Promoting Research

Orissa Journal of Commerce
Vol. 43, Issue 1, January-March 2022
ISSN: 0974-8482

URL: www.ojcoca.org
DOI: https://doi.org/10.54063/ojc.2022.v43i01.09

A Comparative Performance Measurement of Select Indian Commercial Banks: Application of Balanced Scorecard Model

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To cite this paper

Bosu, A., & Mishra, D. (2022). A Comparative Performance Measurement of Select Indian Commercial Banks: Application of Balanced Scorecard Model. *Orissa Journal of Commerce*. 43(1), 112-126.

Keywords

Balanced scorecard model, Performance measurement, Non-financial perspectives, Public sector banks, Private sector banks

JEL Classification

F65, G21, G29, M49

Abstract: A balanced scorecard is a holistic tool of measurement which includes both tangible and intangible values of the organization for performance evaluation. The present study attempts to explore the application of the balanced scorecard to assess and differentiate the performance of select Indian public and private banks. To achieve these objectives, banks' performance is measured on the identified twenty financial and non-financial key performance indicators and has been assigned scores based on performance scales. Further, statistical tools are exerted to test the hypotheses of this study. The t-test reveals the operation of public and private banks is significantly different given customer perspectives among all perspectives of the Balanced Scorecard approach over the period. This research concludes that Indian commercial banks' performance from a financial perspective is good and needs to improve the performance of the banks related to the innovation and growth perspective of the balanced scorecard.

1. Introduction

Commercial banks are performing a pivotal role in the development of any nation. The Indian banking sector has been facing an extensive transmutation over the last few decades, like the digitalization of banking operations through mobile banking, net banking, digital wallets, online payments, transfers, etc. The banking sector also has competitive challenges such as a change in customer preference, complying with stringent regulatory compliances, increasing non -performing assets level, increasing number of private and foreign banks, losses in rural banks, etc. To overcome these challenges over competitors and meet the customer's expectations, banks must regularly measure their performance for long and short periods. The performance measurement enables the banks to develop strategies, put them into action, and predict future hurdles in their operations to face the competition.

Performance measurement has been acknowledged as an essential aspect of improving organizational performance (Taticchi *et al.*, 2010). Performance measurement evaluates in an organization how successfully the operations are monitored and managed to attain their ultimate aim(Moullin, 2007). Before 1990, the performance measurement involves traditional performance evaluation, i.e., analyzing the firm's financial indicators. But later in 1985, the authors argued some limitations of financial analysis and stated that an organization should be measured in the context of financial along with non-financial parameters. Financial parameters are celestial for evaluating organizational performance, informing the stakeholders about how much a firm has potential for value creation. But the authors argued some limitations of the financial indicators are that it is historical and reflects only the results of managerial decisions (Dixon *et al.,* 1990); not furnish adequate prediction for the function of subsequent time (Kennerley and Neely, 2003); Hayes and Abernathy (1980) argued financial performance-focused only on interim objectives; Neely *et al.* (1995) found it focused more on internal parameters than external; Skinner (1974) vindicated financial indicators neglected to strategic measures; Richardson *et al.* (1980) evinced financial indicators repressed learning and innovation. From the above literature, it is evident that financial analysis only reflects the firm's past operations. In contrast, the non-financial performance measurement can indicate future competition prospects and help identify the strategic objectives to overcome future business conflicts. Measuring financial performance is not enough because non-financial indicators affect performance enormously.

1.1. Balanced Scorecard (BSC)

After many discussions by theorists and researchers regarding modern management accounting in multiple research papers, articles, and other documents during the 1980s. The Balanced Scorecard (BSC) theory was introduced by Kaplan and Norton in 1992. The BSC is a strategic management and measurement concept that transmutes both the financial and non-financial facts into an action plan that assists the business in measuring its performance and meeting long-term and short-term goals (Kaplan and Norton, 1992). BSC measures four critical perspectives of an organization: Finance, Consumers, Internal Processes, and Learning & Growth. The BSC puts the organization's strategy and vision into action by placing them at the center of financial along-with the non-financial measurements (Kaplan and Norton, 1992). These financial and operational measures have been fixed to achieve the long-term strategic objectives. The BSC has transmogrified into a comprehensive tool for measuring and managing the performance that embraced and measured financial along-with the non-financial parameters of the banks' strategic areas for achieving the long-term objectives (Gupta *et al.*, 2020). The BSC focused on balancing the financial parameters along-with three non-financial parameters of consumers, internal processes, and learning and growth(Yahaya, 2009).

2. Review of Literature

2.1. Performance Measurement

Neely (1994) defined the Performance Measurement System (PMS)as an assortment of metrics exercised to appraise both efficacy and efficaciousness of actions. It measures the performance by considering financial or the non-financial, economic or non-economical, intrinsic or extrinsic, quantitative or qualitative, and leading or lagging indicators of the organization, which should be associated with past

strategy guiding future progress (Muravu and Service, 2021; Neely, 2005; Neely *et al.*, 1995). Performance Measurement System comprises mainly three main steps, i.e., design, implementation, and application of measures, followed by review and learning from that measurement (Bourne *et al.*, 2000). PMS is referred to as multidimensional, which embraces the course of action through which the organization's performance is observed and assessed to figure out whether the company is getting successful in attaining its goals concerning customers and other stakeholders of the firm (Ibrahim, 2015). After a thorough literature study of several articles and documents connected with the performance measurement, different PMS models are proposed by various authors such as Keegan *et al.* (1989) developed the Performance Measurement Matrix; Lynch and Cross (1991) constructed the SMART-Performance Pyramid; Kaplan and Norton (1992) developed the Balanced Scorecard Model; Neely *et al.* (2001) developed the Integrated Performance Measurement System, Performance Prism.

2.2. Empirical Application of Balanced Scorecard

Al-Najjar and Kalaf (2012) constructed a Balanced Scorecard for assessing the efficiency of a local bank in Iraq in their research paper. Their study found that the Banks' performance is feeble, and the Banks' performance on internal business processes and customer perspective is not satisfactory. Performance score on financial and learning & growth perspective is better than other two perspectives. Ibrahim (2015)investigated how the BSC was applied as a performance measurement tool in Nigeria's banking industry. The researcher adopted 11 banks as sample banks, and the Kruskal-Wallis test was performed, and the study figured out customer perspective was getting more attention among all four perspectives of the BSC model for measuring the banks' performance.

Annapurna and Manchala (2017) applied ANOVA to analyze the divergence in the functioning of the select private banks in India by developing a BSC framework. They found significant variation in their performance under all perspectives of the BSC system except capital adequacy ratio and number of ATMs of the financial and learning & growth perspectives. A Survey research method has followed for managing the performance of select banks in Ghana by applying the BSC as a tool of performance measurement and found that the financial perspective adopted maximum for performance measurement of banks followed by the other three perspectives of the BSC framework (Agyeman *et al.*, 2017).

An empirical investigation of the causal relationships among the four perspectives of BSC has employed by identifying thirteen measures under the four perspectives by applying the Structural equation model for testing the hypothesis of the study that figured out a positive relationship between learning & growth and the internal business process, which ultimately affected the customer perspective. Finally, the customer perspective significantly influenced the financial perspectives (Zahoor and Sahaf, 2018). Osunsanwo and Dada (2019) assessed the operations of 37 quantity surveying firms (QSFs) by using the BSC model in Lagos State, Nigeria, and revealed that the performance of the firms is not satisfactory on financial measures, whereas the firms are performing very impressive in the non-financial parameters. All the perspectives except the customer perspective of BSC have a significant effect on the financial operation of the banks and recommend adopting the BSC model as an integrated system to evaluate the bank's performance in Palestine (Turshan and Karim, 2019). Benková *et al.* (2020) identified the factors affecting the adoption of the BSC method to measure the performance in the engineering sector in Slovakia and

vindicated the worth of the non-financial indicators under the BSC framework. Researchers verified the dependence between the human and financial capital of the company by using the Chi-square test. The study found a substantial association between the companies regarding the non-financial parameters and the application of the BSC method by using standard deviation and Chi-square test.

Raut and Sahasrabuddhe (2021) identified in their study that ROA was correlated with net interest margin and number of branches while ROE did not correlate with a single variable amongst 12 variables selected by the researchers for their study. They also observed that the operation of public and private banks has significant differences in the BSC framework. Algerian banks should adopt modern methods of performance measures such as the Balanced Scorecard that is propitious to present developments in the banking industry and provide regular financial and non-financial information. Banks need to magnify their overall performances by considering each perspective of the BSC framework to obtain financial stability in a dynamic environment (Bourdima, 2021). Rezaee *et al.* (2022) measured the mediating role of managerial tools, namely innovation and knowledge management association of four perspectives of BSC on banks' effectiveness in using the outcomes of structural equation layout. Ngure (2022) measured and monitored a road map of a non-profit organization by taking four parameters of the BSC model and ended with a conclusion that a balanced scorecard is a useful tool for assessing and monitoring the action plan of an organization.

3. Research Gap, Objectives and Hypotheses

3.1. Research Gap

It has appeared over the years, that the performance measurement of banks generally focused on financial parameters which do not reflect the actual position of the firm. From the above literature survey, it observed that the banks in foreign countries had taken financial along withthe non-financial indicators of the BSC model to appraise their banks' performance, and in India, only a few studies made on the BSC model with the inter-sector comparison of banking performance. It revealed in some studies that authors have taken only one or two perspectives of BSC, and either public or private banks have taken individually for performance evaluation using the BSC model.

Sometimes banks have impressive performance based on financial parameters but have not performed well towards other non-financial parameters like the customers, employees, internal business processes, learning and growth processes, etc. Hence, researchers are trying to use financial along-with the nonfinancial perspectives to evaluate commercial banks in India. The Balanced Scorecard of each sample bank has been drawn by taking measures from both financial and non-financial indicators. Analysis has been done to figure out the variation in the performance of select banks by using the BSC model.

3.2. Objectives of the Study

The present study tries to focus on the issue of the performance measurement of the banking sector in terms of financial as-well-as non-financial parameters. The objective of the present research has been determined from the above-discussed research gap and problems.

- To develop the Balanced Scorecard for each select bank.

- To measure and compare the banks' performance in consideration of each financial and non-financial perspective of the developed Balanced Scorecard model.
- To make an inter-sector comparison of the overall performance score of the Balanced Scorecard Model of select banks.

3.3. Hypotheses Development

Few studies have been done by different authors and researchers, namely Gupta *et al.* (2020) observed there is an impactful variation in the operation of public and private banks based on the consumer perspectives of the BSC model. The performance of SBI and HDFC banks is divergent from the financial parameters of the BSC model (Gupta *et al.*, 2019). Raut and Sahasrabuddhe (2021) observed that the operation of public and private banks has significantly different from each other on the BSC framework, and private-owned banks performed better than public banks. Researchers are unsure about the findings of the past studies every time. For that reason, the following hypotheses have been formulated to fulfill the above objectives:

H_{01}: The performance of select Indian public banks is not significantly divergent from that of private banks' given each financial as well as the non-financial perspective of the BSC model.

H_{02}: The performance of select Indian public banks is not significantly divergent from that of private banks as measured by using the overall performance score based on the BSC model.

4. Research Methodology

4.1. Sources of Data

Researchers used secondary data for this study which was mainly collected from Annual Reports, Business Responsibility Reports of sample banks, RBI reports, articles from different journals, and different organizational reports.This study covers seven consecutive financial years, i.e., 2014-15 to 2020-21.

4.2. Data Sampling

The Indian banking sector is the population of this study. It has evinced from the literature that authors have taken either public or private banks individually for performance evaluation using the BSC model, and very few studies made on the sample banks taken in this present study (Gupta *et al.*, 2018, 2019; Panicker and Seshadri, 2013; Singh, 2018; Annapurna and Manchala, 2017). Hence, out of a total of 12 public sector banks (PSBs), two banks, i.e., Bank of Baroda (BOB), Union Bank of India (UBI), and out of 21 private sector banks (PVBs), two banks, i.e., HDFC Bank, Kotak Mahindra Bank (KMB) have been taken as sample bankson account of market capitalization for this study. Hence, the sample size is four, and these banks took as a sample unit using convenient sampling.

4.3. Data Analysis Process, Tools &Techniques

The study aims to measure the selected banks' performance and make a contrastive study between Public and Private Sector Banks based on constructed BSC of sample banks. Applying the concept of a Strategic map developed by Kaplan and Norton (1996), strategic objectives for each perspective of BSC have been identified for sample banks. Five performance indicators have been taken for the

performance measurement of banks under each perspective. In the constructed BSC, the Maximum score assigned for each perspective was 250 (i.e., 50 Scores*5 Measures). The total maximum score in the developed BSC for performance scale is 1000 (i.e., 250 Scores*4 Perspectives).

This research study analysis has used the following statistical tool analysis:

I. Shapiro-Wilk Test is used to test the normality distribution.
II. To test the hypotheses, an independent sample t-test has exerted in this study.

4.4. Research Variables

Following research, variables have been taken for this present study.

Table 1: Research Variables

Perspectives of A Balanced Scorecard	*Strategic Objective Measures (Variables of the Study)*
Financial	Capital Adequacy Ratio (CAR), Net NPA to Net Advances Ratio (NNPANA), Return on Average Assets (ROAA), Net Interest Margin (NIM), Credit-Deposit Ratio (C/D Ratio)
Customer	Deposit Growth (%), Credit Growth (%), CASA Deposit Growth (%), CASA Ratio (%), Complaints Redressed Ratio (%)
Internal Business Process	Growth in Total Business (%), Cost to Income Ratio (%), Business Per Employee (BPE), Profit Per Employee (PPE), Cost of Deposit (%)
Learning & Growth	Growth in No. of Employees (%), Change in Expenditure On Employees (%), Employees Trained (%), Growth in No. of Branches (%), Growth in No. of ATMs (%)

Source: Authors' Collection from Literature

5. Balanced Scorecard Development and Data Analysis

This part has two sections which include the development of the Balanced Scorecard of each sample bank based on secondary data and statistical analysis of t-test results for testing the hypotheses of this study based on the balanced scorecard performance score.

5.1. Section I: Development of Balanced Scorecard of Sample Banks

The following stages were adopted for developing the Balanced Scorecard of the sample banks.

i) Twenty key performance indicators have been picked out from the data accessible during 2014-21 about the operations of sample banks and clustering these into four perspectives of BSC. BSC's strategic objectives, measures, and scores on a scale for the four perspectives show in Table 2.
ii) A performance scale was marked for every single measure of four perspectives, and 50 score points were distributed into the units of each scale. The maximum score assigned for each perspective was 250 (i.e., 50 Scores*5 Measures)(Al-Najjar and Kalaf, 2012). The total maximum score in the developed BSC for the performance scale is 1000 (20 measures*50 points).

Table 2: Balanced Scorecard Perspectives, Objectives, Quantitative Measures, Scores

Perspectives of The BSC Model	*Strategic Objectives*	*Measures*	*Scores on Scale*				
			10	*20*	*30*	*40*	*50*
					SCALE		
Financial	Capital Adequacy	CAR %	0-4	4-8	8-12	12-16	16-20
	Improving Asset Quality	NNPANA (%)	8-10	6-8	4-6	2-4	0-2
	Management Efficiency	ROAA (%)	0-0.45	0.45-0.90	0.90-1.35	1.35-1.80	1.80-2.25
	Improving Earning Quality	NIM (%)	0-1	1-2	2-3	3-4	4-5
	Maintaining Liquidity	Credit-Deposit Ratio (%)	94-100	88-94	82-88	76-82	70-76
Customer	Business Growth	Deposit Growth (%)	0-10	10-20	20-30	30-40	40-100
		Credit Growth (%)	0-10	10-20	20-30	30-40	40-100
		CASA Deposit Growth (%)	0-10	10-20	20-30	30-40	40-100
	Customer Growth	CASA Ratio (%)	0-12	12-24	24-36	36-48	48-60
	Providing After Sales Services	Complaints Redressed Ratio (%)	90-92	92-94	94-96	96-98	98-100
Internal Business Process	Improve Operational Capabilities	Growth in Total Business (%)	0-10	10-20	20-30	30-40	40-100
		Cost to Income Ratio (%)	55-60	50-55	45-50	40-45	35-40
	Improve Managerial & Operational Efficiency	BPE(Cr.)	0-5	5-10	10-15	15-20	20-25
		PPE(Lakhs)	0-5	5-10	10-15	15-20	20-25
		Cost of Deposit (%)	8-9	7-8	6-7	5-6	4-5
Learning & Growth	Improve Employees' Training & Development	Growth in No. of Employees (%)	0-10	10-20	20-30	30-40	40-100
		Change in Expenditure on Employees (%)	0-10	10-20	20-30	30-40	40-100
		% of Employees Trained	0-20	20-40	40-60	60-80	80-100
	Growth in Digitalization of Products and Services	Growth in No. of Branches (%)	0-10	10-20	20-30	30-40	40-110
		Growth in No. of ATMs (%)	0-12	12-24	24-36	36-48	48-60

Source: Authors' Own Compilation

The performance score of selected banks on each measure of four perspectives of BSC has been quantified for every single year individually. Scores of every year have been enumerated for each respective measure.

Table 2 represents the BSC's strategic objectives, measures, scale, and score breakdown for each measure under BSC's four perspectives.

5.1.1. Performance Measurement of Banks on the BSC Model

Performance Scores of each year for 20 measures of financial and the non-financial parameters of the BSC model and scores for each perspective for all seven years have been figured up and intended for statistical analysis. The mean score of every individual bank for the last seven years of the BSC approach has been put to use for statistical analysis to make an inter-sector comparison.

5.1.2. Performance Measurement of PSBs

Table 3: Performance Score of BOB and UBI on the BSC Model

Perspectives of The BSC Model	*Financial*		*Customer*		*Internal Business*		*Learning & Growth*		*Total Scores/ Year*	
	BOB	*UBI*	*BOB*	*UBI*	*BOB*	*UBI*	*BOB*	*UBI*	*BOB*	*UBI*
2014-15	170	150	120	120	150	100	90	100	530	470
2015-16	140	130	80	120	100	100	100	50	420	400
2016-17	160	130	120	130	140	120	50	70	470	450
2017-18	140	110	110	110	130	120	60	70	440	410
2018-19	160	120	110	110	140	120	60	40	470	390
2019-20	160	140	230	110	180	130	230	70	800	450
2020-21	150	160	130	230	180	190	70	200	530	780
Total Scores of 7 Years	1080	780	770	700	840	690	590	400	3660	3350

Source: Authors' Own Compilation

Table 3 highlights the performance score of both Public Sector Banks, i.e., BOB and UBI. The overall performance score of BOB was not stable in the first four years of the study period, but it increased during the years 2018-19 and 2019-20. Again the performance score of the bank was decreased in the last financial year 2020-21. The performance score of the Union Bank of India increased during the last two years of the study. The performance score in the learning and growth perspective of BOB and UBI was 590, and 400 respectively was low in almost all years. The low growth rate in the number of employees, low rate of growth in-branch and ATM expansion, and less cost incurred for employees' training and development might have resulted in low performance in the learning and growth perspective.

5.1.3. Performance Measurement of Private Sector Banks

Table 4: HDFC Bank's &KMB'sPerformance Scores on the BSC Model

Perspectives of The BSC Model	*Financial*		*Customer*		*Internal Business*		*Learning & Growth*		*Total Scores/ Year*	
	HDFC	KMB	HDFC	KMB	HDFC	KMB	HDFC	KMB	HDFC	KMB
2014-15	240	220	180	200	170	120	100	170	690	710
2015-16	220	210	170	220	180	130	80	210	650	770
2016-17	220	220	180	160	180	130	40	80	620	590
2017-18	220	210	160	210	210	150	40	70	630	640
2018-19	220	210	160	180	220	140	110	90	710	620
2019-20	230	230	170	160	220	140	130	90	750	620
2020-21	200	210	100	130	80	150	10	60	390	550
Total Scores of 7 Years	1350	1300	1020	1130	1180	810	500	710	4440	4500

Source: Authors' Own Compilation

Table 4 highlights the overall performance score of two private sector banks, i.e., HDFC and KMB. The performance score of HDFC Bank gradually decreased in the first three years, but the performance score increased during the next three years of the study, and again it was decreased in the last financial year 2020-21, whereas the overall performance score of KMB is not significant throughout the study. The performance score in the learning and growth perspective of HDFC and Kotak Mahindra Bank was 500 and 710 respectively which was low in almost all years. The low growth rate in the number of employees, low rate of growth in-branch and ATM expansion, and less cost incurred for employees' training and development might have resulted in low performance in the learning and growth perspective.

5.2. Section II: Statistical Analysis for Inter-sector Comparison of Commercial Banks

For this study, four Balanced Scorecards have been prepared for each select bank. The performance score of each perspective has been calculated based on selected banks' financial and non-financial performance indicators and produced in Tables 3 & 4.

A statistical test, namely the independent sample t-test (two-tailed), was adapted to figure out the variation in the performance of PSBs and PVBs. But, to confirm the independent sample t-test, the normality distribution of data is to be tested. If the data is normally distributed, a t-test can be used as a parametric test. The Shapiro-Wilk (S-W) test is the most accepted tool used for normality check of data as the sample size is < 50. As the sample size of this study is less than 50, the Shapiro-Wilk test was exercised for normality check of data.

Table 5: Results of the Shapiro-Wilk Test

Tests of Normality			
	Statistic	*df*	*Sig.*
BSC Performance Score	.863	4	.271
a. Lilliefors Significance Correction			

Source: Authors' Own Compilation

The outcome of the (S-W) test in Table 5shows a P-value (0.271)> 0.05, which represents the normal distribution of all data. As the data is normally distributed, it is confirmed to apply an independent t-test for further analysis.

The following hypotheses have been drafted to measure and compare the banks' performance consideration of each financial and the non-financial perspective of the Balanced Scorecard Model.

H_{01}: The performances of select PSBs are not significantly divergent from that of PVBs given each financial and non-financial perspective of the BSC model.

Four sub-hypotheses have been formulated to test the primary hypothesis:

H_{01A}: There is no significant variation between the performances of select PSBs and PVBs in view of the financial perspectives of the BSC model.

H_{01B}: There is no significant variation between the performances of select PSBs and PVBs in view of customer perspectives of the BSC model.

Table 6: Result of Independent Sample t-Test of PSBs and PVBs on Each Perspective of the BSC Model

Hypotheses	*Name of the Perspectives*		*Values*	*H_0 Accepted or Rejected*
H_{01A}	Financial Perspectives	t- Statistics	-2.598	Accepted
		Degree of freedom	1.056	
		Sig. (2-tailed)	0.223	
H_{01B}	Customer Perspectives	t- Statistics	-5.215	Rejected
		Degree of freedom	1.696	
		Sig. (2-tailed)	0.049	
H_{01C}	Internal Business Process Perspectives	t- Statistics	-1.152	Accepted
		Degree of freedom	1.320	
		Sig. (2-tailed)	0.416	
H_{01D}	Learning & Growth Perspectives	t- Statistics	-0.777	Accepted
		Degree of freedom	1.980	
		Sig. (2-tailed)	0.519	

Source: Authors' Own Compilation

H_{01C}: There is no significant variation between the performances of select PSBs and PVBs in view of the internal business process perspectives of the BSC model.

H_{01D}: There is no significant variation between the performances of select PSBs and PVBsin view of the learning and growth perspectives of the BSC model.

According to the Shapiro-Wilk test (Table 5), data is normally distributed, and the sample size is less than 30, considering that the Independent sample t-test was adapted to figure out the variation in the performance of PSBs and PVBs based on the individual perspective of BSC model and to compare the overall performance score of PSBs and PVBs.

Table 6 shows the outcome of the independent sample t-test that represents the P-value of each sub-hypothesis.

H_{01A}: The H_{01A} is accepted as the P-value (0.223)> 0.05. Hence, the operation of select public and private banks is not significantly different based on the financial perspectives of the BSC model.

H_{01B}: The H_{01B} is rejected as the P-value (0.049)< 0.05. Hence, the operation of select PSBs and PVBs is significantly different from the customer perspectives of the BSC model.

H_{01C}: The H_{01C} is accepted as the P-value (0.416)> 0.05. Thus, the operation of select public and private banks is not significantly different based on internal business process perspectives of the BSC model.

H_{01D}: The H_{01D} is accepted as the P-value (0.519)> 0.05. Thus, the operation of select public and private sector banks is not significantly different based on the learning and growth perspectives of the BSC model.

The results of the t-test depict that the P-value > 0.05 for all perspectives except the customer perspective, which represents that the performance of PSBs and PVBs is significantly different only in view of the customer perspective of the BSC model.

The following hypothesis has been formulated to make an inter-sector comparison of the overall performance score of the Balanced Scorecard Model of selected banks:

H_{02}: The performances of select PSBs are not significantly divergent from that of PVBs as measured by using the overall performance score based on the BSC model.

In Table 7, an Independent t-test has been exerted to make an inter-sector comparison of the overall BSC performance score.

Table 7: Result of Statistical t-test

Name of the Perspectives		*Values*	*H_0 Accepted or Rejected*
BSC Performance Score	t- Statistics	-6.112	Accept
	Degree of freedom	1.075	
	Sig. (2-tailed)	0.092	

Source: Authors' Own Compilation

It was clear from Table 7that the P-value (0.092)> 0.05, thus the H_{02} is accepted, and the result of the t-test suggests there are no significant variations between these two samples. It indicates no significant variation between the performances of public banks and private banks as measured by applying the BSC framework.

6. Results and Discussion

The overall performance score of private banks is graded well as compared to public banks. It concluded that the Bank of Baroda has fair performance among both public sector banks as shown in Table 3. Kotak Mahindra Bank has impressive performance not only among PVBs but also among all commercial banks. It was observed from the developed balanced scorecard of both sector banks that the performance score of the learning & growth perspective was not impressive, which indicates the overall poor performance of banks in the learning and growth perspective. The result of statistical analysis in Table 6 exhibited that theperformance of selected public banks is significantly different from that of private banks only from a consumer perspective of the BSC framework. The performances of both the banking sector have equal in terms of finance, internal business process, and learning and growth. But, at the same time, the overall operation of PSBs and PVBs is not significantly different as P-value is more than 0.05, which represents acceptance of the null hypothesis (Table 7).

7. Conclusion

The banking sector always plays a vital role in the development of the Indian economy. Thus, it is essential to measure the performance of the banking sector regularly. This research intends to assess the operation of commercial banks by developing a Balanced Scorecard for each sample bank. It is evident from the study that the operation of Publicly-owned banks and non-public banks is significantly different from the consumer perspective among all perspectives of the Balanced Scorecard approach while analyzing each perspective individually over the period, whereas the overall performance of public and private banks is not significantly divergent. The performance score of selected commercial banks is good on financial parameters compared to non-financial parameters of the Balanced Scorecard. Each selected bank performed very poorly in learning and growth perspectives. The banks' operation on customer and internal business process is entirely satisfied after the financial performance.

It suggested that all banks should focus on improvements in the performance of non-financial parameters as it directly enhances the financial performance of the banks. Banks should strengthen their geographical growth and employees' efficiency by providing regular training and conducting skill development programs for employees to improve the performance of the learning and growth perspective of BSC. Banks should be focused on the innovation of banking products and services, modernization of branches, and acquiring of skilled employees, etc., which will hold new and existing customers and grow in the banking industry. The learning and growth improve internal business processes and customer performance, which ultimately enhances financial performance.

This study has some limitations. The strategic measures selected for the BSC analysis were taken only from secondary sources. The study took only four banks from all commercial banks in India. These limitations can be considered as recommendations for further research.

This research work will help the respective authorities of the concerned sector and policymakers in the financial sectors adopt the BSC as a holistic performance measurement tool. It also gives some information and scope for future research works on applying the BSC approach to other financial and other different sectors.

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