

A Comparative Study on Performance Measurement of HDFC Bank and SBI using Balanced Scorecard

Dr. Ashok Kumar Gupta,

Associate Professor (ABST), Govt.
Commerce College, Kota (Raj.)

Dr. Meenu Maheshwari,

Assistant Professor, Deptt. of Commerce
and Management, University of
Kota, (Raj.)

Mrs. Sudarshana Sharma

Research Scholar, Govt. Commerce
College, Kota (Raj.)

Abstract

To achieve strategic objectives and a sustainable competitive advantage, banks require to evaluate their performance on a continuous basis and improve it on all the financial and non-financial aspects. This study has been carried out to evaluate and compare the performance of HDFC bank and State bank of India using the Balanced Scorecard which administers the performance on four basic perspectives named Financial: Customer: Internal Business Process: Learning & Growth and Innovation and with an additional perspective Social and Environment. The results do not show any significant difference in the performance of HDFC bank on financial perspective, customer perspective and Social & Environment Perspective and do not show any difference in the performance of SBI on all perspectives except financial perspective when intra company comparison was drawn for the study period. The overall performance score of HDFC bank was higher than SBI in the last four years of the study. Both banks were graded very good in the year 2014-15, 2015-16 and 2016-17. The performance of both banks on financial perspective has been decreased so as to improve it, it is suggested to improve performance on non-financial perspectives because improvement in non-financial measures directly improves the financial performance of banks.

Key Words: Balanced Scorecard, Performance Measurement, Banks

Introduction

A comprehensive transformation has taken place in the Indian Banking Sector during the past decade. Digitalization has occupied an enormous place in product & services and business operations of banks. Net banking, mobile banking, digital wallets, banking apps have become an important part of life to customers. Customers have become tech savvy and their expectations are continuously increasing from banks. To meet customers and other stakeholders' expectations and to gain advantage over competitors, banks are required to improve their performance continuously both in long run and short run. To improve performance it should be measured first. Measuring performance on financial parameters is not enough because it is affected by many other non-financial factors such as customers, business processes, employees, innovations, social or environment etc. These are the important part of strategic key objectives of

organizations, so they should be measured and improved first. Banks require a strong strategic performance measurement and management system to evaluate performance on all the parameters.

Balanced Scorecard is such an effective strategic performance measurement and management tool developed and introduced by Kaplan and Norton in 1992 in their article on "The Balanced Scorecard – Measures that drive Performance. They defined Balanced Scorecard as a Business Management Concept that converts financial and non-financial data on a single dashboard to measure organization's performance and meet its strategic objectives.

Review of Literature:

To identify the research gap, the study goes through the different Articles, Journals, research papers, thesis etc. Few of them are being described below:

Najjar and Kalaf (2012) designed a Balanced Scorecard to measure the performance of Large Local Bank (LLB) in Iraq from the year 2006 to 2009. The performance of the bank was found weak during the first three years of the study with 47%, 43% and 47% respectively and fair in the last year with 58%. The study recommended that banks should implement BSC as a strategic and valuable performance measurement tool and integrate other perspectives with financial perspective to view performance

Panicker and Seshadri (2013) devised a Balanced Scorecard to determine the performance of Standard Chartered Bank. The study highlighted the importance of viewing performance from other perspective in addition to the financial perspective. With the increased demands from stakeholders, financial sector analysts, educators and practitioners, the BSC shall be widely used in the banking sector in India. More studies are needed to identify the relevant measures of the BSC for the Banking Sector.

Shahsoodi and Bahraloom (2014) evaluated the efficiency of Sadrat Bank Branches in Guilan by Data Envelopment Analysis (DEA) using Balanced Scorecard approach. It was found that 8 branches (40%) gained efficient scores 1 in the year 2010. Rest all branches were considered inefficient as their score was between 0-1.

Gupta A.K., Maheshwari M. and Sharma S. (2018), in their research paper measured the performance of State Bank of India on financial perspective of Balanced Scorecard during the years 2007-08 to 2016-17. It has been found that the performance of SBI bank has been decreased on financial perspective's measures except on liquidity measures. The study concluded that decline in financial

performance may be affected by performance on other non-financial aspects such as customer, internal business operations, learning & growth and innovation, or social and environment. So the performance should be evaluated on all the perspectives and reasons which affects financial performance must be identified and improved.

Gupta A.K., Maheshwari M. and Sharma S. (2018) evaluated the performance of HDFC bank during the year 2011-12 to 2015-16 using the Balanced Scorecard Model. It was found that the improvement on performance on customer, internal business processes, learning & Growth and Innovation and social and environment perspectives have a significant impact on financial performance of HDFC bank. They suggested that evaluation of performance on each perspective is the necessary requirement for banks so that the areas for improvement can be identified and enhanced in long term.

Research Methodology:

A.Objectives of the Study: The main objectives of the study are as follows:

- 1.To evaluate and compare the performance of HDFC bank and State Bank of India using Balanced Scorecard' perspectives with an additional perspective named "Social and Environment Perspective".
- 2.To identify the significant differences in the performance of both the banks and to suggest for future improvements.

B.Sample Size:- The sample of the study comprises of one private sector bank and one public sector bank selected on the basis of highest market capitalization in BSE Sensex. Ten financial years from 2007-08 to 2016-2017 have been taken as the study period.

C.Data Collection: The data for the study have been compiled through secondary sources which primarily includes the Annual Reports of the sampled banks, Business Responsibility Reports, Sustainability reports, RBI publications, Websites, Journals, Articles etc.

D.Hypotheses of the Study:

H0- There is no significant difference in the performance of HDFC Bank and State Bank of India on Financial, Customer, Internal Business Process, Learning & Growth Perspective and Social & Environment perspective of BSC during the last 10 years.

H1- There is a significant difference in the performance of HDFC Bank and State Bank of India on Financial, Customer, Internal Business Process, Learning & Growth Perspective and Social & Environment perspective of BSC during the last 10 years.

E.Data Analysis Tools and Techniques:

This paper emphasises on the comparative analysis of the performance of HDFC and SBI bank on different perspectives of BSC during last ten years. For this purpose, a Balanced Scorecard Model has been developed after going through the literature available nationally [Dave and Dave (2010), Panicker and Sheshadri (2013), Shahsoodi and Bahraloom (2014) etc.] and internationally [Kaplan and Norton (1992, 1996), Davis Albright (2004), Wu et al. (2009), Fago (2010), Umar and Olatunde (2011), Tekar et al. (2011), Amiri et al. (2012), Rostami et al. (2015), Baber and Akter (2016), Balkovskaya and Filneva (2016), Hacıoglu and Yuksel (2016) etc.] on Balanced Scorecard specifically with reference to banking industry. Common

strategic objectives have been identified for Indian Banks and 8 measures under each perspectives have been selected to measure the performance of banks. A performance scale has been framed for each measure separately by keeping in view the highest and the lowest values. Maximum marks assigned for each perspective were 400 i.e. 50 Scores x 8 measures so total maximum scores for complete Performance on BSC are 2000 i.e. 400 Scores x 5 perspective. After measuring performance scores for each perspective, a non-parametric Kruskal Wallis Test has been applied using IBM SPSS 22 to test the hypotheses of the study. Total scores will be graded on the basis of below Table 1

Table : 1

Scores	Grade
More than 80%	Excellent
More than 70%	Very Good
More than 60%	Good
More than 50%	Fair
Less than 50%	Poor

A.Limitations of the study:

Selection of measures, preparation of performance scales, scores assignment and grading of performance of banks are based on own judgement after reviewing available literature so they are subjective in nature which have its own limitations. The sample size of the study is limited to 2 banks only.

Scorecard

The performance of HDFC Bank and SBI bank is measured, evaluated and compared on Financial, Customer, Internal Business process, Learning & Growth and Innovation, and Social & Environment Perspectives of Balanced Scorecard. The findings of the study are given below:

Measurement of Performance of Banks on Balanced

Findings of the Study:

Table 2: HDFC Bank's Performance Scores on Financial Perspective

Strategic Objectives	Measures	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17
Healthy Growth In Profitability	Growth Rate of Profits(%)	40	50	40	40	40	40	30	30	30	20
	Return on Assets (ROA)	40	40	40	40	50	50	50	50	50	50
Increasing Shareholder Value	Return on Equity (ROE)	40	40	40	40	40	50	50	40	40	40
Maintaining Liquidity	Cash-Deposit Ratio	50	40	40	50	30	20	30	30	20	20
	Credit-Deposit Ratio	40	40	50	50	50	50	40	40	40	40
Improving Asset Quality	Net NPA's to Net Advances Ratio	50	50	50	50	50	50	50	50	50	50
Capital Adequacy	Capital Adequacy Ratio	40	40	50	50	50	50	50	50	40	40
Improving Earning Quality	NIM to Total Assets Ratio	40	40	40	40	40	40	40	40	40	40
Total Score	400	340	340	350	360	350	350	340	330	310	300

Observations:

1. Table 2 reveals that HDFC Bank's performance on financial perspective has been declined during the study period as the total scores gained were 300 in 2016-17 as compared to 340 in 2007-2008. Bank performed best in year 2010-11 as the score gained was the highest in this year i.e. 360.
2. Growth rate of profits has a declining trend during the study period yet the scores on return on assets were maximum in the last six years. This implies that bank's management is efficiently deploying their assets in generating profits.
3. The scores on return on equity were consistent in almost each year of the study which indicates that bank is able to maintain its shareholder value.
4. Consistency in liquidity position has not been maintained by bank as the scores on Cash-deposit ratio and Credit-Deposit ratio has declined in the last four years of the study yet the bank is able to keep sufficient liquidity as prescribed by RBI.
5. NPA's to Net Advances Ratio scored the highest in all the years which is the indicator of bank's ability to recover its advances efficiently and have strong credit management policies with high quality of assets.
6. Bank has maintained sufficient capital against risk weighted assets even more than prescribed by RBI as the scores on capital adequacy ratio were maximum from 2009-10 to 2014-15.
7. Scores on NIM to total assets were constant in all the years which shows that there has been a stable trend in earning quality of the bank.

Table : 3 State Bank of India's Performance Scores on Financial Perspective

Strategic Objectives	Measures	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	
Healthy Growth In Profitability	Growth Rate of Profits(%)	40	30	10	0	40	20	0	20	0	10	
	Return on Assets (ROA)	30	30	30	20	30	30	20	20	20	20	
Increasing Shareholder Value	Return on Equity (ROE)	40	40	30	30	40	40	30	30	20	20	
Maintaining Liquidity	Cash-Deposit Ratio	40	30	30	40	20	20	30	30	30	30	
	Credit-Deposit Ratio	50	50	50	40	40	40	40	40	40	50	
Improving Asset Quality	Net NPA's to Net Advances Ratio	40	40	40	40	40	30	30	30	20	20	
Capital Adequacy	Capital Adequacy Ratio	30	30	30	30	30	30	30	30	30	30	
Improving Earning Quality	NIM to Total Assets (Average) Ratio	30	30	20	30	30	30	30	30	30	30	
Total Score		400	300	280	240	230	270	240	210	230	190	210

Observations:

1. Table 3 shows that SBI performance scores on financial perspective have been declined continuously in the first four years of the study then increased to 270 in 2011-12 and then again had a declining scores.
2. Scores on Growth rate of profits and return on assets both have been declined in the last years of study. SBI is not able to sustain its profitability growth during the studied period.
3. Scores on Return on equity has also been declined to 20 in 2016-17 from 40 in 2007-08 which indicates the inefficiency of management in providing adequate returns to its shareholders.
4. Cash -deposit ratio has gained average scores and credit-deposit ratio has scored 40 or 50 in all the years which shows that bank has maintained sufficient liquidity and making full use of its funds by creating more assets.
5. Net NPA's to Net Advances ratio scores declined to 20 in 2016-17 from 40 in 2007-2008. It reveals that inefficient recovery of advances and poor credit management policies of the bank.
6. Bank has maintained sufficient capital against risk weighted assets as the Capital Adequacy ratio of the bank has a consistent trend.
7. Net Interest Margin to Total Assets ratio has also consistent trend as it scored 30 in almost each year. There was no improvement in the earning quality of the bank.

Table: 4 HDFC Bank's Performance Scores on Customer Perspective

Strategic Objectives	Measures	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17
Business Growth	Deposit Growth	50	50	20	30	20	30	30	30	30	20
	Credit Growth	40	50	30	30	30	30	30	30	30	20
Customer Growth	Saving A/c	40	40	50	30	20	20	20	30	20	40
	Current A/c	50	0	40	30	0	20	20	20	30	40
	Casa Ratio	50	40	50	50	50	40	40	40	40	50
Providing Excellent after sales services	Complaints Redressal Ratio	50	50	50	50	50	50	50	50	50	50
Increasing Market Share in	Deposits	20	30	30	30	30	30	30	40	40	40
	Advances	20	30	30	30	30	30	30	40	40	50
Total		400	320	290	300	280	230	250	250	280	310

Observations:

- Table 4 shows that the performance scores on customer perspective of HDFC bank does not reveal any major difference during the study period. The performance scores decreased to 230 in 2011-12 due to negative deposit growth in current accounts customer then again increased to 310 in 2016-17.
- The scores on growth rate in deposits and advances has been decreased to 20 in 2016-17 from 50 in early years of study period. Still bank has sustained its growth in deposits and advances accounts.
- Scores on growth rate in saving and currents accounts have been decreased during the mid years of study then again increased in the last years. Bank has maintained High CASA ratio which are low cost funds thus increases profit margin of the bank.
- HDFC bank has provided excellent after sales services and has scored the highest in all the years of the study.
- Market share of HDFC bank has also increased continuously in terms of deposits and advances that represents the better competitive position of the bank in market

Table: 5 State Bank of India's Performance Scores on Customer Perspective

Strategic Objectives	Measures	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17
Business Growth	Deposit Growth	30	40	10	20	20	20	20	20	10	20
	Credit Growth	30	40	20	20	20	30	20	10	30	10
Customer Growth	Saving A/c	20	30	30	30	20	20	20	10	20	30
	Current A/c	20	20	20	10	0	20	10	20	20	10
	Casa Ratio	40	40	40	50	40	40	40	40	40	40
Providing Excellent after sales services	Complaints Redressal Ratio	40	50	50	50	50	50	50	50	50	50
Increasing Market Share in	Deposits	50	50	50	50	50	50	50	50	50	50
	Advances	50	50	50	50	50	50	50	50	50	50
Total		400	280	320	270	280	250	280	260	250	270

Observations:

- SBI bank's performance on customer perspective has a slightly volatile trend and has no significant difference during the study period. The scores declined to 260 in 2016-2017 from 280 in 2007-08.
- Deposits and credit growth rate both have scored low during all years still bank has retained largest customer base both in deposits and advances.
- Scores on saving and current accounts growth rate were 20 or 30 in 2007-08 and 2008-09 respectively and below average in rest all the years. CASA ratio scored 40 in almost each year which shows that SBI bank is able able to attract deposits in low cost funds by providing efficient, prompt and smooth services to saving and current account holders.
- Complaints redressal ratio scored maximum scores in all the years which proves that bank is providing satisfactory after sales services to their customers.
- Market share of SBI bank in both the deposits and advances was the highest in all the years which indicates the best competitive position of the bank with largest base of customers in deposits and advances.

Table : 6 HDFC Bank's Performance Scores Perspective on Internal Business Process

Strategic Objectives	Measures	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17
Achieving Operational Excellence	Growth In total Business	40	40	20	30	20	20	30	20	20	20
	Business Per Employee	20	20	20	20	20	30	30	30	40	50
Productivity Growth	Profit Per Employee	20	20	20	20	20	30	40	40	40	50
	Ratio of Wage Bills to Total Cost	20	20	10	10	20	20	20	30	30	30
Reducing Cost of Business Operations	Ratio of Intermediation cost to Total Assets	20	20	30	30	20	20	30	30	30	30
	Advertisement Cost to Total Business										
	Volume Ratio	10	20	40	30	30	30	40	40	40	40
Increasing Geographical reach for customers	Growth In ATM's	10	10	20	20	30	30	40	40	40	40
	Growth In Branches	10	20	20	20	30	30	30	40	40	40
Total	400	150	170	180	180	190	210	260	270	280	300

Observations:

- HDFC Bank's performance scores on internal business process perspective has been improved year after year. The scores gained in year 2007-08 were 150 and increased to 300 in 2016-17.
- Score on growth in total business of HDFC bank has been declined to 20 in 2016-2017 from 40 in 2007-08. Operational efficiency was average during the study period.
- Scores on Business per employee and profit per employee have been increased from 20 in 2007-08 to maximum in 2016-17. Higher productivity growth and low cost on employees depicts better managerial and operational efficiency in effective utilization of manpower.
- Scores on ratio of wage bills to total cost and ratio of intermediation cost to total assets both have been increased to 30 in 2016-17 from 20 in 2007-08. Increase in scores of both ratios depicts that bank is able to reduce cost of business operations which improves the profitability of the bank. Advertisement cost to total business ratio has also increased which represents that bank is able to acquire more business with less advertisement efforts.
- HDFC bank has increased its geographical reach for their customers by continuous expansion in number of branches and ATM's in remote areas. The scores have increased to 40 in 2016-17 from 10 in 2007-08 for both branches and ATM's.

Table : 7 State Bank of India's Performance Scores on Internal Business Process Perspective

Strategic Objectives	Measures	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17
Achieving Operational Excellence	Growth In total Business	20	30	10	20	20	20	20	10	10	20
	Business Per Employee	20	20	20	30	30	30	40	40	50	50
Productivity Growth	Profit Per Employee	10	20	20	10	20	20	20	20	20	20
	Ratio of Wage Bills to Total Cost	10	10	10	10	10	10	10	10	10	10
Reducing Cost of Business Operations	Ratio of Intermediation cost to Total Assets	40	40	30	30	30	30	30	40	40	40
	Advertisement Cost to Total Business										
	Volume Ratio	40	40	40	50	50	40	50	50	50	50
Increasing Geographical reach for customers	Growth In ATM's	20	30	50	50	50	50	50	50	50	50
	Growth In Branches	50	50	50	50	50	50	50	50	50	50
Total	400	210	240	230	250	260	250	270	270	280	290

Observations:

- It has been observed that performance of SBI bank on internal business perspective has been significantly improved year wise. The scores gained in 2007-08 were 210 only and reaches to 290 in 2016-17.
- Growth rate of business was below average in all the years of the study except in 2008-09.
- Scores on Business per employee has increased to 50 in 2016-17 from 20 in 2007-08 but the profit per employee was below average for all the years. Employees are efficient enough to generate sufficient business for the bank but profit per employee has decreased due to increase in other operational costs.
- Ratio of wage bills to total cost have scored 10 in all the years and ratio of intermediation cost to total assets have scored 40 in almost every year. This implies that

bank is spending more on employees which has increases employee productivity but decrease the profitability too. Advertisement cost to total business volume ratio scored 40 or 50 which shows that minimum cost on advertisement has acquired more

business to the bank.

- Growth in ATM's and branches scored 50 in all the years of study which indicates the increased reach to customers in remote locations from the beginning of the study period.

Table : 8 HDFC Bank's Performance Scores on Learning & Growth and Innovation Perspective

Strategic Objectives	Measures	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17
Improve Employees Capability/Training & Development	Number of Employees	20	30	30	30	40	40	40	40	50	50
	Increase in Expenditure of Employees	20	20	20	30	30	30	30	30	30	40
	Percentage of employees trained	N.A.	N.A.	N.A.	N.A.	N.A.	40	50	50	50	50
Digitalization of Products & Services/Providing Reliable IT infrastructure	Number of Debit Cards	30	50	50	50	50	50	50	50	50	50
	Number of Credit Cards	40	50	50	50	50	50	50	50	50	50
	Number of POS Terminals	N.A.	N.A.	N.A.	20	30	40	30	40	40	50
Reliable IT infrastructure	Number of Mobile Transactions	N.A.	N.A.	10	10	10	10	20	50	50	50
	Number of NEFT Transactions	N.A.	20	20	50	50	50	50	50	50	50
Total	400	110	170	180	240	260	310	320	360	370	390

Observations:

- The performance scores of HDFC bank on learning & growth and innovation perspective have been increased to 390 in 2016-17 from 110 in 2007-08. The performance of the bank has been improved during the study period.
- Scores on number of employees and expenditure on employees have increased from 20 in 2007-08 to 40 and 50 in 2016-17 respectively. Bank has recruited skilled employees and has increased expenditure with

the increase in number of employees to retain them. Training to all employees has been imparted in all the years to improve their capabilities.

- Scores on number of debit cards, credit cards, POS terminals, number of mobile transactions and NEFT transactions have increased to maximum in 2016-17. This indicates bank is able to provide reliable IT infrastructure for providing digital products/services to its customer and has taken necessary initiatives to cope up with high pace of competition in digitalised environment.

Table : 9 State Bank of India's Performance Scores on Learning & Growth and Innovation Perspective

Strategic Objectives	Measures	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17
Improve Employees Capability/Training & Development	Number of Employees	50	50	50	50	50	50	50	50	50	50
	Increase in Expenditure of Employees	20	20	30	30	40	40	50	50	50	50
	Percentage of employees trained	N.A.	N.A.	N.A.	N.A.	50	40	50	50	50	40
Digitalization of Products & Services/Providing Reliable IT infrastructure	Number of Debit Cards	50	50	50	50	50	50	50	50	50	50
	Number of Credit Cards	N.A.	N.A.	N.A.	30	30	30	30	40	40	50
	Number of POS Terminals	N.A.	N.A.	N.A.	N.A.	10	10	20	30	40	50
Reliable IT infrastructure	Number of Mobile Transactions	N.A.	N.A.	10	30	50	50	50	50	50	50
	Number of NEFT Transactions	N.A.	10	20	40	50	50	50	50	50	50
Total	400	120	130	160	230	330	320	350	370	380	390

Observations:

- SBI performance scores on learning & growth perspective have been increased to 390 in 2016-17 from 120 in 2007-08. As there was no significant difference in the performance after 2011-12.
- Bank gained the highest scores in all years of study on Growth in number of skilled employees. Bank has

simultaneously increased the expenditure on employees and provided training to maximum number of employees in all the years.

- SBI scored maximum marks on no. of debit cards as the bank is the leader in issuing highest number of debit cards. The scores on credit card was 30 in 2010-11 that increased to 50 in 2016-17. Scores on POS

terminals has also increased to 50 in 2016-17. Number of mobile transactions and NEFT transactions scored highest in last 6 years of the study. This implies that

bank has provided reliable IT infrastructure for digitalized product and services and cope up with the digitalization taking place in industry.

Table: 10 HDFC Bank's Performance Scores on Social and Environment Perspective

Strategic Objectives	Measures	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17
Increasing Responsibility towards society	Percentage of CSR Expenditure to Net Profits	N.A.	N.A.	N.A.	N.A.	N.A.	20	30	40	40	50
Increasing Gender Equality	Percentage of Female to Total employees	N.A.	N.A.	N.A.	N.A.	30	30	20	30	30	30
Promoting Financial Inclusion Plans	Growth in Branches in Rural & Semi urban Areas(Rural and semi urban to Total Branches)	20	20	20	30	40	40	40	40	40	40
	Ratio of Priority Sector Advances to Total Advances	20	40	40	40	40	40	30	30	40	30
	Total No. of beneficiaries of PMJDY	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	10	10	10
	Percentage Growth in Deposits of PMJDY Accounts	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	20	20
Promoting Environment Sustainability	Amount invested on Environment Sustainability	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	10	20	30
	Steps Taken for Environment Protection	N.A.	N.A.	N.A.	N.A.	N.A.	50	50	50	50	50
Total	400	40	60	60	70	110	180	170	210	250	260

Observations:

1. CSR expenditure of the bank has an increasing trend in the last five years so it scored maximum in last years.
2. Number of female employees has increased but the increase has no major difference so it scored 30 in all the years of the study.
3. To promote financial inclusion plans, bank has initiated to expand its branches more in rural and semi-

urban areas and scored 40 in last six years of the study. Scores on ratio of priority sector lending to total advances ratio scored 20-40 in all the years. Number of PMJDY accounts and deposits in these accounts have not increased much and scored 10 or 20 in all years.

4. HDFC scores on investment in promoting environment has increased from 10 in 2014-15 to 30 in 2016-17. Bank has taken all the necessary steps for protecting environment and scored 50 in all years.

Table: 11 State Bank of India's Performance Scores on Social and Environment Perspective

Strategic Objectives	Measures	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17
Increasing Responsibility towards society	Percentage of CSR Expenditure to Net Profits	N.A.	N.A.	10	10	20	30	30	20	30	20
Increasing Gender Equality	Percentage of Female to Total employees	N.A.	N.A.	N.A.	N.A.	N.A.	40	40	40	40	40
Promoting Financial Inclusion Plans	Growth in Branches in Rural & Semi urban Areas(Rural and semi urban to Total Branches)	50	50	50	50	50	50	50	50	50	50
	Ratio of Priority Sector Advances to Total Advances	30	30	30	40	30	30	30	30	30	30
	Total No. of beneficiaries of PMJDY	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	50	50	50
	Percentage Growth in Deposits of PMJDY Accounts	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	50	50
Promoting Environment Sustainability	Amount invested on Environment Sustainability	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	30	40	30
	Steps Taken for Environment Protection	N.A.	N.A.	N.A.	N.A.	N.A.	50	50	50	50	50
Total	400	80	80	90	100	100	200	200	270	340	320

Observations:

1. SBI has increased expenditure on CSR activities and scored 10-30 in all the years.
2. No. of female employees have also increased with the increase in number of total employees. This measure scored 40 in last five years of the study.
3. Bank has the largest number of branches in rural and semi urban areas. This measure scored 50 in all the years. Ratio of priority sector advances to total advances scored 30 in almost all years. Number of PMJDY accounts and deposits in such accounts scored 50 in all years as SBI has opened highest number of accounts and mobilized highest savings in such accounts.

4. Investment in environment protection scored 30 or 40 in last three years of study. Bank has taken necessary steps for environment protection and scored 50 in last 5 years of the study.

Intra-Bank Comparison of HDFC bank and State Bank of India on all the perspectives of Balanced Scorecard

Using IBM SPSS22, Kruskal Wallis Test has been applied to test whether HDFC and State bank of India shows any difference in the performance when Intra-Company Comparison is drawn for year 2007-08 to 2016-17.

Table: 12 Mean ranks of years for HDFC bank and State bank of India

Mean Ranks of Years for HDFC and SBI bank on different Perspectives																					
Name of the Perspective	Year->	2008		2009		2010		2011		2012		2013		2014		2015		2016		2017	
	Name of the Bank	N	Mean Rank																		
Financial Perspective	HDFC Bank	8	5.06	8	5.19	8	6.06	8	6.31	8	6.38	8	6.63	8	5.88	8	5.25	8	4.25	8	4
	SBI Bank	8	7.94	8	7.25	8	5.69	8	5.25	8	6.31	8	5.44	8	4.25	8	4.81	8	3.56	8	4.5
Customer Perspective	HDFC Bank	8	6.5	8	5.81	8	6	8	5.69	8	4.19	8	4.38	8	4.38	8	5.81	8	5.75	8	6.5
	SBI Bank	8	5.69	8	7.25	8	5.5	8	6.06	8	4.63	8	5.88	8	4.88	8	4.69	8	5.38	8	5.06
Internal Business Process Perspective	HDFC Bank	8	3.31	8	3.69	8	4.13	8	4.13	8	4.06	8	4.94	8	7.19	8	7.56	8	7.81	8	8.19
	SBI Bank	8	4.06	8	5.25	8	4.19	8	5.13	8	5.75	8	5.13	8	6.06	8	6.13	8	6.38	8	6.94
Learning & Growth and Innovation Perspective	HDFC Bank	4	2.1	5	4.5	6	4.5	7	5.4	7	6.1	8	6.1	8	6.1	8	6.1	8	6.7	8	7.4
	SBI Bank	3	4.17	4	4.17	5	4.83	6	4.83	8	5.5	8	5.5	8	6.5	8	6.5	8	6.5	8	6.5
Social & Environment Perspective	HDFC Bank	2	1.5	2	4.75	2	4.75	2	5.75	3	7.5	5	7.5	5	5.25	7	5.25	8	7.5	8	5.25
	SBI Bank	2	5.25	2	5.25	3	5.25	3	7.75	3	5.25	5	5.25	5	5.25	7	5.25	8	5.25	8	5.25

Table: 13 Result of Kruskal Wallis Test for HDFC Bank and State Bank of India on different perspectives

Name of the Perspective		HDFC		SBI	
		Values	Null Hypothesis Accepted/Rejected	Values	Null Hypothesis Accepted/Rejected
Financial Perspective	Chi-Square	11.446	Accepted	22.18	Rejected
	Degree of Freedom	9		9	
	p-Value	0.246		0.008	
Customer Perspective	Chi-Square	8.356	Accepted	10.2	Accepted
	Degree of Freedom	9		9	
	p-Value	0.499		0.335	
Internal Business Process Perspective	Chi-Square	35.000	Rejected	12.97	Accepted
	Degree of Freedom	9		9	
	p-Value	0.000		0.164	
Learning & Growth and Innovation Perspective	Chi-Square	24.664	Rejected	9.000	Accepted
	Degree of Freedom	9		9	
	p-Value	0.003		0.437	
Social & Environment Perspective	Chi-Square	8.393	Accepted	9.000	Accepted
	Degree of Freedom	9		9	
	p-Value	0.495		0.437	

Table 13 shows that p-value for HDFC bank in internal business process perspective and Learning & Growth Perspective is 0.000 and 0.003 respectively which is significantly less than 0.05, this implies null hypothesis is

rejected for these perspectives. P-value for SBI bank on financial perspective is 0.008 which is less than 0.05, this implies that null hypothesis is rejected for this perspective of SBI.

Table: 14 Grading of Performance of HDFC and SBI on BSC

Year	HDFC		SBI	
	Performance	Grade	Performance	Grade
2007-08	48	Poor	50	Poor
2008-09	52	Fair	53	Fair
2009-10	54	Fair	50	Fair
2010-11	57	Fair	55	Fair
2011-12	57	Fair	61	Good
2012-13	65	Good	65	Good
2013-14	67	Good	65	Good
2014-15	73	Very Good	70	Very Good
2015-16	75	Very Good	73	Very Good
2016-17	78	Very Good	74	Very Good

Conclusion and Suggestions:

The findings reveals that there is no significant difference in the performance of HDFC bank on financial perspective, customer perspective and Social & Environment Perspective and there is no significant difference in the performance of SBI on all perspectives except financial perspective when intra company comparison is drawn for the financial years from 2007-08 to 2016-17. The overall BSC performance scores of HDFC bank and SBI has significantly improved and graded very good in last years than poor or fair in earlier years of study. The overall performance scores of HDFC bank were higher than SBI from the year 2013-14 to 2016-17. It is concluded that the performance of both the banks on financial parameters is decreasing so it is suggested that both the banks should concentrate on improving the performance on non-

financial perspectives because improvement in non-financial measures directly improves the financial performance. Banks should try to cut their cost on employees and other operational costs to increase their profit margin. Both banks should also concentrate on customer satisfaction and should confirm that products and services offered meets customers' expectations so that the growth rate of business can be increased. Performance on Social and environment measures should be improved to improve the reputation of the banks in the eyes of stakeholders. Balanced Scorecard is the worthwhile tool for measuring performance of banks which reveals all the financial and non-financial information and helps in identifying the improvement areas and attain their strategic objectives to gain a competitive edge over competitors.

ANNEXURE:

Following tables show the performance of banks on different measures under each perspective on the basis of which scores have been assigned.

HDFC Bank's Performance on Financial Perspective												
Strategic Objectives	Measures	Unit	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17
Healthy Growth	Growth Rate of Profits(%)	%	39.49	41.45	30.93	33.16	31.60	30.18	26.05	20.49	20.36	18.33
	Return on Assets (ROA)	%	1.42	1.42	1.45	1.57	1.68	1.82	1.90	1.89	1.85	1.81
Increasing Sharholder Value	Return on Equity (ROE)	%	17.76	17.23	16.31	16.75	18.69	20.34	21.28	19.37	18.26	17.95
	Cash-Deposit Ratio	%	12.46	9.47	9.25	12.03	6.08	4.94	6.9	6.1	5.5	5.89
Maintaining Liquidity	Credit-Deposit Ratio	%	62.94	69.24	75.17	76.70	79.21	80.92	82.49	81.08	85.02	86.16
	Net NPA's to Net Advances Ratio	%	0.47	0.63	0.31	0.19	0.18	0.2	0.27	0.25	0.28	0.33
Capital Adequacy	Capital Adequacy Ratio	%	13.6	15.69	17.45	16.22	16.52	16.8	16.08	16.79	15.53	14.55
	Interest Income to Total Assets(Average) Ratio	%	9.02	10.31	7.97	7.97	9.06	9.5	9.22	8.96	9.05	8.64
Improving Earning Quality	NIM to Total Assets Ratio	%	4.66	4.68	4.13	4.22	4.19	4.28	4.14	4.14	4.15	4.13

SBI Bank's Performance on Financial Perspective												
Strategic Objectives	Measures	Unit	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17
Healthy Growth in Profitability	Growth Rate of Profits (%)	%	48.18	35.55	0.49	-9.84	41.66	20.48	-22.78	20.30	-24.05	5.36
	Return on Assets (ROA)	%	1.04	1.08	0.91	0.73	0.91	0.97	0.65	0.68	0.46	0.42
Increasing Shareholder	Return on Equity (ROE)	%	16.75	17.05	14.80	12.62	15.72	15.43	10.03	10.62	7.30	6.31
	Cash-Deposit Ratio	%	9.59	7.49	7.62	10.11	5.18	5.47	6.09	7.35	7.49	6.26
Maintaining Liquidity	Credit-Deposit Ratio	%	77.55	73.11	78.58	81.03	83.13	86.94	86.76	82.45	84.57	76.83
	Net NPA's to Net Advances Ratio	%	1.78	1.78	1.72	1.63	1.82	2.10	2.57	2.12	3.81	3.71
Capital Adequacy	Capital Adequacy Ratio	%	13.47	14.25	13.39	11.98	13.86	12.92	12.44	12.00	13.12	13.11
	Interest Income to Total Assets (Average) Ratio	%	7.60	7.57	7.04	7.15	8.32	8.25	8.12	7.94	7.60	7.07
Improving Earning Quality	NIM to Total Assets (Average) Ratio	%	2.64	2.48	2.35	2.86	3.38	3.06	2.93	2.86	2.64	2.49

HDFC Bank's Performance on Customer Perspective												
Strategic Objectives	Measures	Unit	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17
Business Growth	Deposit Growth	%	47.54	41.72	17.22	24.60	18.28	20.08	24.00	22.72	21.21	17.79
	Credit Growth	%	35.11	55.90	27.25	27.14	22.15	22.67	26.40	20.63	27.11	19.37
Customer Growth Rate	Saving A/c	%	33.54	33.50	42.85	27.21	16.63	19.21	16.92	21.13	18.38	30.90
	Current A/c	%	45.16	-1.09	30.57	25.10	-2.27	15.20	17.54	19.64	20.20	30.70
	Casa Ratio	%	54.49	44.37	51.98	52.69	48.40	47.43	44.81	44.03	43.25	48.03
Providing Excellent after sales services	Complaints Redressal Ratio	%	99.70	99.17	99.34	99.32	98.97	98.31	99.17	98.87	98.88	98.08
Increasing Market Share in	Deposits	%	3.0	3.5	3.5	3.7	3.8	4.0	4.3	4.8	5.4	5.8
	Advances	%	2.6	3.3	3.6	3.7	3.9	4.1	4.5	4.9	5.9	6.8

SBI Bank's Performance on Customer Perspective												
Strategic Objectives	Measures	Unit	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17
Business Growth	Deposit Growth	%	23.39	38.08	8.36	16.14	11.75	15.24	15.94	13.08	9.76	18.14
	Credit Growth	%	23.55	30.17	16.48	19.75	14.65	20.52	15.70	7.46	12.59	7.34
Customer Growth Rate	Saving A/c	%	19.43	28.53	29.88	28.30	11.76	15.50	13.79	8.69	13.35	26.97
	Current A/c	%	19.68	12.86	10.68	7.03	-24.96	14.45	0.49	10.01	12.23	9.02
	Casa Ratio	%	46.96	41.64	47.26	49.42	44.81	44.82	42.91	41.34	42.62	44.57
Providing Excellent after sales services	Complaints Redressal Ratio	%	93.91	96.37	96.00	97.66	97.10	98.28	98.61	98.13	98.78	96.88
Increasing Market Share in	Deposits	%	16.19	18.26	16.94	16.63	16.17	16.19	16.34	16.71	17.15	18.40
	Advances	%	16.83	18.08	18.07	17.65	17.10	17.78	17.96	17.60	18.54	19.36

HDFC Bank's Performance on Internal Business Perspective												
Strategic Objectives	Measures	Unit	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17
Operational Excellence	Growth In total Business	%	42.48	47.20	21.32	25.69	19.96	21.22	25.07	21.77	23.86	18.51
	Business Per Employee	Million	43918.98	45873.67	56513.07	66108.67	66911.81	77227.65	98340.46	107003.99	115472.35	142094.02
	Profit Per Employee	Million	425.89	427.45	568.28	704.26	781.99	969.19	1243.80	1339.16	1404.41	1725.42
Reducing Cost of Business Operations	Ratio of Wage Bills to Total Cost	%	15.07	15.50	16.68	17.15	14.01	13.01	12.04	11.86	11.49	11.60
	Ratio of Intermediation cost to Total Assets	%	3.34	3.50	2.93	2.86	3.02	3.04	2.70	2.59	2.55	2.46
	Advertisement Cost to Total Business Volume Ratio	%	0.070	0.045	0.028	0.043	0.034	0.034	0.021	0.023	0.025	0.017
Increasing Geographical reach for customers	Growth In ATMs	No.	1977	3295	4232	5471	8913	10743	11256	11766	12000	12260
	Growth In Branches	No.	761	1412	1725	1986	2544	3062	3403	4014	4520	4715

STATE BANK OF INDIA Performance on Internal Business Perspective												
Strategic Objectives	Measures	Unit	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17
Operational Excellence	Growth In total Business	%	23.46	34.63	11.79	17.73	13.05	17.64	15.83	10.47	11.04	13.19
	Business Per Employee	Million	53244.73	62389.57	71694.34	75836.79	88695.81	98484.25	116882.05	134908.68	153770.97	172538.13
	Profit Per Employee	Million	375.50	443.00	457.62	370.72	543.31	617.84	488.81	614.40	479.00	500.27
Reducing Cost of Business Operations	Ratio of Wage Bills to Total Cost	%	17.48	16.64	18.86	21.16	19.01	17.57	18.33	17.40	16.90	16.54
	Ratio of Intermediation cost to Total Assets	%	1.96	1.86	2.01	2.02	2.04	2.02	2.13	2.00	1.90	1.84
	Advertisement Cost to Total Business Volume Ratio	%	0.018	0.020	0.016	0.015	0.011	0.017	0.011	0.010	0.010	0.008
Increasing Geographical reach for customers	Growth In ATMs	No.	5848	8506	16294	20084	22141	27175	43515	42222	42740	42454
	Growth In Branches	No.	10186	11448	12496	13542	14097	14816	15869	16333	16784	17170

HDFC Bank's Performance on Learning & Growth and Innovation Perspective												
Strategic Objectives	Measures	Unit	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17
Improve Employees Capability/Training & Development	Number of Employees	No.	37386	52687	51888	55752	66076	69401	68165	76286	87555	84325
	Increase in Expenditure of Employees	%	348	425	441	509	515	571	613	623	651	769
	Percentage of employees trained	%	-	-	-	-	-	75	100	100	100	100
Digitalization of Products & Services/Providing Reliable IT Infrastructure	Number of Debit Cards	No.	5754000	9080000	9830000	13207311	14293166	15758792	17421882	21630195	23034150	23567617
	Number of Credit Cards	No.	3800000	4390000	4450000	5089800	5602439	6557564	5137406	5973188	7281693	8544721
	Number of POS Terminals	No.	-	-	-	125179	183769	242823	215524	244991	283274	429749
	Number of Mobile Transactions	No.	-	-	157058	261438	221633	841816	2548709	11091012	41545403	259447381
	Number of NEFT Transactions	No.	-	8585900	15277225	36923270	59149782	97630484	141949150	184926452	232234722	344931295

State Bank of India Performance on Learning & Growth Perspective												
Strategic Objectives	Measures	Unit	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17
Improve Employees Capability/Training & Development	Number of Employees	No.	179205	205896	200299	222933	215481	228296	222809	213238	207739	209567
	Increase in Expenditure of Employees	%	434	473	637	682	788	805	1010	1104	1209	1264
	Percentage of employees trained	%	-	-	-	-	96.7	77.09	105	99.74	100	66.37
Digitalization of Products & Services/Providing Reliable IT Infrastructure	Number of Debit Cards	No.	-	39150000	55400000	73134000	90978000	11044000	12223125	160667620	189341852	218879742
	Number of Credit Cards	No.	-	-	-	2088515	2225141	2572777	2858116	3158032	3620042	4569048
	Number of POS Terminals	No.	-	-	-	-	10673	65514	135853	200878	302119	509113
	Number of Mobile Transactions	No.	-	-	740853	4989336	20637795	36695557	53058851	77126212	144112690	240995902
	Number of NEFT Transactions	No.	-	6418716	11835703	37902540	70188149	128630055	245809454	358451003	488988808	537831219

HDFC Bank's Performance on Social Perspective												
Strategic Objectives	Measures	Unit	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17
Increasing Responsibility towards society	Percentage of CSR Expenditure to Net Profits	%	-	-	-	-	-	0.97	1.33	1.75	1.50	2.96
	Percentage of Female to Total employees	%	0.00	0.00	0.00	13.35	17.72	13.31	16.62	17.18	17.28	
Promoting Financial Inclusion Plans	Growth in Branches in Rural & Semi urban Areas(Rural and semi urban to Total Branches)	%	23.78	27.76	28.00	37.36	45.01	51.99	56.01	54.98	55.00	52.41
	Ratio of Priority Sector Advances to Total Advances	%	27.47	30.12	35.09	34.24	32.68	32.01	29.58	29.03	30.52	29.31
	Total No. of beneficiaries of PMJDY	No.	N.A.	1330752	1593634	1733139						
	Total Deposits in PMJDY accounts	Crore	N.A.	42634.24	56725.55	82918.39						

State Bank of India's Performance on Social Perspective												
Strategic Objectives	Measures	Unit	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17
Increasing Responsibility towards society	Percentage of CSR Expenditure to Net Profits	%	-	-	0.29	0.29	0.80	1.27	1.31	0.95	1.13	0.97
	Percentage of Female to Total employees	%	-	-	-	-	-	20.51	20.26	20.96	21.46	22.27
Promoting Financial Inclusion Plans	Growth in Branches in Rural & Semi urban Areas(Rural and semi urban to Total Branches)	%	66.85	67.06	65.56	66.81	69.88	66.37	65.88	65.84	65.17	64.00
	Ratio of Priority Sector Advances to Total Advances	%	28.61	26.48	26.99	30.61	28.84	25.28	23.21	22.23	22.45	21.72
	Total No. of beneficiaries of PMJDY	No.	N.A.	33314711	53172369	85706903						
	Total Deposits in PMJDY accounts	Crore	N.A.	129656.78	433229.54	1043025.63						

HDFC BANK'S Performance on Environment Perspective												
Strategic Objectives	Measures	Unit	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17
	Amount invested on Environment Sustainability	Rs. In Crore	N.D.	0.95	1.67	2.68						
	Do you have policies for Environment Sustainability	Yes/No	N.D.	N.D.	N.D.	N.D.	N.D.	Yes	Yes	Yes	Yes	Yes
	Do these policies conform to any National/International Standards?	Yes/No	N.D.	N.D.	N.D.	N.D.	N.D.	Yes	Yes	Yes	Yes	Yes
Promoting Environment Sustainability	Do you have Board/Committee to see the implementation of the Policy?	Yes/No	N.D.	N.D.	N.D.	N.D.	N.D.	Yes	Yes	Yes	Yes	Yes
	Have you taken initiatives for Clean technology, energy efficiency, Renewable energy recycling of e-waste?	Yes/No	N.D.	N.D.	N.D.	N.D.	N.D.	Yes	Yes	Yes	Yes	Yes
	Have you started Quantitative measurement of Carbon emissions, energy consumption, and e-waste recycled etc. ?	Yes/No	N.D.	N.D.	N.D.	N.D.	N.D.	Yes	Yes	Yes	Yes	Yes

SBI BANK'S Performance on Environment Perspective												
Strategic Objectives	Measures	Unit	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17
	Amount invested on Environment Sustainability	Rs. In Crore	N.D.	N.D.	N.D.	N.D.	0.67	N.D.	N.D.	3.09	4.78	3.57
	Do you have policies for Environment Sustainability	Yes/No	N.D.	N.D.	N.D.	N.D.	No	Yes	Yes	Yes	Yes	Yes
	Do these policies conform to any National/International Standards?	Yes/No	N.D.	N.D.	N.D.	N.D.	No	Yes	Yes	Yes	Yes	Yes
Promoting Environment Sustainability	Do you have Board/Committee to see the implementation of the policy?	Yes/No	N.D.	N.D.	N.D.	N.D.	N.D.	Yes	Yes	Yes	Yes	Yes
	Have you taken initiatives for Clean technology, energy efficiency, Renewable energy recycling of e-waste?	Yes/No	N.D.	N.D.	N.D.	N.D.	N.D.	Yes	Yes	Yes	Yes	Yes
	Have you started Quantitative measurement of Carbon emissions, energy consumption, and e-waste recycled etc. ?	Yes/No	N.D.	N.D.	N.D.	N.D.	N.D.	Yes	Yes	Yes	Yes	Yes

References:

- Amiri, M.P., Amiri A.P. and Amiri M.P. (2012). An Analytical Network Process Approach for evaluating Banking Performance based on Balanced Scorecard. *Trends Applied Sciences*. 1-11. 2012.
- Baber, MD. and Akter, M. (2016). Developing a Comprehensive Balanced Scorecard for the Banking Sector in Bangladesh: An Empirical Study. *Journal of Business Studies*. XXXVII(1). 159-186.
- Balkovskaya D. and Filneva L. (2016). The Use of Balanced Scorecard in Bank Strategic Management. *International Journal of Business Excellence*. 9(1). 48-67.
- Dave, S. R. & Dave, S. R. (2012, December). Applying Balanced Scorecard in Indian banking Sector: An Empirical Study of the State bank of India. *Pacific Business Review International*, 5(6), 108-120.
- Davis, S. & Albright, T. (2004). An Investigation of the effect of Balanced Scorecard Implementation on Financial Performance. *Management Accounting Research*. 15. 135-153.
- Fago, G. (2010). Performance Measurement using Balanced Scorecard-A Case of Nepal. *Management Dynamics-A Journal on Management and Economics*. 14(1). 1-9.
- Gupta, A.K., Maheshwari M. and Sharma S. (2018). A Study on Performance Evaluation of State Bank of India using Financial Perspective of Balanced Scorecard. *Inspira-Journal of Modern Management & Entrepreneurship*. 08(2). 219-224.
- Gupta, A.K., Maheshwari M. and Sharma S. (2018). Performance Evaluation using Balanced Scorecard Model in Banking Industry: A Case Study of HDFC Bank. *Pacific Business Review International*. 10(9). 64-78.
- Hacioglu, U. and Yuksel, S. (2016). Balanced Scorecard-Based Performance assessment of Turkish Banking Sector with Analytic Network Process. *International Journal of Decision Sciences Applications*. 1(1),1-21.
- Kaplan, R.S. & Norton, D.P. (1992). The Balanced Scorecard – Measures that Drive Performance. *Harvard Business Review*, 70(1), 71- 79.
- Panicker, S. and Seshadri, V. (2013). Devising a Balanced Scorecard to Determine Standard Chartered bank's Performance: A Case Study. *International Journal of Business Research and development*, 2(2), 35-42.
- Rostami, M.,Goudarzi , A. , and Zaj, M.M. (2015). Defining Balanced Scorecard Aspects in Banking Industry Using FAHP Approach. *International Journal of Economic and Business Administration*, 1 (1), 25-38.
- Shahsoodi K. and Bahraloloom S. A. (2014). Evaluating the Efficiency of Banking Industry by DEA: Balanced Scorecard Approach. *Indian Journal of Fundamental and Applied Life Sciences*. 4(S1). April-June, 1426-1435.
- Tekar, Teker and Kent (2011). Measuring Commercial Bank's Performance in Turkey: A Proposed Model. *Journal of Applied Sciences*. 1(3). 97-112.
- Umar, G. & Olatunde, O. J. (2011). Performance Evaluation of Consolidated Banks in Nigeria by Using Non-Financial Measures. *Interdisciplinary Journal of Research in Business*. 1(9). 72-83.
- Wu, H.Y. (2012). Constructing a Strategy Map for Banking Institution with Key Performance Indicators of the Balanced Scorecard. *Evaluation and Program Planning*. 35. 303-320.
- Wu, H.Y., Tzeng, G. H. & Chen, Y.H. (2009). A Fuzzy MCDM Approach for Evaluating Banking Performance Based on Balanced Scorecard. *Expert Systems with Applications*. 36(6). 10135-10147.
- Al-Najjar,S. M. & Kalaf, K. H.(2012). Designing a Balanced Scorecard to Measure a Bank's Performance: A Case Study. *International Journal Business Administration*, 3(4), 44-53. .
- <https://www.moneycontrol.com/stocks/marketinfo/marketcap/bse/banks-private-sector.html>
- <https://www.moneycontrol.com/stocks/marketinfo/marketcap/bse/banks-public-sector.html>
- https://www.hdfcbank.com/aboutus/cg/annual_reports.htm
- <https://www.sbi.co.in/portal/web/corporte-governance/annual-reports>
- <https://m.rbi.org.in/Scripts/FAQView.aspx?Id=87>
- <https://www.pmjdy.gov.in/scheme>