OPERATIONAL EFFICIENCY AND SERVICE QUALITY OF COMMERCIAL BANKS IN INDIA

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Introduction

Financial Sector reforms initiated in the country as a part of the economic reforms since the year 1991 has brought about revolution in the structure of banking environment. *Liberalization, globalization and privatization of Indian economy has brought paradigm shift in the banking industry. These reforms have bought ample opportunities of growth as well as fiery competition from almost every corner of the world.* Customer delight is the need of the hour. The banks now compete with one another to offer value-added services to customers to expand their customer bases. Any lack in the services or in the quality may cause dissatisfaction among them and may lead to switch over to the competitors thereby causing unpleasant condition to the organization.

Statement of the Problem

Measurement of profitability, productivity and service quality of Indian commercial banks need frequent analytical studies with a view to reviewing their success over a period. The studies so far available in the field of profitability and productivity of commercial banks are only piecemeal efforts covering some specific banks and region. Comprehensive studies establishing the relationship between operational efficiency and service quality compared with public and private sector banks are few and far between. Initiation of a new study on operation efficiency and the perception of customers regarding the services provided by the commercial banks will naturally throw up additional information which will be useful to the bankers and policy makers in meeting the challenges ahead. The present study is undertaken with this end in view.

Scope of the Study

The present study is an attempt to evaluate the operational efficiency and service quality of Indian commercial banking industry. The study will cover operational efficiency and service quality of State Bank Group (SBG), Nationalised Banks (NBs), Old Private Sector Banks (OPSBs) and New Private Sector Banks (NPSBs). Service quality is measured on the basis of five dimensions of the tool SERVPERF developed by J.J.Cronin and S.A.Taylor.

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Objectives of the Study

The study was conducted with the following specific objectives:

1. To review the developments of Indian commercial banks in the post-reforms period.
2. To assess the profitability of Indian commercial banks in the post-reforms period.
3. To assess the productivity and operational efficiency of Indian commercial banks in the post-reforms period.
4. To study the perceptions of customers regarding the service quality of their bankers.
5. To make suitable suggestions on the basis of the findings of the study.

Hypotheses of the Study

Based on the literature review following hypotheses were formulated:

1. There is significant difference in the growth rate of operating profit ratio of different commercial bank groups.
2. There is significant difference in the growth rate of net profit ratio of different commercial bank groups.
3. There is significant difference in the growth rate of branch productivity of different commercial bank groups.
4. There is significant difference in the growth rate of employee productivity of different commercial bank groups.
5. There is significant difference in the growth rate of bank productivity of different commercial banks.
6. There is significant difference in service quality of different commercial bank groups.

Research Methodology

The study is designed as an empirical one based on survey method. Data have been collected from both secondary and primary sources.

Secondary Data

Profitability, productivity and examining operational efficiency of commercial banks are studied by using ratio analysis and trend using regression analysis. Secondary data necessary for measuring profitability and productivity of sample bank groups were collected from:

Report on Trend and Progress of Banking in India, RBI, Mumbai, Statistical Tables Relating to Banks RBI, Mumbai, Indian Banks Association (IBA) –Bulletins, Annual Issues and Monthly Issues, Various other publication of Reserve Bank of India, Government of India, books and journals, websites of RBI and various banks, Economic Times, Business Line etc. were also used for collecting secondary data.

Primary Data

The study is designed as an empirical one based on survey method. Primary data were collected from sample respondents through personal interview with the help of an interview schedule specifically designed for the purpose. A direct one to one discussion with the managers and officers of selected bank branches has been a highlight in the collection of data.

Sample Design

For the purpose of measuring the service quality of commercial banks at the micro-level, a multi- stage random sampling technique was designed to draw a sample of customers of the bank. In the first stage city centers were selected, in the second, third and the fourth stage commercial banks, bank branches and customers were selected respectively.

The banks which have more than 100 bank branches in the State of Kerala have only been selected for the study. To collect the primary data, in all, four banks were selected - one bank from each group by using lottery method viz. one bank from State Bank Group, one from Nationalized Banks, one from Old Private Sector Banks and the other one from New Private Sector Banks. The banks selected in all the three cities were the same. The selected banks were as follows.

- State Bank of India representing State Bank Group
- Canara Bank representing Nationalized Banks
- Federal Bank Ltd. representing Old Private Sector Banks and
- HDFC Bank Ltd. representing New Private Sector Banks.

Sample Size

For measuring service quality, SERVPERF developed by Cronin and Taylor was used to study the perceptions of customers about their banker. Sample size consists of 600 respondents.

Statistical Tools Used

The various mathematical and Statistical techniques used in the study were average, standard deviation, coefficient of variation, annual average growth rate (AAGR), exponential growth rate, trend using regression analysis, mean percentage score, correlation coefficient matrix, one way ANOVA and Post hoc tests. Simultaneous Equation Modeling (SEM) was performed to test the fit between the research model and the obtained data using AMOS. All the statistical tests were conducted at 5 per cent and 1 per cent level of significance with the help of appropriate test statistic. All these statistical measures and tests were conducted using SPSS, Microsoft Excel and AMOS.

Review of Literature

More than seventy five past studies relating to profitability, productivity, operational efficiency and service quality of Indian commercial banks were collected and reviewed by the researcher.

Major Findings of the Study

Profitability of Indian Commercial Banks:

Profitability of banks is analysed by using the two important techniques vis-à-vis

- **Ratio Analysis and**
- **Trend Using Regression Analysis**

For measuring the profitability of Indian commercial banks, three sets of ratios have been used in the study. They are: Spread Ratios, (b) Burden Ratios and (c) Profitability Ratios

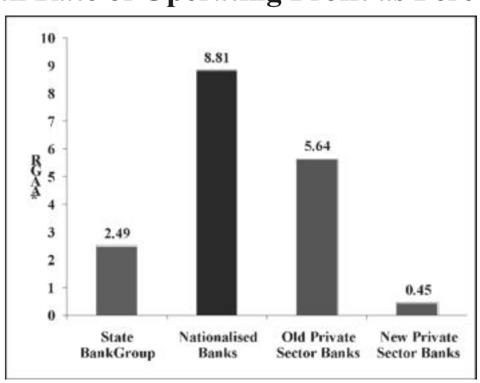
Operating Profit as Percentage of Total Assets

An important criterion to evaluate the overall efficiency of bank groups is profitability. One of the main analytical tools to determine the bank efficiency is the ratio of operating profit as percentage of total assets. It shows the efficiency with which a bank deploys its total resources to optimise its profit and thus serves an index to the degree of asset utilisation and managerial effectiveness. Operating profit is the difference between spread and burden. It measures the ability of the management to keep revenue growth ahead of rising costs.

Figure 1.1 shows the pictorial presentation of the Annual Average Growth Rate of operating profit as percentage to total assets of various bank groups.

Figure 1

Annual Average Growth Rate of Operating Profit as Percentage of Total Assets



The study reveals that the Annual Average Growth Rate in operating profit as percentage of total assets of Nationalised Banks is worked at 8.81 per cent which is the highest among the sample bank groups followed by Old Private Sector Banks at 5.64 per cent, State Bank Group at 2.49 per cent and New Private Sector Banks at 0.45 per cent. But as far as within variation of this ratio is concerned, Nationalised Banks has shown more unstable growth also.

The one way ANOVA test conducted reveals that variation in the growth rate of operating profit as percentage of total assets of different bank group is not much significant as the calculated value is more than 0.05. **Hence the hypothesis that "there is significant difference in the growth rate of operating profit ratio of different commercial bank groups" is rejected.**

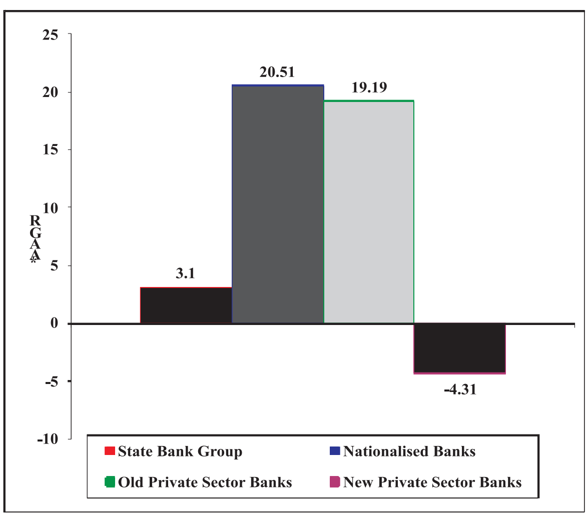
<u>Net Profit as Percentage of Total Assets</u>

Net Profit is the chief barometer of the efficiency of a commercial bank. The excess of revenue over the expenditure forms the net profit. One of the main analytical tools to determine the bank profitability is the ratio of net profit as percentage of total assets. This ratio is also known as Return on Assets (ROA).

Figure 1.2 shows the bar diagram of Annual Average Growth Rate of net profit as percentage of total assets.

Figure 2

Annual Average Growth rate in Net Profit as Percentage of Total Assets



The Annual Average Growth Rate of Net Profit as Percentage of Total Assets of Nationalised Banks is worked at 20.51 per cent which is the highest among the sample bank groups followed by Old Private Sector Banks at 19.19 per cent and State Bank Group at 3.10 per cent. But as far as within variation of this ratio is concerned, Nationalised Banks has shown more unstable growth. The New Private Sector Banks however, showed a negative growth rate of 4.31 per cent.

The one way ANOVA test conducted reveals that variation in the ratio of net profit as percentage of total assets of different bank groups is not much significant as the calculated value is more than 0.05. **Hence the hypothesis that "there is significant difference in the growth rate of net profit ratio of different commercial bank groups" is rejected.**

Comparison of Annual Average Growth Rate of Spread, Burden, Profitability and Net Profit Ratios of Bank Groups

The comparison of annual average growth rate of spread, burden, profitability and net profit ratios of sample bank groups under study is shown in the following table 1.1. From the Table 1.1 it is clear that the Nationalized Banks showed highest profitability ratio of 8.81 per cent and net profit ratio of 20.51 per cent among the sample bank groups under study. Nationalized Banks also marked a negative annual average growth rate in burden ratio. Thus Nationalized Banks ranked first in profitability and net profit ratio which are the main indicators of profitability among all the sample bank groups under study.

Table 1

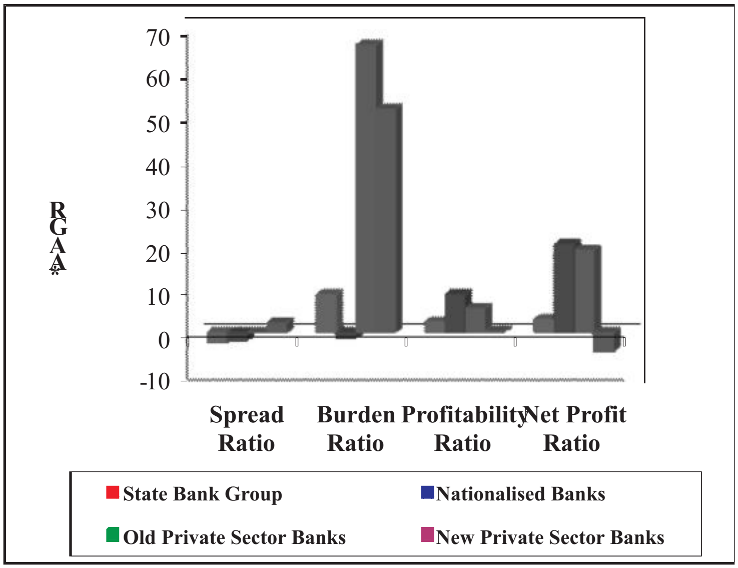
Comparison in AAGR* of Spread, Burden, Profitability and Net Profit Ratios of Bank Groups

Bank Group	Spread Ratio	Burden Ratio	Profitability Ratio	Net Profit Ratio
State Bank Group	-2.34	8.76	2.49	3.10
Nationalized Banks	-2.04	-1.35	8.81	20.51
Old Private Sector Banks	0.01	66.69	5.64	19.19
New Private Sector Banks	2.31	51.78	0.45	-4.31

*AAGR – Annual Average Growth Rate

In case of spread ratio which is an important indicator of profitability, New Private Sector Banks showed highest annual average growth rate of 2.31 per cent followed by old private sector banks at 0.01 per cent. But New Private Sector Banks and Old Private Sector Banks showed highest burden ratio which adversely affects the profitability of these banks. State Bank Group and Nationalized Banks showed a negative annual average growth rate in spread ratio. Figure wise presentation (Figure 1.3) of comparison of annual average growth rate of spread, burden, profitability and net profit ratio is given in the following multiple bar diagram

Figure 3
Comparison in AAGR* of Spread, Burden, Profitability and Net Profit Ratios of Bank Groups



Trend using Regression Analysis

The second section of the research work encompasses trend analysis. Trend analysis is basically an indicator of the quantitative changes in banking operations. It shows the level of growth that banks have achieved over the years on each component of financial statements and also shows the direction of operation over a period of time. Besides, it highlights the trend pattern which helps in knowing the historical development as well as the level of efficiency in banking operation over a time frame. Using the trend eliminated values of growth rates from 1999 to 2011; the trend for the next ten years is predicted and pictorially presented for the sample bank groups under study. In this study the variables selected for analysing the profitability of sample bank groups are the following:-

1. Operating Profit as Percentage of Total Assets (Profitability Ratio)
2. Net Profit as Percentage of Total Assets (Net Profit Ratio)

1. Profitability Ratio

Table 1.2 shows trend eliminated values of growth rates of profitability ratio for the period 1999-2011 and predicted values for the period 2013-2021 of the sample bank groups selected.

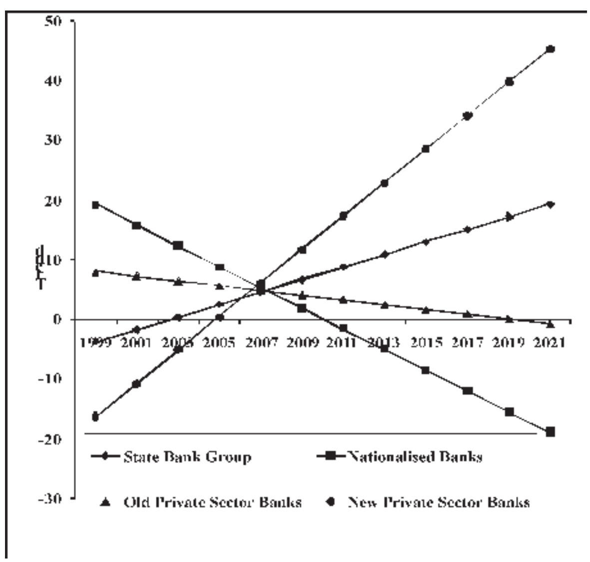
Table 2

Trend Eliminated Values of Growth Rate of Profitability Ratio

Year	State Bank Group	Nationalized Banks	Old Private Sector Banks	New Private Sector Banks
1999	-3.80	19.20	8.02	-16.38
2001	-1.70	15.74	7.22	-10.77
2003	0.39	12.28	6.43	-5.16
2005	2.49	8.81	5.64	0.45
2007	4.58	5.35	4.85	6.06
2009	6.67	1.89	4.05	11.67
2011	8.77	-1.58	3.26	17.28
2013	10.86	-5.04	2.47	22.89
2015	12.96	-8.51	1.68	28.50
2017	15.05	-11.97	0.88	34.11
2019	17.14	-15.43	0.09	39.72
2021	19.24	-18.90	-0.70	45.33

Figure 4

Trend in Profitability Ratio for the period 1999-2021



The figure shows that New Private Sector Banks and State Bank Group showed an increasing trend than other sample bank groups under study. New Private Sector Banks superseded the State Bank Group after the year 2007 and showed much steeper increasing trend in the growth rate of profitability ratio. Nationalized Banks and Old Private Sector Banks showed a declining trend in this ratio in which Nationalized Banks showed a faster decline as compared to Old Private Sector Banks after the year 2007. Trend in growth rate of profitability ratio of the four sample bank groups under study are presented in Figure 1.4 using trend eliminated values.

Net Profit Ratio

Table 1.3 shows trend eliminated values of growth rates of net profit ratio for the period 1999-2011 and predicted values for the period 2013-2021 of the sample bank groups selected.

It is clear from the Figure that Old Private Sector Banks and New Private Sector Banks show an increasing trend in the net profit ratio. State Bank Group shows slight increasing trend over a period of years. Nationalised Banks showed much steeper decreasing trend in the net profit ratio.

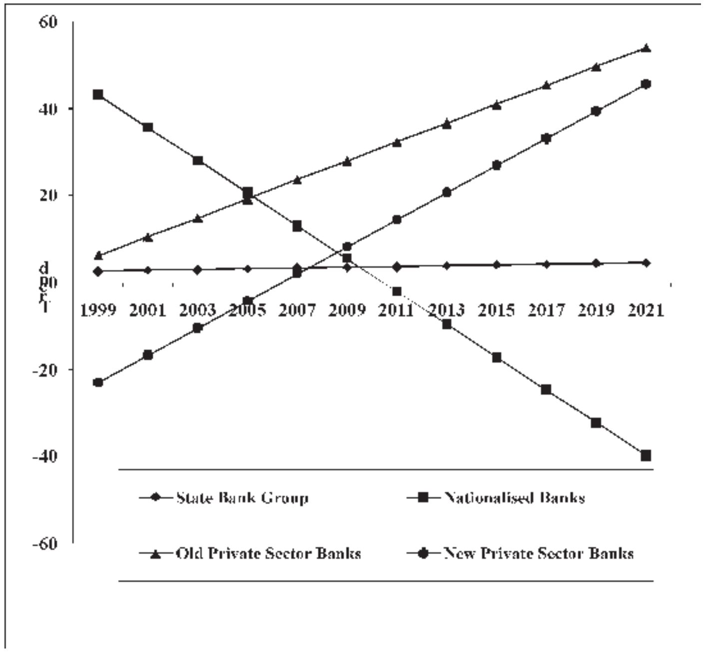
Table 3

Trend Eliminated Values of Growth Rate of Net Profit Ratio

Year	State Bank Group	Nationalised Banks	Old Private Sector Banks	New Private Sector Banks
1999	2.57	43.15	6.12	-23.04
2001	2.75	35.60	10.48	-16.79
2003	2.92	28.06	14.83	-10.55
2005	3.10	20.51	19.19	-4.30
2007	3.27	12.97	23.55	1.94
2009	3.45	5.42	27.91	8.19
2011	3.62	-2.13	32.26	14.43
2013	3.80	-9.67	36.62	20.68
2015	3.98	-17.22	40.98	26.92
2017	4.15	-24.76	45.33	33.17
2019	4.33	-32.31	49.69	39.41
2021	4.50	-39.85	54.05	45.66

Source: Trend eliminated values 1999-2011. Predicted Values of 2013-2021 using Excel

Figure 5
Trend in Net Profit Ratio for the Period 1999-2021



Productivity of Indian Commercial Banks

The overall productivity of the four sample bank groups is analyzed by dividing into three parts as 'Branch Productivity, 'Employee Productivity' and Bank Productivity. For measuring the productivity of Indian commercial banks, following ratios have been used in the study.

1. Business per Branch
2. Business per Employee and
3. Business per Bank

Business per Branch

Annual average growth rate in business per branch is highest in Nationalised Banks followed by State Bank Group and Old Private sector Banks and New Private Sector Banks. But as far as within variation is concerned Nationalised Banks has more unstable growth. The one way ANOVA test of growth rates conducted revealed that the calculated value is more than 0.05 which indicated that the variation is not significant. **So the null hypothesis "there is significant difference in the branch productivity of different commercial bank groups" is rejected.**

Business per Employee:

Annual average growth rate of business per employee is highest in Nationalised Banks followed by State Bank Group, Old Private and New Private Sector Banks. But Nationalised Banks marked highest coefficient of variation of 91.63 per cent which indicates an unstable growth. The one way ANOVA test conducted revealed that the variation is significant. **So the null hypothesis "there is significant difference in the employee productivity of different commercial bank groups" is accepted.** In order to identify which among the bank groups shows significant difference in this ratio, a Post Hoc Test is conducted. From which it is found that New Private Sector Banks have significant difference in growth rates with all other sample bank groups under study. That means Nationalised Banks have significant difference with New Private Sector Banks and have no significant difference with State Bank Group and Old Private Sector Banks.

Business per Bank

Annual Average Growth Rate of business per bank in New Private Sector Banks marked highest followed by State Bank Group, Old Private Sector Banks and Nationalised Banks. The one way ANOVA test conducted reveals that variation in the growth rates of business per bank is significant and hence **the null hypothesis "there is significant difference in the growth rate of bank productivity of different commercial bank groups" is accepted**. From the Post Hoc Test, it is found that New Private Sector Banks have significant difference in growth rates with all other sample bank groups under study.

Branch Productivity

Trend in growth rates of branch productivity showed an increasing trend in Nationalised Banks. It clearly disclosed a declining trend in State Bank Group, Old Private Sector Banks and New Private Sector Banks. New Private Sector Banks showed much steeper decreasing trend in the growth rate of branch productivity. State Bank Group showed a decline as compared to Old Private Sector Banks.

Employee Productivity

Trend Analysis in the growth rates of employee productivity showed a decreasing trend in State Bank Group and Old Private Sector Banks. Nationalised Banks showed much steeper increasing trend in the employee productivity whereas New Private Sector Banks showed a slight increase in the trend of employee productivity.

Bank Productivity

Trend Analysis in the growth rate of bank productivity showed that State Bank Group, Nationalised Banks and Old Private Sector Banks showed an increasing trend in which Nationalised Banks superseded the other banks after the year 2011. New Private Sector Banks showed much steeper declining trend in the bank productivity.

Comparison of Annual Average Growth Rate of Branch, Employee and Bank Productivity of Bank Groups

The comparison of annual average growth rate of branch productivity, employee productivity and bank productivity of sample groups under study is shown in the following Table 1.4

Table 4
Comparison in AAGR* of Branch, Employee and Bank Productivity of Bank Groups

Variables	State Bank Group	Nationalised Banks	Old Private Sector Banks	New Private Sector Banks
Business per Branch	34.72	37.73	31.57	28.21
Business per Employee	42.93	48.48	34.76	2.96
Business per Bank	47.17	43.90	45.43	93.03

*AAGR – Annual Average Growth Rate

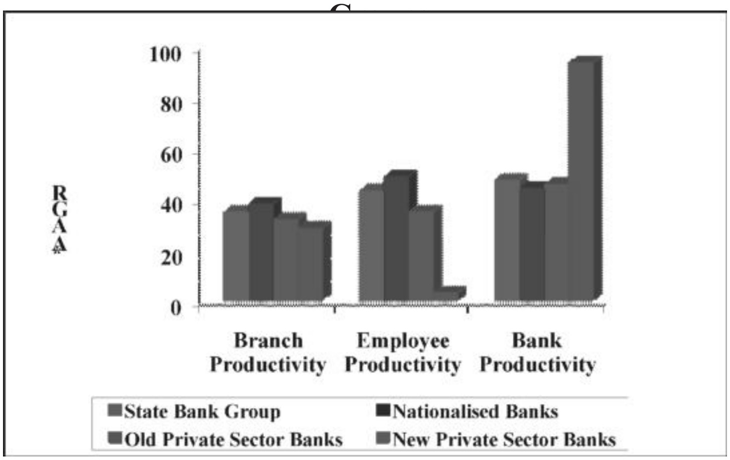
From the table it is clear that the annual average growth rate of business per branch and business per employee is highest for Nationalised Banks. State Bank Group ranked second in business per branch and business per employee. It is also clear that New Private Sector Banks marked the least in business per branch and business per employee. But in business per bank, New Private Sector Banks showed highest annual average growth rate when compared to other bank groups under study. Thus the productivity analysis on the basis of annual average growth rate disclosed that Nationalised banks are highly productive in branch wise and employee wise. In case of bank productivity New Private

Sector Banks are highly productive and Nationalised Banks are less productive.

The comparison of annual average growth rate of branch productivity, employee productivity and bank productivity of sample groups under study can also be shown in the following multiple bar diagram (Figure 1.6)

Figure 6

Comparison of AAGR* of Branch, Employee and Bank Productivity of Bank



Perception of Customers on Service Quality

For measuring service quality, SERVPERF developed by Cronin and Taylor (1992) was used to study the perceptions of customers about their banker. SERVPERF directly measures the customers' perceptions of service performance and assumes that respondents automatically compare their perceptions of the service quality levels with their expectations of those services. **The service quality is assessed based five dimensions namely, Tangibility, Reliability, Responsiveness, Assurance and Empathy**.

- **Tangibility:** The mean percentage score of tangibility is more for Canara Bank followed by State Bank of India, HDFC Bank Ltd. and Federal Bank Ltd. **Statistical test clearly states that there is significant difference in the tangibility of Indian commercial banks.** Post hoc test reveals that in case of tangibility Federal Bank Ltd. has significant difference with Canara Bank. All other combinations have no significant difference.

- **Reliability:** The mean percentage score of reliability is more for Canara Bank followed by State Bank of India, HDFC Bank Ltd. and Federal Bank Ltd. Thus Nationalised Banks scored highest and Old Private Sector Banks scored the least in reliability. **Statistical test clearly states that there is significant difference in the**

reliability of Indian commercial banks. Post hoc test reveals that in case of reliability Federal Bank Ltd. has significant difference with State Bank of India and Canara Bank. All other combinations have no significant difference.

- **Responsiveness:** The mean percentage score of responsiveness is more for Federal Bank Ltd. followed by HDFC Bank Ltd., State Bank of India and Canara Bank. Thus Old Private Sector Banks scored the highest and Nationalised Banks scored least in responsiveness. **Statistical clearly states that there is significant difference in the responsiveness of Indian commercial banks.** Post hoc test reveals that in case of responsiveness Federal Bank Ltd. has significant difference with all other sample banks under study.
- **Assurance:** The mean percentage score of assurance is more for Federal Bank Ltd. followed by HDFC Bank Ltd., State Bank of India and Canara Bank. Thus Old Private Sector Banks scored the highest and Nationalised Banks scored least in assurance. **Statistical test clearly states that there is significant difference in the assurance of Indian commercial banks.** Post hoc test reveals that in case of assurance Federal Bank Ltd. has significant difference with State Bank of India and Canara Bank. Also Canara Bank has significant difference with Federal Bank Ltd. and HDFC Bank Ltd.
- **Empathy:** The mean percentage score of empathy is more for Federal Bank Ltd. followed by State Bank of India, HDFC Bank Ltd. and Canara Bank. Thus Old Private Sector Banks scored the highest and Nationalised Banks scored least in empathy. **Statistical test clearly states that there is no significant difference in the empathy of Indian commercial banks.**

Service Quality of Commercial Banking Industry and Different Bank Groups

Service quality on the basis of mean percentage score for the banking industry is given in Table 1.5. The mean percentage score of the service quality shows that the satisfaction level of the customers are only moderate as far as the service quality of the banking industry is concerned. The mean percentage score of the service quality is 58.52 per cent which shows that the satisfaction level of the customers are only moderate as far as the service quality of the banking industry is concerned. It is clear that the mean percentage score of service quality for the Federal bank Ltd. is 59.44 per cent which is the highest. For State bank of India the mean percentage score is 58.90 per cent, for and for HDFC Bank Ltd. is 58.21 per cent and for the Canara Bank is 57.54 per cent. From this it seems the Federal bank Ltd. has the highest service quality and the Canara Bank has the least. That means Old Private Sector Banks has better service quality in Indian commercial banks.

Table 5
Satisfaction about the Service Quality of the Banking Industry

	Mean	Standard Deviation	Maximum	Mean Percentage Score (%)	Coefficient of Variation	Z	P value
Service Quality	64.37	6.01	110	58.52	9.34	-6.637	<0.001

Source: Primary data calculated using SPSS 20

A comparative view about the service quality on the basis of mean percentage score for the selected banks is given in Table 1.6

Table 6
Bank Wise Service Quality

Bank	Mean	Mean Percentage Score (%)	Standard Deviation
State Bank of India	64.79	58.90	5.17
Canara Bank	63.29	57.54	4.75
Federal Bank Ltd.	65.38	59.44	6.29
HDFC Bank Ltd.	64.03	58.21	7.34
Total	**64.37**	**58.52**	**6.01**

Source: Table 1.5

Table 7
ANOVA (Service Quality)

		Sum of Squares	df	Mean Square	F	Sig.
Service Quality	Between Groups	370.618	3	123.539	3.461	.016
	Within Groups	21273.50	596	35.694		
	Total	21644.118	599			

Source: Calculated using SPSS 20

To find out which among the banks have significant difference in service quality, post hoc test is conducted and depicted in Table 1.8.

When service quality of the selected banks is concerned, Federal Bank Ltd. has the highest score followed by State Bank of India, HDFC Bank Ltd. and Canara Bank. Thus the study reveals that Old Private Sector Banks has better service quality in Indian commercial banks. **Statistical test conducted reveals that there is significant**

difference in the service quality of commercial banks. Post hoc test also reveals that Old Private Sector Banks have significant difference only with Nationalised Banks. All other combinations have no significant difference.

It is clear from the table 1.8 that Federal Bank Ltd. and Canara Bank have significant difference and other combination banks have no significant difference in the service quality. That means only the Old Private Sector Banks have significant difference with Nationalised Banks in service quality.

Table 8

Post Hoc Test (Service Quality)

Dependent Variable	(I) Bank	(J) Bank	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
SERVICE QUALITY	State Bank of India (SBI)	CB	1.493	0.690	0.134	-0.284	3.271
		FB	-0.593	0.690	0.825	-2.371	1.184
		HB	0.76	0.690	0.689	-1.017	2.537
	Canara Bank (CB)	SBI	-1.493	0.690	0.134	-3.271	0.284
		FB	-2.087*	0.690	0.014	-3.864	-0.309
		HB	-0.733	0.690	0.712	-2.511	1.044
	Federal Bank Ltd. (FB)	SBI	0.593	0.690	0.825	-1.184	2.371
		CB	2.087*	0.690	0.014	0.309	3.864
		HB	1.353	0.690	0.204	-0.424	3.131
	HDFC Bank Ltd. (HB)	SBI	-0.76	0.690	0.689	-2.537	1.017
		CB	0.733	0.690	0.712	-1.044	2.511
		FB	-1.353	0.690	0.204	-3.131	0.424

*The mean difference is significant at the 0.05 level.

To verify the difference in service quality observed holds in the population or not one way ANOVA is conducted and the result is exhibited in Table 1.7. As the calculated value is less than 0.05, there is significant difference in service quality. **So the null hypothesis "There is significant difference in service quality of commercial bank groups" is accepted.**

Conclusion

The operational efficiency based on profitability and productivity, the study concluded that there is no significant difference in the growth rate of all indicators of profitability ratios and productivity ratios taken for the study. Customers are satisfied with tangibility and reliability of the Indian commercial banks but are mostly dissatisfied with responsiveness, assurance and empathy. Old Private Sector Banks ranked first in providing quality service to their customers. As far as service quality of the Indian banking industry is concerned, the satisfaction level of customers is only moderate. Indian commercial banking industry need to improve the operational efficiency and the quality of services provided.

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