. The study is based on the data collected from mainly the secondary sources which have their own limitations.
3. The study is considering selected number of ratios for measuring efficiency and performance.

8. DATA PRESENTATION AND ANALYSIS:

Table 1: Return on Average Assets (ROA) (Figures in %)

YEARS	ICICI	HDFC	AXIS	FEDERAL	YES BANK
2015-16	1.49	1.75	1.72	0.57	1.7
2016-17	1.35	1.7	0.65	0.84	1.8
2017-18	0.87	1.93	0.04	0.75	1.6
2018-19	0.39	1.9	0.63	0.88	0.5
2019-20	0.81	2.01	0.2	0.94	-5.1
MEAN	0.982	1.858	0.648	0.796	0.1
VARIANCE	0.19652	0.01667	0.42997	0.02073	8.725

Source: Compiled from the Annual Reports of selected private sector banks and moneycontrol.com

Table 2: Table showing Analysis of Variance (ANOVA) of Return on Average Assets

Source of variation	***SS***	***Degree of freedom***	***MS***	***F calculated***	***P value***	***F crit***
Between banks	8.180584	4	2.045146	1.089130877	0.38863381	2.866081
Within banks	37.55556	20	1.877778			
Total	45.73614	24				

Source: Computed using Microsoft Excel 2007

Table 1 shows that there was a decline in the ratio of ROA for ICICI (1.49% in 2015-16 and 0.81% in 2019-20), AXIS (1.72% in 2015-16 and 0.2% in 2019-20) and YES Bank (1.7% in 2015-16 and -5.1% in 2019-20) during the period of study. But there was an increase in the ratio both for HDFC (1.75% in 2015-16 and 2.01% in 2019-20) and FEDERAL Bank (0.57% in 2015-16 and 0.94% in 2019-20) during the period.

From Table 2, the analysis resulted the value of F to 1.089130877 which is lower than the F critical value which is 2.866081, with a p value 0.38863381 (p value >0.05), indicating that the null hypothesis needs to be accepted at 5% level of significance. Thus the researchers conclude that there lies no significant difference in return on average assets between the selected private sector banks.

Table 3: Return on Average Equity (ROE) (Figures in %)

YEARS	ICICI	HDFC	AXIS	FEDERAL	YES BANK
2015-16	11.32	17.97	17.49	6.01	19.9
2016-17	10.34	18.04	7.22	9.89	21.5
2017-18	6.6	18.22	0.53	8.37	17.7
2018-19	3.16	16.3	8.09	9.81	6.5
2019-20	7.07	16.76	2.34	11.1	-81.8
MEAN	7.698	17.458	7.134	9.036	-3.24
VARIANCE	10.57312	0.75242	43.69083	3.79718	1963.138

Source: Compiled from the Annual Reports of selected private sector banks and moneycontrol.com

Table 4: Table showing Analysis of Variance (ANOVA) of Return on Average Equity

Source of variation	*SS*	*Degree of freedom*	*MS*	*F calculated*	*P value*	*F crit*
Between banks	1084.866	4	271.216426	0.670679834	0.6199345	2.866081
Within banks	8087.806	20	404.39031			
Total	9172.672	24				

Source: Computed using Microsoft Excel 2007

Table 3 shows that there was a decline in the ratio of ROE for ICICI (11.32% in 2015-16 and 7.07% in 2019-20), HDFC (17.97% in 2015-16 and 16.76% in 2019-20), AXIS (17.49% in 2015-16 and 2.34% in 2019-20) and YES Bank (19.9% in 2015-16 and -81.8% in 2019-20) during the period of study. The only bank which showed an increase in the ROE during the period concerned is FEDERAL bank (6.01% in 2015-16 and 11.1% in 2019-20).

From Table 4, the analysis resulted the value of F to 0.670679834 which is lower than the F critical value which is 2.866081, with a p value 0.6199345 (p value >0.05), indicating that the null hypothesis needs to be accepted at 5% level of significance. Thus the researchers conclude that there lies no significant difference in return on average equity between the selected private sector banks.

Table 5: Capital Adequacy Ratio (CRAR) (Figures in %)

YEARS	**ICICI**	**HDFC**	**AXIS**	**FEDERAL**	**YES BANK**
2015-16	16.64	15.5	15.29	13.93	16.5
2016-17	17.39	14.6	14.95	12.39	17
2017-18	18.42	14.8	16.57	14.7	18.4
2018-19	16.89	17.1	15.84	14.14	16.5
2019-20	16.11	18.5	17.53	14.35	8.5
MEAN	17.09	16.1	16.036	13.902	15.38
VARIANCE	0.76545	2.765	1.07288	0.79527	15.397

Source: Compiled from the Annual Reports of selected private sector banks and moneycontrol.com

Table 6: Table showing Analysis of Variance (ANOVA) of Capital Adequacy Ratio

Source of variation	*SS*	*Degree of freedom*	*MS*	*F calculated*	*P value*	*F crit*
Between banks	27.70094	4	6.925234	1.665071938	0.1974681	2.866081
Within banks	83.1824	20	4.15912			
Total	110.8833	24				

Source: Computed using Microsoft Excel 2007

Table 5 shows that CRAR depicted a slight decline for ICICI Bank, i.e from 16.64% in 2015-16 to 16.11% in 2019-20, and a considerable decline for YES Bank, from 16.5% in 2015-16 to 8.5% in 2019-20. But for the other three banks, the CRAR showed an increase in the ratio. HDFC has increased it from 15.5% in 2015-16 to 18.5% in 2019-20, AXIS has increased it from 15.29% in 2015-16 to 17.53% in 2019-20, FEDERAL Bank has increased it to 14.35% in 2019-20 from 13.93% in 2015-16. But overall it can be observed that all the four banks except YES Bank have maintained the required Capital Adequacy Ratio at the end of the period concerned, but the CRAR for YES Bank needs to be increased to the required ratio i.e 9%.

From Table 6, the analysis resulted the value of F to 1.665071938 which is lower than the F critical value which is 2.866081, with a p value 0.1974681 (p value >0.05), indicating that the null hypothesis needs to be accepted at 5% level of significance. Thus the researchers conclude that there lies no significant difference in Capital Adequacy Ratio between the selected private sector banks.

Table 7: Net Interest Margin (NIM) (Figures in %)

YEARS	ICICI	HDFC	AXIS	FEDERAL	YES BANK
2015-16	3.49	3.89	3.9	2.73	3.4
2016-17	3.25	3.83	3.67	2.65	3.4
2017-18	3.23	3.76	3.44	2.59	3.5
2018-19	3.42	3.87	3.43	2.62	3.2
2019-20	3.73	3.67	3.51	2.57	2.2
MEAN	3.424	3.804	3.59	2.632	3.14
VARIANCE	0.04148	0.00808	0.03925	0.00392	0.288

Source: Compiled from the Annual Reports of selected private sector banks and moneycontrol.com

Table 8: Table showing Analysis of Variance (ANOVA) of Net Interest Margin

Source of variation	*SS*	*Degree of freedom*	*MS*	*F calculated*	*P value*	*F crit*
Between banks	4.11848	4	1.02962	13.52165577	0.000017	2.866081
Within banks	1.52292	20	0.076146			
Total	5.6414	24				

Source: Computed using Microsoft Excel 2007

Table 7 shows that for ICICI Bank, NIM was 3.49% in 2015-16 which increased to 3.73% in 2019-20, for HDFC Bank, NIM was 3.89% in 2015-16 which decreased slightly to 3.67% in 2019-20, for AXIS Bank, the ratio was 3.9% in 2015-16 and decreased to 3.51%, for FEDERAL Bank, NIM was 2.73% in 2015-16 which decreased to 2.57% in 2019-20 and for YES Bank, the ratio has considerably decreased from 3.4% in 2015-16 to 2.2% in 2019-20. Overall, all the selected banks except YES bank have maintained NIM at a considerably good level at the end of the period concerned.

From Table 8, the analysis resulted the value of F to 13.52165577 which is higher than the F critical value which is 2.866081, with a p value 0.000017 (p value<0.05), indicating that the null hypothesis needs to be rejected at 5% level of significance. Thus the researchers conclude that there lies a significant difference in Net Interest Margin between the selected private sector banks.

Table 9: Cost-Income Ratio (Figures in %)

YEARS	ICICI	HDFC	AXIS	FEDERAL	YES BANK
2015-16	34.7	36.69	38.55	32.99	40.9
2016-17	35.78	37.84	40.96	33.85	41.4
2017-18	33.83	39.62	47.29	35.4	40.2
2018-19	43.56	38.41	45.45	33.54	43.5
2019-20	43.5	38.52	42.47	33.26	65.7
MEAN	39.274	38.21	42.944	33.808	46.34
VARIANCE	17.38888	1.14	12.15898	0.89437	118.643

Source: Compiled from the Annual Reports of selected private sector banks and moneycontrol.com

Table 10: Table showing Analysis of Variance (ANOVA) of Cost-Income Ratio

Source of variation	*SS*	*Degree of freedom*	*MS*	*F calculated*	*P value*	*F crit*
Between banks	454.2279	4	113.556984	3.779486469	0.01904086	2.866081
Within banks	600.9122	20	30.045612			
Total	1055.14	24				

Source: Computed using Microsoft Excel 2007

Table 9 shows that the Cost to Income Ratio for ICICI has increased from 34.7% in 2015-16 to 43.5% in 2019-20, for HDFC, it has increased from 36.69% in 2015-16 to 38.52% in 2019-20, for AXIS, it has increased from 38.55% in 2015-16 to 42.47% in 2019-20, for FEDERAL Bank, the ratio has increased from 32.99% in 2015-16 to 33.26% in 2019-20 and for YES Bank, it has increased at a considerable rate from 40.9% in 2015-16 to 65.7% in 2019-20. All the selected banks have shown a rise in Cost to Income ratio; still HDFC and FEDERAL Banks are in a better position than the other as they revealed a lower Cost-Income Ratio, depicting comparatively a better cost efficiency.

From Table 10, the analysis resulted the value of F to 3.779486469 which is higher than the F critical value which is 2.866081, with a p value 0.01904086 (p value<0.05), indicating that the null hypothesis needs to be rejected at 5% level of significance. Thus the researchers conclude that there lies a significant difference in Cost-Income Ratio between the selected private sector banks.

Table 11: Business per employee (Figures in crores)

YEARS	**ICICI**	**HDFC**	**AXIS**	**FEDERAL**	**YES BANK**
2015-16	118696176	115472348.9	138973029.5	1096340668	139952973.40
2016-17	115193098.7	142094024.1	139083338.5	1365821355	136713805.50
2017-18	129753214.8	163972185.7	149842826.7	1628993289	221664661.9
2018-19	142868072.1	177699813.9	168432243	1959850504	221948232.5
2019-20	142596981.9	183054361.6	163410991.9	2173855896	120492420.5
MEAN	129821509	156458547	151948486	1644972342	168154419
VARIANCE	167798400227932	775297872624352	185352895049608	189510847259125000	2453155068303420

Source: Compiled from the Annual Reports of selected private sector banks and moneycontrol.com

Table 12: Table showing Analysis of Variance (ANOVA) of Business per Employee

Source of variation	*SS*	*Degree of freedom*	*MS*	*F calculated*	*p-value*	*F crit*
Between banks	8924555097790740000	4	2231138774447680000	57.77384764	0.0000104	2.866081
Within banks	772369805981320000	20	38618490299066000			
Total	9696924903772060000	24				

Source: Computed using Microsoft Excel 2007

Table 11 shows that the Business per Employee of all the selected private sector banks have continuously increased during the period of 5 years by a considerable good amount which indicates that the productivity of the employees and other staffs was satisfactory. Overall, considering all the five banks under study, FEDERAL Bank

has the highest Business per Employee at the end of five years period followed by HDFC, AXIS, ICICI and YES Bank.

From Table 12, the analysis resulted the value of F to 57.77384764 which is much higher than the F critical value which is 2.866081, with a p value 0.0000104 (p value<0.05), indicating that the null hypothesis needs to be rejected at 5% level of significance. Thus the researchers conclude that there lies a significant difference in business per employee between the selected private sector banks.

Table 13: Profit per employee (Figures in lakhs)

YEARS	ICICI	HDFC	AXIS	FEDERAL	YES BANK
2015-16	1347597.82	1404398.73	1640303.74	3799106.23	1692964.4
2016-17	1183120.75	1725424.36	649854.14	6635688.5	1654706.29
2017-18	819281.33	1981431.6	46244.39	7019535.14	2316352.51
2018-19	387642.38	2149495.24	755022.33	9943151.88	813909.35
2019-20	798519.16	2244771.35	219478.74	12215210.61	-7146663.91
MEAN	907232.288	1901104.26	662180.668	7922538.47	-133746.272
VARIANCE	139890958236	115959360010.6	385214689272	1049600098784	1565437086564

Source: Compiled from the Annual Reports of selected private sector banks and moneycontrol.com

Table 14: Table showing Analysis of Variance (ANOVA) of Profit per Employee

Source of variation	***SS***	***Degree of freedom***	***MS***	***F calculated***	***p-value***	***F crit***
Between banks	211529226361038	4	52882306590259.5	9.869255401	0.00014117	2.866081
Within banks	107165747443991	20	5358287372199.54			
Total	318694973805029	24				

Source: Computed using Microsoft Excel 2007

Table 13 shows that the profit or net revenue per employee of all the selected private sector banks have not revealed a satisfactory result as for ICICI, AXIS and YES Banks, the profit per employee have decreased at the end of 5-year period, but HDFC and FEDERAL Banks have increased their profit per employee during the period. Among all the selected banks, FEDERAL Bank has the highest profit per employee followed by HDFC Bank.

From Table 14, the analysis resulted the value of F to 9.869255401 which is higher than the F critical value which is 2.866081, with a p value 0.00014117 (p value< 0.05), indicating that the null hypothesis needs to be rejected at 5% level of significance. Thus the researchers conclude that there lies a significant difference in profit per employee between the selected private sector banks.

9. CONCLUSION AND RECOMMENDATIONS:

The ROAs of ICICI, AXIS and YES banks have decreased over time, probably due to over-investment in assets, which had failed to produce revenue growth, but for HDFC and FEDERAL banks, it has shown an increasing trend, indicating that the banks are performing better in increasing their profitability with each investment.

The ROEs of ICICI, HDFC, AXIS and YES banks have decreased over time, indicating that the banks could not make much profit and increase shareholder's value simultaneously. Therefore, an improvement in financial leverage, net profit margin, asset turnover, reduction in tax expenses can boost up the ROE. However, the FEDERAL Bank has significantly increased its ROE over time.

For CRAR, it was observed that, HDFC, FEDERAL and AXIS banks have increased the ratio over time, ICICI has slightly decreased and for YES bank, it needs to be improved to reach to 9% to fulfil the required ratio as recommended by RBI norms. But all the banks except YES Bank have maintained their CRAR at a considerable

good level; still the ratio can be increased by either increasing the level of regulatory capital or by decreasing the level of risk-weighted Assets.

The NIMs of ICICI have only increased as per the study concerned due to an increase in yield on average interest earning assets and a decrease of cost of funds. The decrease in NII may be due to higher slippages of advances to NPA and due to muted lending and efforts by the bank to conserve capital. But for other banks like HDFC, AXIS, FEDERAL and YES, the NIM has experienced a slight decrease, the reason being large demand for savings accounts as compared to the loans provided, hence the banks need to pay more interests than what is received leading to an increase in the amount of interest expended than interest earned. This factor needs to be taken care of.

For Cost-Income ratio, the banks like ICICI, AXIS and YES have shown an increase in the ratio, indicating that it can hamper the profitability of the banks. This ratio needs to be decreased either by decreasing the operating expenses incurred by the banks or by implementing more efficient operations by adopting advanced technology solutions. Still FEDERAL and HDFC banks are in a better position as they maintained a lower CI ratio, indicating a better cost efficiency.

Coming to productivity ratios, Business per Employee of all the selected banks have increased over time, but profit per employee was not that much satisfactory for ICICI, AXIS and YES bank. Though the companies earned profit every year, but a decrease in the ratio reveals that the productivity was not up to a considerable good level at the end of 5-year period and there is a lack of efficiency in using their human resources. But HDFC and FEDERAL Banks have maintained a higher profit per employee indicating a wise investment in human capital. For improving profit per employee, the labour demand needs to be checked along with employee turnover as it varies from industry to industry.

Overall this study contains statements that relate to the operations and performance of the banks. Actual results may vary to some extent from those suggested by such statements due to certain risks associated with the expectations and future circumstances such as technological changes, the impact of changes in banking regulations and other regulatory changes in India and other jurisdictions, natural calamities, inflation, deflation, unanticipated turbulence in interest rates, foreign exchange rates, equity prices or other rates or prices, the performance of the financial markets in India and globally, among others.

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