

## Impact of Operational Efficiency in Selected Private Sector Banks in India

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### Abstract

The recent turn down in economic growth has offered important challenges to banks through increasing impairment of assets, pressure on volatility in non-interest profits. Hence, enhanced operational efficiency will aid banks in facing the challenges and enable banks to uphold their profitability and health. Therefore, the researcher attempted to assess the operational performance of 6 selected private sector banks for the period 2013-18. The researcher mainly chose operational efficiency as a parameter to assess its impact on the performance of the banks. The banks were found to be operationally effective when business and profit per branch and employee were tested.

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### Introduction

In India, banking companies are registered and function under the Banking Regulation Act, 1949. Along with this, the Reserve Bank of India (RBI) has the general responsibility of monitoring the entire banking system in India. All the banks are legally bound to follow the instructions and guidelines issued by the Act. Banks in India have implemented the monetary policy introduced by the RBI to control the inflation and deflation in the country. The RBI also implemented a policy for the developments and promotions of banking industry in the country. These policies have included denationalization and privatization of banks, interest rate deregulation, and development of a system of self-disciplined bank management.

It is important to evaluate the overall performance and monitor their financial position for depositors, owners, potential investors, managers and regulators. Number of criteria and model must be used to evaluate the performance of banks such as profitability, liquidity, assets quality, return on equity, debt stability, attribute towards risk and management strategies. The efficiency and performance of a bank is measure on the basis of assets management and equity investment returns by using the financial ratios.

The progress of banking industry reflects the progress of the economy. Checking the health, performance and efficiency of the banks must be evaluated periodically in order to sustain the economic development.

### Review of Literature

**Gilbert Sebe-Yeboah and Charles Mensah (2014)** conducted a research study to compare the financial performance of agricultural development banks in Ghana. The

PELARI (Profitability, Efficiency, Liquidity, Asset Quality, Risk Measures and Investor analyses) model was adopted in the study as it was in line with the CAMELS' rating. Risk in non-manufacturing companies was measured using Altman z-score. The study concluded stating that the liquidity of the bank declined substantially.

**Bhuvan J. Vyas and Vijay Pithadia (2012)** researched on the productivity in service sector: SBI & IDBI bank. The productivity indicators chosen for the study were Expenditure per Employee and Income per Employee. The study period was 2006-2007 to 2010-2011 which employed F-test and Ratio analysis to measure the productivity of the banks. From the analysis, it was a significant difference between SBI and IDBI for Income and expenditure per employee was stated.

**Sakshi Jhumb and Bibhu Prasad (2012)** conducted a study on efficiency and profitability of Indian banks. This paper chose important parameters of productivity and profitability for evaluation of OBC bank and HDFC bank i.e. Investment-Deposit Ratio, Credit Deposit Ratio, Return on Assets, Ratio of Net Interest Margin to total assets, Cost of deposits, Burden to Assets Ratio, Return on Advances, Cost of Funds, Business per Employees, Ratio of Net Advances and Net NPA. Spearman's Rank Correlation Test and Ratio analysis were used for the assessment of performance and it was accomplished that there was a correlation for seven out of ten parameters and three parameters like Business per Employees, Return on Assets and Ratio of Net Interest Margin did not show any positive results.

**Gopal, M. and Dev, S. (2006)** studied the profitability and productivity of selected public and private sector banks in India. The after effects of globalization and liberalization of Indian banks during the period 1996-97 to 2003-04 was studied where the Interest spread was mainly found to impact profitability. A significant positive relation between productivity and profitability in the study showed that the banks were effectively utilizing their resources.

**Sanyal and Shankar (2008)** tried to analyze the differences in productivity across bank types since the 1991 reforms. They also examined the impact of competition and ownership on bank productivity considering structure and size of the bank. They found that Indian Private Banks dominate the Public and Foreign Banks, both in terms of productivity levels and productivity growth, and competition impacted the banks differently for different ownership category of banks. The study stated that the period after 1998 increased productivity in the Indian Private Banks, Public and Foreign Banks.

### **Objectives**

1. To determine the parameters measuring operational efficiency in private sector banks in India.
2. To determine the impact of operational efficiency in selected private sector banks in India.

### **Hypothesis:**

H<sub>1</sub>: There is a significant difference in operational efficiency of different private sector banks in India in Business per branch

H<sub>2</sub>: There is a significant difference in operational efficiency of different private sector banks in India in Profit per branch

H<sub>3</sub>: There is a significant difference in operational efficiency of different private sector banks in India in Business per Employee Ratio

H<sub>4</sub>: There is a significant difference in operational efficiency of different private sector banks in India in Profit per Employee Ratio

### Operational Efficiency

Operational efficiency can be defined as the ratio between an output gained from the business and an input to run a business operation. When improving operational efficiency, the output to input ratio improves. Efficiency represents the performance of all factors of production. In case of banks, while productivity measures the performance of their staff, efficiency represents the combined performance of staff, capital and management. However, there are strong inter-linkages between the performances of the three factors of production: high productivity of staff will result in efficient utilization of capital, while an efficient management function would result in superior performance by labor and capital. The parameters that measure operational efficiency in this study are Business per Branch, Business per Employee, Profit per Branch and Profit per Employee. Hence, when all key inputs are optimally deployed, the outcome will be an 'efficient' bank.

### Data Analysis and Interpretation

#### Business per Branch:

This ratio is taken into consideration for evaluation and comparison of the efficiency of a bank at its branch level.

**Business per Branch = Deposit + advance/No. of branches.**

The higher the ratio, the more is the business per branch and hence greater efficiency per branch.

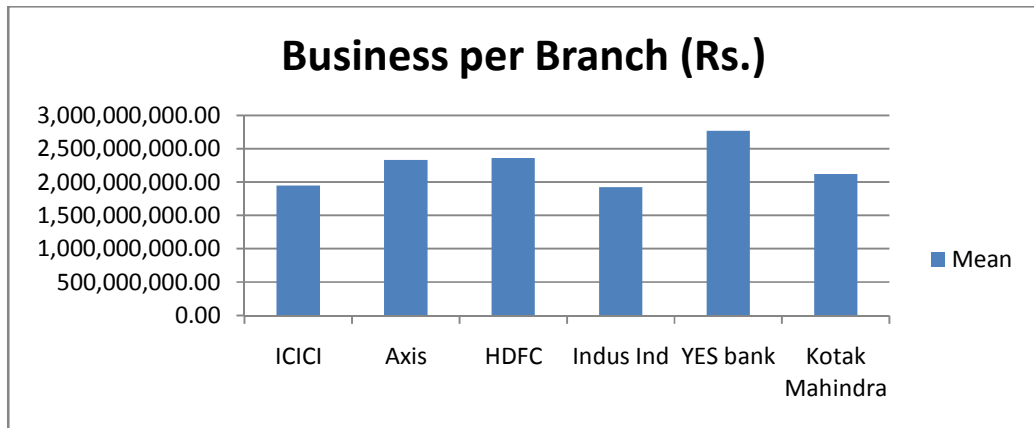
**Table 1.1(a): Analysis of Mean, Standard Deviation and Coefficient of Variance of Business per Branch (Rs.)**

Year	ICICI	Axis	HDFC	Indus Ind	YES bank	Kotak Mahindra
2013-2014	1,786,880,64 5.35	2,127,440,97 9.60	1,969,843,517. 19	1,920,334,239.2 0	2,318,303,16 9.64	1,852,891,9 32.23
2014-2015	1,849,592,10 5.93	2,331,112,26 9.60	2,033,609,052. 57	1,784,301,662.9 2	2,642,245,07 7.65	2,061,710,8 39.18
2015-2016	1,925,145,28 2.02	2,399,246,84 2.98	2,236,765,820. 58	1,814,196,880.0 0	2,441,040,23 3.72	1,930,294,9 55.74
2016-2017	1,967,569,37 9.38	2,383,317,60 6.84	2,541,267,992. 36	1,997,106,086.6 7	2,751,365,33 6.00	2,143,959,0 11.69
2017-	2,205,404,75	2,412,295,50	3,022,986,693.	2,118,520,227.8	3,675,200,09	2,610,671,4

2018	4.67	8.51	96	6	4.55	39.48
Mean	1,946,918,43 3.47	2,330,682,64 1.51	2,360,894,615. 33	1,926,891,819.3 3	2,765,630,78 2.31	2,119,905,6 35.66
SD	160312365.1	117727977.9	431956373.5	136680827.3	535771613.2	296675243. 8
CV	0.082341593	0.05051223	0.182963005	0.070933317	0.193724924	0.13994738 2

As per above Table 1.1(a), bank wise mean, standard deviation & coefficient of variation of Business per branch of selected banks were found. Business per branch was highest in YES & HDFC bank & Indus Ind bank had the lowest business per branch when compared to other banks. Standard deviation and coefficient of variation of business per branch of YES Bank was found to be the highest 535771613.2 and 0.193724924% respectively and Axis Bank had lowest standard deviation of 117727977.9 & low coefficient of variation was 0.05051223%. Hence, YES bank and HDFC bank having the highest business per branch were observed.

Graph 1.1: Business per Branch



**Hypothesis:**

H<sub>0</sub> There is no significance difference in operational efficiency of different private sector banks in India in Business per branch  $\mu_1 = \mu_2 = \mu_3 = \mu_4 = \mu_5 = \mu_6$

H<sub>1</sub>: There is significance difference in operational efficiency of different private sector banks in India in Business per branch  $\mu_1 \neq \mu_2 \neq \mu_3 \neq \mu_4 \neq \mu_5 \neq \mu_6$

**Table 1.1(b): ANOVA Test**

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	2.48731E+18	5	4.97463E+17	4.814969874	0.003446	2.620654
Within Groups	2.47958E+18	24	1.03316E+17			
Total	4.9669E+18	29				

Since the calculated value of F (4.814969874) was higher than the table value (2.620654) and also p value (0.003446) was lesser than the significant value p (0.05) as shown in table ANOVA, alternate hypothesis was accepted. It was therefore concluded that there was a significant difference in operational efficiency of different private sector banks of India (AXIS, ICICI, HDFC, YES Bank, Indus Ind Bank and Kotak Mahindra Bank) in Business per branch.

**Profit per Branch**

**Profit per Branch = Net Profit/ No. of Branches**

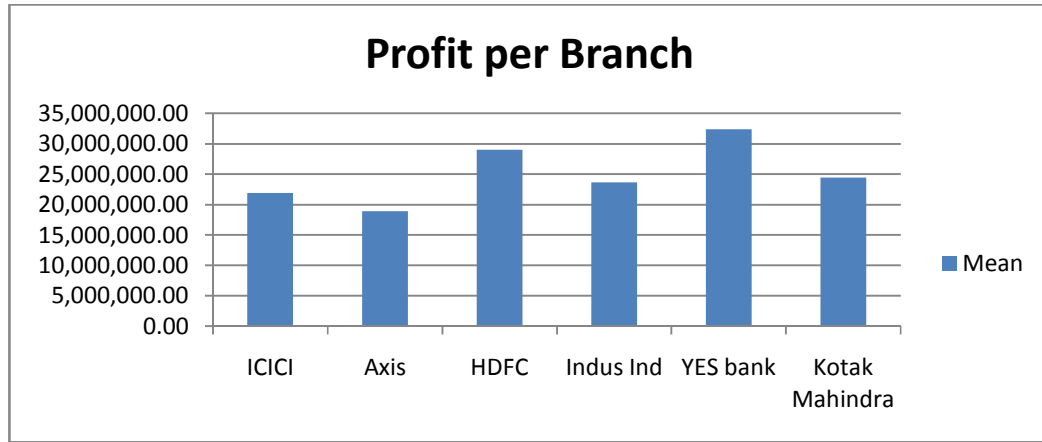
Better ratio is indicator of good health and efficiency.

**Table 1.2(a): Analysis of Mean, Standard Deviation and Coefficient of Variance of Profit per Branch**

Year	ICICI	Axis	HDFC	Indus Ind	YES bank	Kotak Mahindra
2013-2014	26,140,359.71	25,885,373.02	24,914,416.99	23,389,069.77	28,888,932.14	24,835,024.79
2014-2015	27,593,468.89	28,419,553.11	25,450,719.73	22,393,449.44	31,780,687.80	27,280,388.89
2015-2016	21,856,825.39	28,318,398.07	27,204,011.28	22,864,501.00	29,528,448.84	15,677,261.82
2016-2017	20,208,434.23	11,135,832.93	30,858,199.79	23,899,105.83	33,300,964.00	24,919,633.31
2017-2018	13,925,257.65	744,480.96	36,529,618.34	25,757,053.57	38,405,124.55	29,425,817.00
Mean	21,944,869.17	18,900,727.62	28,991,393.23	23,660,635.92	32,380,831.47	24,427,625.16
SD	5404765.18	12430091.6	4813071.859	1300497.541	3802248.381	5246357.966
CV	0.2462883	0.6576515	0.1660173	0.0549646	0.1174228	0.2147715

As per above Table 1.2(a), bank wise mean, standard deviation & coefficient of variation of Profit per branch of selected banks were found. Profit per branch was highest in YES & HDFC bank &, Axis bank had the lowest profit per branch when compared to other banks. Standard deviation of business per branch of Kotak Mahindra Bank was found to be the highest 5246357.966 and Axis bank had the highest coefficient of variation of 0.6576515% and Indus Ind Bank had lowest standard deviation of 1300497.541 & low coefficient of variation 0.0549646%. Hence, YES bank and HDFC bank having the highest business per branch were observed.

Graph 1.2 :Profit per Branch



**Hypothesis:**

H<sub>0</sub>: There is no significance difference operational efficiency of different private sector banks in India in Profit per branch  $\mu_1 = \mu_2 = \mu_3 = \mu_4 = \mu_5 = \mu_6$

H<sub>1</sub>: There is significance difference in operational efficiency of different private sector banks in India in Profit per branch  $\mu_1 \neq \mu_2 \neq \mu_3 \neq \mu_4 \neq \mu_5 \neq \mu_6$

**Table 1.2(b): ANOVA Test**

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	5.95244E+14	5	1.19049E+14	2.850818224	0.036975457	2.620654
Within Groups	1.00223E+15	24	4.17595E+13			
Total	1.59747E+15	29				

Since the calculated value of F (2.850818224) was higher than the table value (2.620654) and also p value (0.036975457) was lesser than the significant value p (0.05) as shown in table ANOVA, alternate hypothesis was accepted. It was therefore concluded that there was a significant difference in operational efficiency of different private sector banks of India (AXIS, ICICI, HDFC, YES Bank, Indus Ind Bank and Kotak Mahindra Bank) in Profit per branch.

**Business per Employee Ratio:**

The average business per employee could be an indicator of employee’s productivity. The input is no. of employees and output is the total business. Therefore, the ratio indicates input-output relationship.

**Business per Employee = Deposit + Advance/ No. of Employees.**

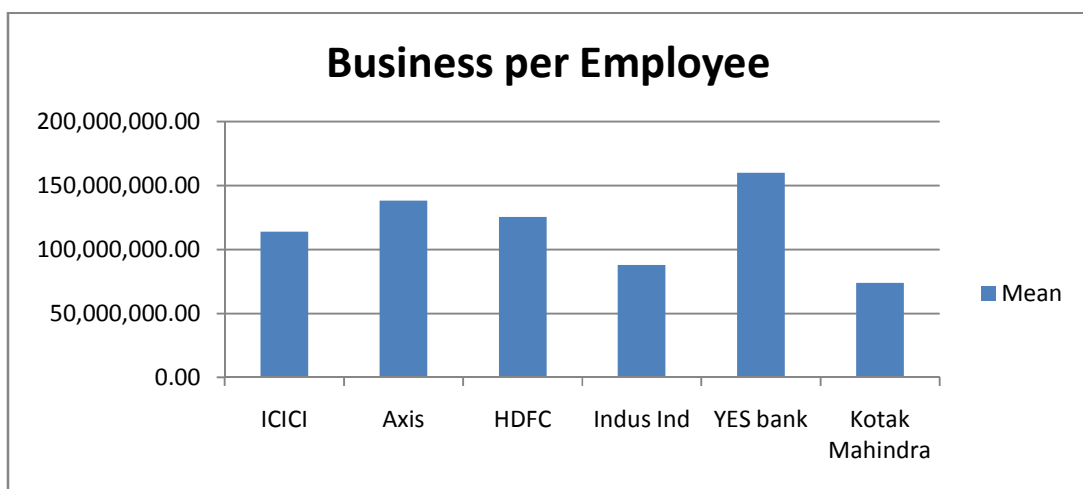
A higher ratio is indicator of greater efficiency of employees.

**Table 1.3(a): Analysis of Mean, Standard Deviation and Coefficient of Variance of Business per Employee Ratio**

Year	ICICI	Axis	HDFC	Indus Ind	YES bank	Kotak Mahindra
2013-2014	92,849,708.72	120,464,715.54	98,340,460.49	74,152,739.70	147,528,383.52	70,062,476.00
2014-2015	112,938,140.26	142,913,797.44	107,003,994.66	74,746,385.23	154,232,807.03	78,345,011.00
2015-2016	118,696,176.03	138,973,029.46	115,472,348.91	78,672,891.59	139,952,973.40	81,919,235.00
2016-2017	115,193,098.71	139,083,338.45	142,094,024.12	94,672,011.69	136,713,805.52	66,706,361.00
2017-2018	129,753,214.80	149,842,826.65	163,972,185.69	117,304,553.04	221,664,661.91	72,472,239.00
Mean	113,886,067.70	138,255,541.51	125,376,602.77	87,909,716.25	160,018,526.28	73,901,064.00
SD	13416769.31	10882072.99	27091009.4	18423026.94	35126416.96	6,176,159.58
CV	0.11781	0.07871	0.21608	0.20957	0.21951	0.0833

As per above Table 1.3(a), bank wise mean, standard deviation & coefficient of variation of business per employee ratio of selected banks were found. Business per employee ratio was found highest in YES & Axis bank &, Kotak Mahindra bank had the lowest business per employee ratio when compared to other banks. Standard deviation and coefficient of variation of business per employee ratio of YES Bank was found to be the highest 35126416.96 and 0.21951% respectively and Kotak Mahindra Bank had lowest standard deviation of 6176159.58 & low coefficient of variation of 0.07871% was found in Axis Bank. Hence, YES bank and Axis bank having the highest business per employee ratio were observed.

Graph 1.3: Business per Employee



**Hypothesis:**

H<sub>0</sub> There is no significance difference in operational efficiency of different private sector banks in India in Business per Employee Ratio  $\mu_1 = \mu_2 = \mu_3 = \mu_4 = \mu_5 = \mu_6$

H<sub>1</sub>: There is significance difference in operational efficiency of different private sector banks in India in Business per Employee Ratio  $\mu_1 \neq \mu_2 \neq \mu_3 \neq \mu_4 \neq \mu_5 \neq \mu_6$

**Table 1.3(b): ANOVA Test**

Source of Variation	SS	Df	MS	F	P-value	F crit
Between Groups	2.54242E+16	5	5.08485E+15	11.53998838	9.32071	2.620654
Within Groups	1.05751E+16	24	4.40628E+14			
Total	3.59993E+16	29				

Since the calculated value of F (11.53998838) was higher than the table value (2.620654) and also p value (9.32071) was greater than the significant value p (0.05) as shown in table ANOVA, alternate hypothesis was accepted. It was therefore concluded that there was a significant difference in operational efficiency of different private sector banks of India (AXIS, ICICI, HDFC, YES Bank, Indus Ind Bank and Kotak Mahindra Bank) in Business per employee ratio.

**Profit per Employee**

This is one of the indicators to measure the performance of the bank. It is not only a Profitability indicator but also indicates the efficiency.

**Profit per Employee= Net Profit/ No. of Employees.**

Higher this ratio, better the profit per employee, which means employees are utilizing higher efficiency in his/her workings in the firm/bank.

**Table 1.4(a): Analysis of Mean, Standard Deviation and Coefficient of Variance of Profit per Employee**

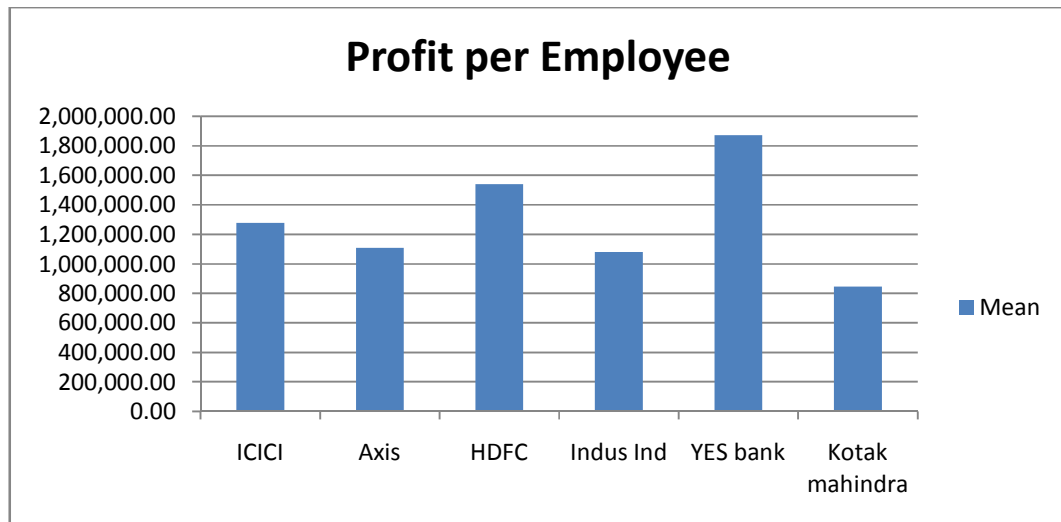
Year	ICICI	Axis	HDFC	Indus Ind	YES bank	Kotak Mahindra
2013-2014	1,358,302.69	1,465,739.42	1,243,801.97	903,157.15	1,838,386.59	939,074.38
2014-2015	1,684,887.74	1,742,321.17	1,339,160.38	938,086.55	1,855,098.43	1,036,654.78
2015-2016	1,347,597.82	1,640,303.74	1,404,398.73	991,522.16	1,692,964.40	665,322.83
2016-2017	1,183,120.75	649,854.14	1,725,424.39	1,132,927.51	1,654,706.29	775,340.41
2017-	819,281.33	46,244.39	1,981,431.60	1,426,193.44	2,316,352.51	816,860.68



2018						
Mean	1,278,638.07	1,108,892.57	1,538,843.41	1,078,377.36	1,871,501.64	846,650.62
SD	314751.039	733298.4951	306469.7798	213236.49	263691.931	144478.4467
CV	0.246161167	0.661289032	0.199155923	0.19773829	0.14089858	0.17064707

As per above Table 1.4(a), bank wise mean, standard deviation & coefficient of variation of profit per employee of selected banks were found. Profit per employee was found highest in YES & HDFC bank &, Kotak Mahindra bank had the lowest profit per employee when compared to other banks. Standard deviation and coefficient of variation of profit per employee of Axis Bank was found to be the highest 733298.4951 and 0.661289032% respectively and Kotak Mahindra Bank had lowest standard deviation and coefficient of variation of 144478.4467 & 0.17064707% respectively. Hence, YES bank and HDFC bank having the highest profit per employee were observed.

Graph 1.4: Profit per Employee



**Hypothesis:**

H<sub>0</sub> There is no significance difference in operational efficiency of different private sector banks in India in Profit per Employee Ratio  $\mu_1 = \mu_2 = \mu_3 = \mu_4 = \mu_5 = \mu_6$

H<sub>1</sub>: There is significance difference in operational efficiency of different private sector banks in India in Profit per Employee Ratio  $\mu_1 \neq \mu_2 \neq \mu_3 \neq \mu_4 \neq \mu_5 \neq \mu_6$

**Table 1.4(b): ANOVA Test**

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	3.37145E+12	5	6.7429E+11	4.668544941	0.004061259	2.620654
Within Groups	3.46638E+12	24	1.44433E+11			
Total	6.83784E+12	29				

Since the calculated value of F (4.668544941) was higher than the table value (2.620654) and also p value (0.004061259) was lesser than the significant value p (0.05) as shown in table ANOVA, alternate hypothesis was accepted. It was therefore concluded that there was a significant difference in operational efficiency of different private sector banks of India (AXIS, ICICI, HDFC, YES Bank, Indus Ind Bank and Kotak Mahindra Bank) in Profit per employee ratio.

### **Conclusion**

As banks form the core of the country's financial system, the health and profitability of banks help in ensuring stability and resilience of the entire financial system. The financial system facing a crisis has always been aided with enhanced efficiency and productivity. Hence, this research attempted to study the operational efficiency through efficiency parameters business per branch and employee and profit per branch and employee. The study period chosen was 2013 to 2018 which analysis of the business and profits per branch and employee along with one way ANOVA to assess the impact of operational efficiency in selected private sector banks. When these parameters for AXIS, ICICI, HDFC, YES Bank, Indus Ind Bank and Kotak Mahindra Bank were analyzed for the said 5 years, it was found that the business and profits per branch and employee were found to positively impact the operational efficiency of the said banks. Hence, it is guides the stakeholders, policy makers and economy watchers to assess the banks' financial and operational health and performance.

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