Evaluating Balanced Scorecard Adoption in Nigerian Telecommunications: Insights and Implications

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Abstract

The study evaluates the application of balanced scorecard (BSC) in performance measurement in the Nigerian telecommunication companies. The study adopted a quantitative research method. The target population of the study comprised all the Nigerian telecommunication companies in operation for at least 10 years. A census strategy was adopted for the selection. The study used both primary and secondary data collected through questionnaire administration and financial reports and accounts of the companies for six years (2018-2023). To describe the primary data, simple percentages were used, and to test the hypotheses formulated, a one-way Analysis of Variance (ANOVA) was conducted utilising Statistical Packages for Social Sciences (SPSS). Regression analysis using STATA was used for the analysis of the secondary data. The findings revealed that the application of BSC has a positive and significant effect on Return on Assets (ROA) as a profitability measure, it has a positive and significant effect on liquidity measure, it also has a positive and significant effect on customer satisfaction measure, and it has a positive and significant effect on employee motivation measure in the Nigerian telecommunication companies; and also, BSC has been strongly applied in some companies, and semi strongly applied in others. Therefore, the telecommunication companies experienced significant growth and development by both strongly and semi-strongly applying BSC. It is therefore recommended in the light of our findings that the telecommunication companies in Nigeria should continue to strongly apply BSC on the above measures and other various measures under the BSC in performance measurement.

Keywords: Balanced Scorecard, Telecommunication Companies, Performance Measurement

1.0 Introduction

Business organizations need to achieve profitability as a requirement for their survival and growth. The managers are those tasked with such responsibilities and they need strategic plans to achieve their objectives. This strategic plan requires performance measurement tools or techniques that are appropriate, which will enable the organization to obtain its established goals. Performance measurement

offers managers insights into various aspects of operational resources, processes, and outcomes. It serves as the intersection of strategy, decision-making, and organizational learning. A comprehensive understanding of a company's competitive strategy, operational objectives, and a precise expression of the competencies and behaviours expected from employees to meet the organization's goals as well as to establish a well-organised internal business process, is what is needed to rely upon in creating a performance measurement system that is world-class. Some of the performance evaluation methods are Management by Objectives (MBO), Economic Value Added (EVA), Key Performance Indicator Assessment (KPI), and Balanced Scorecard (Shim, 2018; Ugural & Burgan, 2021). In the past, organizations exclusively relied on financial indicators to measure performance, of which the scanty nature of the financial measures was grossly inadequate; that led to the creation of the BSC, which was influenced by the integration of both financial and non-financial performance metrics. The BSC is a management system that maps an organization's strategic objectives into performance with four perspectives, namely financial, internal business, customers, and learning and growth which then provide relevant feedback as to how well the strategic plan is executed and adjustments made if necessary. The BSC was developed by Kaplan and Norton in 1992 as a performance measurement framework that adds strategic non-financial performance measures to the traditional financial metrics to give managers and executives a clearer and more holistic view of organizational performance. The scorecard was devised as a result of the need to incorporate non-financial variables into the measures of performance of an organization, it provides a framework that facilitates performance measurement and helps planners identify what should be done, measured, and executed. By utilising the BSC, managers can monitor and adjust their goals and strategies effectively (Camilleri, 2021). The Nigerian telecommunication companies are contributing to the economic growth and development. And just like any other company, it is essential for them to periodically assess and track their performance, particularly due to the limited nature of their resources, which necessitates making informed economic decisions regarding the optimal utilisation of these resources.

Statement of the Problem

The BSC has become notable in America and Europe, However, it is still at a fundamental stage of development in developing countries of Africa. There is less research on the application of the BSC as a performance measure in Nigerian companies. The adoption of BSC in developing countries like Nigeria is limited

due to the structural, economic, or cultural factors that influence it. Structural issues include inadequate infrastructure such as poor technological infrastructure; limited access to dependable data systems and analytical tools, and insufficient electricity and internet connectivity which complicate real-time monitoring and reporting; lack of skilled professionals trained in strategic management tools like the BSC to analyse and utilize the metrics effectively; and a general low awareness and comprehension of the BSC, among other factors. The economic factors include tax policies; obstacles in obtaining loans or investment funding due to high interest rates and stringent lending requirements, which restrict organizations' ability to develop performance management systems like the BSC. The cultural factors encompass corruption and a lack of transparency in certain industries, which may obstruct the implementation of the BSC; resistance to change due to a preference for traditional methods of performance evaluation; and government regulations and policies. One of the recent related studies conducted on the application of BSC in Nigerian companies was conducted by Ismail (2021). However, there is a limited number of studies recorded regarding BSC adoption in Nigerian firms and in Africa as a whole compared to Europe, Asia, and America; that also served as a reference point to look into. This limited number of research in this area, despite the achievements observed by organisations that have applied the BSC, consequently, on this note, this study is carried out to address the gap.

The study seeks to provide answers to the questions as: What is the effect of applying BSC on Return on asset (ROA) as a profitability measure by telecommunication companies in Nigeria? Also what is the effect of applying BSC on liquidity, customer satisfaction or employee motivation measures by telecommunication companies in Nigeria?

Therefore the study objective to evaluate the application of BSC in the performance of the Nigerian telecommunication companies. In line with the research objective and questions raised, the study proposed the following hypotheses:

H_{O1}: BSC application has no significant effect on Return on Assets as a profitability measure in Nigerian telecommunication companies.

H_{O2}: BSC application has no significant effect on liquidity in Nigerian telecommunication companies.

H_{O3}: BSC application has no significant effect on customer satisfaction in Nigerian telecommunication companies.

$H_{O4:}$ BSC application has no significant effect on employee motivation in Nigerian telecommunication companies.

The results obtained can be used by the Nigerian telecommunication companies to discover various non-financial measures that are key to their growth and development. The study can help companies become more aware of the benefits derived from the application of the BSC as a performance measure. Also, companies that are yet to adopt the BSC as a measure of performance, whether in different sectors, can use the information and make a decision. This study has also added to the existing body of knowledge in the field of accounting and is a source of literature on BSC application as a performance measure to researchers in the accounting profession and other related disciplines.

2.0 Literature Review

2.1 The Concept of BSC

The BSC concept, introduced by Kaplan and Norton (1992), suggests that management should look beyond the financial aspect, to also consider customers, internal processes, innovation and learning aspects of the business. The idea is designed to provide managers with a holistic understanding of the company, enabling them to concentrate on vital aspects of the organization and advancing the strategy. It also aids in conveying and executing the strategy of an organization. The limitations of traditional performance measures, which primarily emphasized financial viewpoints, were the catalyst for Kaplan and Norton's development of the BSC concept. Gonzalez-Sanchez et al. (2017) contend that the technological revolution renders traditional measurement systems appropriate only for industrial-era contexts. Consequently, the qualitative and descriptive data encompassed by the BSC will provide a more comprehensive framework for the evaluation of BSC application as a performance measure which is in line with this study. The BSC perspectives, which are four, are in the order below:

1. The Financial Perspective and the Profitability measure of BSC

The financial perspectives focus on a company's ability to achieve profitability and maintain financial stability, as well as ensure cost-effectiveness and efficiency (Nassar et al., 2015). This perspective examines how the firm should be perceived by its shareholders to achieve success, while also assessing how the firm's strategies impact its financial structure. Niven (2002) and Chimtengo et al. (2017) both emphasize that this perspective is crucial because it funds the other

three perspectives. Access to traditional financial data, along with accurate and timely information, is essential for guiding the organization toward efficient and smooth operations. To stay competitive, top management requires clear indicators to evaluate and forecast the company's performance over longer time frames beyond just financial metrics. Kaplan and Norton (1992) proposed three fundamental financial themes that can help steer business strategies: Revenue, Cost Reduction, Growth, and Asset Utilisation.

2. The Customer Satisfaction Measure

According to Kaygusuz (2005), the success and profitability of businesses largely rely on their capacity to meet customer needs, prompting many organizations to prioritize customer focus. The customer satisfaction framework gauges an organization's ability to deliver high-quality products and services, the efficiency of its delivery systems, and the overall level of customer service and satisfaction (Kairu et al., 2013). The BSC requires managers to translate their broad mission statements regarding customer service into specific metrics that genuinely reflect what is important to customers (Kaplan & Norton, 1992). Atarere & Oroka (2012) outline the primary objectives of customer satisfaction to include increasing market share, enhancing customer retention, boosting customer acquisition, and improving customer satisfaction.

3. The Internal Business Process Perspective and Liquidity

This perspective emphasizes the need for well-defined internal business processes to ensure the highest standards of product and service quality. The firms' products and services must meet the market requirement, both in quantity and quality. Key performance indicators for this area include process improvements and effective supply chain management (Dan, 2017). The internal processes perspective evaluates the efficiency of various procedures within the organization. While customer-based measures are important, they must be converted into actionable measures that the organization needs to implement to meet customer expectations (Kaplan & Norton, 1992). Kaplan and Norton (1992) identified three key process value chains applicable to this perspective: the Innovation Process, Post-Sales, Operations Process, and Service Process.

4. The Learning and Growth Perspective and Employee Motivation Measure

The learning and growth perspective emphasizes the importance of human, information, and organizational capital. Objectives related to learning and growth

outline how the combination of people, technology, and the organizational environment aligns with the strategy of the organization. This perspective examines how employees develop and progress in their careers, ultimately enhancing the organization's performance. According to Kaplan and Norton (1992), selecting appropriate measures for learning and growth can be challenging; they proposed several examples such as employee empowerment, capabilities, motivation, and the effectiveness of information systems (Al-Najjar & Kalaf, 2012). They therefore identified three key factors necessary for realising this perspective, which are: increasing employee capabilities, increase motivation, empowerment and alignment, and information technology.

BSC and Performance Measurement Relationship

At the core of any revolution is a critical realization: it's essential to shift the basis of performance evaluation from a focus solely on financial metrics to a broader, more diverse and specialized set of measures (Pourmoradi et al., 2016). Implementing a contemporary performance measurement system like the BSC, which encompasses both financial and non-financial indicators, can enhance organizational performance (Stede et al., 2006). For companies to measure performance effectively, they need a well-rounded system that incorporates the most pertinent performance indicators (Oukhay & Romdhane, 2022). The BSC plays a vital role in boosting a company's performance, and its application is positively and significantly linked to improved organizational outcomes (Zahirul & Wendy, 2000).

2.2 Review of Relevant Empirical Studies on BSC

Over the last 32 years, since BSC was developed by Kaplan and Norton in 1992, there has been an increase in BSC adoption in performance measurement. This has also drawn the growing attention of researchers. Here are relevant reviewed prior studies on BSC as a performance measure framework (see, for example, Bernard et al., 2023; Song, 2022; Pollanen & Xi, 2018; Malgwi & Dahiru, 2014; Alao, 2013; Laury et al., 2020; Ghassan, 2011; Patricia et al., 2017; Tahniyath & Said, 2020). The reviewed relevant literature have methodological differences which are different from this study. This study separately identifies the methodological and geographical gaps in the extant literature and therefore, aims to address these deficiencies by evaluating the application of BSC as a performance measure in Nigerian telecommunication companies.

2.3 Theoretical Framework

Various theories have been used to explain the need for the evaluation of BSC application as a performance measurement framework. A few of them are agency theory, stakeholder theory, and stewardship theory. This study adopts the stewardship theory. The Stewardship Theory is presented as a counterbalance to rational action theories in management (Donaldson & Davis, 1991, 1993). This theory suggests that managers and owners do not have conflicting interests and that governance aims to determine the mechanisms and structures that enhance effective coordination between both parties (Donaldson, 1990). This theory is adopted because of its relevance to the study, since performance management and measurement in an organization are bestowed on the directors and managers who are acting in a stewardship capacity in the organizations.

3.0 Methodology

In this study, a quantitative research method was utilized, incorporating both primary and secondary data sources. Primary data was gathered through the administration of questionnaires, while secondary data was sourced from the financial reports and accounts of the Nigerian telecommunication companies for six years (2018-2023). The study covers ten (10) telecommunication companies in Nigeria that are in operation for at least 10 years to the year 2024. They are MTN Nigeria, Airtel Nigeria, Smile Nigeria, Globacom, 9mobile, Swift network Limited, Nigeria telecommunications Limited (N-Tel), MainOne, Visafone and Spectranet.

The questionnaire was designed using a five-point Likert scale and adapted from previous research by Alao (2013) and Ghassan (2011) but was broadened to align with the study's objectives. A total of 80 respondents were purposively selected, consisting of 8 individuals from each of the 10 companies involved. The respondents included managers and directors responsible for performance measurement within their respective departments. These are: 1 from Manager/Director of Finance/Account (FA), 2 from Marketing/Sales (MS), 1 from Planning (PL), 2 from Human Resource/Personnel (HRP), and 2 from others (O). Others here represent any department and/or unit from either purchasing, supply, logistics, or security, among others. This selection aimed to ensure equal representation across companies and minimize bias.

The study applied panel regression analysis on the secondary data collected on the two dependent variables (ROA and Liquidity) using a selected random effects model confirmed by the hausman test. In addition, the study applied a correlation test to check the relationship among the dependent and independent variables in the models. The study also conducted multicollinearity and heteroskedasticity tests to ensure the reliability of the chosen models. The rationale for using panel regression is to control unobserved heterogeneity (disparity) by using fixed effects (FE) or random effects (RE) models to account for unobserved variables that could bias the results. The selection between these methods (RE and FE) depends on the objective of the analysis, and the problems concerning the exogeneity of the explanatory variables. A hausman test was conducted for the validation in choosing between the RE and FE, where the random effects (FE) model was then selected. The FE method was not considered because the hausman test results reveal that the P-value is high in all, which is greater than 5% (i.e., > 0.05). Therefore, fail to reject the null hypothesis. Cronbach's alpha test was performed utilizing the Statistical Package for the Social Sciences (SPSS) and the significant value of the reliability statistics was given. Prior to Cronbach's alpha test, a face validity was run by giving the questionnaire to experts in the field. A pilot test was then conducted on a subset of the intended population, with ten people, prior to conducting the actual interview, which was to test and refine the procedures and the questions were revised based on the responses after data cleaning.

The study employed one–way Analysis of Variance (ANOVA) at the level of significance of 0.05, and a simple percentage. The simple percentages were used to describe and analyze the primary data, while the ANOVA was used to test the hypotheses formulated to explain the evaluated effect of the independent variable on the dependent variables. Thereafter, a grading system was utilised to evaluate the application level. The justification for choosing both the primary and secondary sources is that the primary source, is to obtain firsthand information directly about the selected companies from the target respondents which is relevant to the study's topic as used in Ghassan (2011). Also, the nature of the variable warrants using a mixed method. The mixed-method approach (primary and secondary data) enriches the analysis by allowing flexibility in methodology, gives a logical foundation, and a deeper understanding of small cases (Maxwell, 2016). It also allows researchers to thoroughly answer research questions and generalize their findings and implications to the broader population (Enosh et al., 2014). A census strategy was adopted for the selection of the sample size.

3.1: Distribution of Questionnaire

60 out of the 80 questionnaires issued were retrieved, while 20 were not retrieved. The response rate shows 75% and 25% respectively and this is considered satisfactory for the study (Bailey, 1987).

Table 1. Respondents Classification Based on Departments

Companies/department	FA	MS	PL	HR/P	Others	**Total**	**%**
MTN Nigeria	2	1	1	1	3	8	13.3
Airtel Nigeria	1	2	1	1	2	7	11.7
Smile Nigeria	1	1	1	1	1	5	8.3
Globacom	1	1	1	1	2	6	10
9mobile	1	1	1	2	2	7	11.7
Swift network	1	2	1	1	0	5	8.3
N-Tel	0	1	1	1	1	4	6.6
MainOne	1	1	1	2	1	6	10
Visafone	1	1	1	1	2	6	10
Spectranet	1	1	1	1	2	6	10
Total	10	12	10	12	16	60	100
%	**16.6**	**20**	**16.6**	**20**	**26.6**	**60**	**100**

Source: *Field Survey, 2024*

Measurement of Variables

The study used two sets of variables. They are the dependent and independent variables. BSC as an independent variable is measured by both financial and non-financial metrics in performance measurement. BSC's financial measures constitute the profit margin, cost reduction, and revenue growth. BSC non-financial comprises customer (market share, customer satisfaction, customer retention); internal processes (process improvement rates, efficiency ratios, defect rates); learning and growth (employee motivation/satisfaction, employee training hours, innovation rates). The dependent variables are Return on asset (ROA), Liquidity, Customer satisfaction measure, and Employee motivation measure.

To examine the level of application of BSC on each telecommunication company on its ROA and liquidity, we calculate: Return on asset (ROA) as:

$$\frac{\text{Net profit after tax}}{\text{Total Assets}}$$

ROA is defined as the net income before interest and tax divided by the total assets.

Liquidity (Current ratio) as: $\frac{\text{Current Assets}}{\text{Current Liabilities}}$

This research utilized the general structure of panel data models as outlined below:

$Y=\beta_0+\beta_1 x_{it}+\beta_2 x_{it}+\ldots+\beta k_{xk}+\varepsilon$ ……

The importance of the regression model was assessed using a 95% confidence interval and a 5% significance level. This approach helps to ensure that the results are reliable and minimize the chances of making incorrect conclusions about the data.

Model 1

To examine the level of application of BSC on ROA, we specify the following empirical model:

ROA = f(BSCfin, BSCnon-fin+ u_t) …….....(1)

ROA = λ_0 +λ_1BSCfin + λ_2BSCnonfin + u_t.....(2)

Where: ROA = Return on Assets

BSCfin = BSC financial (Profit margin, cost reduction, revenue growth)

BSCnon-fin = BSC non-financial (customer: market share, customer satisfaction, customer retention, customer acquisition; internal processes: process improvement rates, efficiency ratios, defect rates; learning and growth: employee motivation/satisfaction, employee training hours, innovation rates)

λ_0 = Intercept of the dependent variable

λ_1 = Coefficient on the first independent variable

λ_2 =Coefficient on the second independent variable

u_t = error term

Model 2

To examine the level of application of BSC on liquidity measure, we specify the following empirical model:

Liquidity = f(BSCfin, BSCnon-fin + u_t)..... (3)

Liquidity = $\beta_0 + \beta_1$ BSCfin $+ \beta_2$BSCnonfin $+ u_t$ ……..... (4)

Where:

Liquidity = Liquidity of the telecommunication companies

BSCfin = BSC financial

BSCnon-fin = BSC non-financial

β_0 = Intercept of the dependent variable

β_1 = Coefficient on the first independent variable
β_2=Coefficient on the second independent variable
u_t = error term
Decision rule: If the prob (p-value) is < 5% significant level, the null hypothesis is rejected, otherwise it is accepted.

4.0 Results and Discussions

From the data collected, using the model specifications, the result is presented thus:

Table 2. Descriptive statistics result of the secondary data ROA as a profitability measure, and Liquidity measure

Variables		Mean	Std. Dev.	Min.	Max.	Obs.
ROA	overall	2.4097	1.1779	0.88	7.51	N =60
	between		0.7508	1.49	3.6633	n = 10
	within		0.9336	0.5133	6.3413	T-bar =6
Liquidity	overall	0.9358	0.3719	0.12	1.87	N = 60
	between		0.1848	0.6617	1.2767	n = 10
	within		0.3272	-0.0108	1.5292	T-bar = 6
BSCFin.	overall	0.6983	0.2165	0.1	1	N = 60
	Between		0.0734	0.5583	0.8083	n = 10
	within		0.2048	0.0817	1.14	T-bar =6
BSCnonF.	overall	0.2483	0.1029	0.1	0.5	N =60
	Between		0.1029	0.1833	0.3083	N =10
	Within		0.0414	0.0733	0.5233	T =6

Source: Author's computation using STATA version 16 software, 2024.

The descriptive statistics displayed in the table above indicate that there were a total of 60 observations included in the study. This signifies the timeframe the research spans, highlighting seasonal variations across different segments and periods. Consequently, the differences observed among companies and over time justify the selection of a panel data model.

The descriptive statistics presented (means, standard deviations) could benefit from comparative analysis. The mean highlights trends, specifically the growth in performance of telecommunications firms; meanwhile, the standard deviation, which assesses variability, reflects the distribution of data around the mean, indicating the consistency of the dataset and demonstrating that the performance observed is in line with industry standards.

Table 3. Panel Random Effect Result Model One (Return on Assets)

Dependent Variable:	Return on Assets (ROA)		
Independent Variables	**Coefficient**	**Standard Error**	**Z-ratio**
BSC Financial (BSCFin)	1.5644	0.6536	2.39**
BSC non-Financial (BSCnonF)	2.4520	1.0057	2.44***
Constant	1.9523	0.2646	7.38***
Wald Chi^2	7.60**		
Diagnostic Tests			
Multicollinearity Test (VIF)	1.01		
Heteroskedasticity Test (Breusch Pagan Test)	3.39	(0.0656)	
Wooldridge test serial correlation	2.046	(0.1864)	
Ramsey Reset	0.94	(0.4287)	

***Source**: Author's computation using STATA version 16 Software. ***, ** and * denotes level of significance at 1%, 5% and 10% respectively. The P-values are the values in the parentheses, 2024.*

Concretely, BSC financial application shows a positive and significant effect on ROA at a 5% level, indicating that a percentage change in BSC financial application will cause about a 1.56% increase in profitability. Showing that the profitability of Nigerian telecommunication companies is strongly determined by the financial application of BSC. BSC non-financial application has a positive and significant effect on return on assets at a 1% level. Indicating a percentage change in the BSC non-financial metrics application will cause the return on assets to increase by 2.45%. Showing that the profitability of the Nigerian telecommunication companies is also strongly determined by the non-financial application of BSC. A test statistic indicating serial correlation is significantly below 5% (Drukker, 2003), but our analysis yielded different results, leading us to accept the null hypothesis of no first-order autocorrelation. Additionally, both the Breusch-Pagan and VIF tests showed no issues with multicollinearity and heteroskedasticity in the model. The Ramsey RESET test for the functional specification demonstrated no signs of misspecification, with an F-statistic of 0.94 and a probability value of 0.4287, confirming that our model is correctly specified. Therefore, we conclude that our model is suitable for making predictions.

The result for random effect as used in the model specifications for objective two, as the accepted model after a Hausman test has been performed, is presented below:

Table 4. Panel Random Effect Result Model Two (Liquidity)

Dependent Variable:	Liquidity		
Independent Variables	**Coefficient**	**Standard Error**	**Z-ratio**
BSC Financial (BSCFin)	0.2014	0.1035	1.95**
BSC non-Financial (BSCnonF)	0.9705	0.2109	4.60***
Constant	1.0291	0.2717	3.79***
Wald Chi^2	11.66***		
Diagnostic Tests			
Multicollinearity Test (VIF)	1.01		
Heteroskedasticity Test (Breusch Pagan Test)	0.74	(0.3884)	
Wooldridge test serial correlation	0.683	(0.683)	
Ramsey Reset	1.01	(0.3944)	

Source: Author's computation using STATA version 16 Software. ***, ** and * denotes level of significance at 1%, 5% and 10% respectively. The P-values are the values in the parentheses, 2024.

The BSC financial application shows a positive and significant effect on liquidity at a 5% level, indicating a percentage change in the BSC financial application will cause about a 0.20% increase in liquidity measure in the Nigerian telecommunication companies. This shows that the liquidity measure of Nigerian telecommunication companies is strongly determined by the financial application of BSC. BSC non-financial applications has a positive and significant effect on liquidity at the 1% level. Indicating a percentage change in BSC non-financial application will cause liquidity measures to increase by 0.97%. Showing that the liquidity measure of the companies is also strongly determined by the non-financial application of BSC.

Test of Hypotheses

Ho_1: BSC application has no significant effect on ROA as a profitability measure in Nigerian telecommunication companies.

From the findings, there exists a positive and significant relationship between the various measurements of BSC (Financial and non-financial) on Return on Asset.

Therefore, the null hypothesis (H_O) which states that BSC application has no significant effect on ROA as a profitability measure in Nigerian telecommunication companies is rejected.

H_{O2}: BSC application has no significant effect on liquidity in Nigerian telecommunication companies.

From the study findings, there exists a positive and significant relationship between the various measurements of BSC (financial and non-financial) on liquidity. Hence, the null hypothesis (H_O) which states that BSC application has no significant effect on liquidity in Nigeria's telecommunication companies is rejected.

Table 5. Grading Criterion

S/N	Letter Grade	Percentage	Form	General Remarks
1	A	80% - 100%	Strongly applied	Excellent
2	B	60% - 79%	Semi-strongly applied	Good
3	C	40% - 59%	Weakly applied	Poor
4	D	0% - 39%	Non applied	Extremely poor.

Source: Kantudu A, S (2006) - *On the criterion for grading compliance with the requirements of SAS10*

A telecommunications company will receive an 'A' grade, indicating a strong application or excellence, if it implements the BSC at a level of 80% or higher. Conversely, a telecommunications company will be assigned a 'D' grade, representing extremely poor application, if it scores below 40%, specifically within the range of 0% to 39%. It is important to highlight that SAS 10 was created for banks, non-banking financial institutions, and companies like telecommunications to establish a standard for grading levels and assessing compliance. This serves as a benchmark, as referenced by other researchers such as Aminu and Maishanu (2014).

Using the grading criterion above, the outcome of the various responses gathered on customer satisfaction measures are summarized and presented below:

Table 6. Grading level of application of BSC on customer satisfaction

Companies	% Application	Form	General Remarks
MTN Nigeria	92%	Strongly applied	Excellent
Airtel Nigeria	81%	Strongly applied	Excellent
Smile Nigeria	77%	Semi-strongly applied	Good
Globacom	83%	Strongly applied	Excellent
9mobile	79%	Semi-strongly applied	Good
Swift network	81%	Strongly applied	Excellent
N-Tel	77%	Semi-strongly applied	Good
MainOne	67%	Semi-strongly applied	Good
Visafone	68%	Semi-strongly applied	Good
Spectranet	75%	Semi-strongly applied	Good

Source: *Field Survey, 2024*

The table above shows the different application levels of BSC among the Nigerian telecommunication companies on customer satisfaction, ranging from a total of 92% by MTN Nigeria, which is classified as a strong application, to 67% by MainOne, which is considered semi-strong.

Table 7. Grading level of application of BSC on employee's motivation measure

Companies	% Application	Form	General Remarks
MTN Nigeria	88%	Strongly applied	Excellent
Airtel Nigeria	87%	Strongly applied	Excellent
Smile Nigeria	72%	Semi-strongly applied	Good
Globacom	90%	Strongly applied	Excellent
9mobile	75%	Semi-strongly applied	Good
Swift network Limited	81%	Strongly applied	Excellent
N-Tel	73%	Semi-strongly applied	Good
MainOne	68%	Semi-strongly applied	Good
Visafone	75%	Semi-strongly applied	Good
Spectranet	66%	Semi-strongly applied	Good

Source: *Field Survey, 2024*

The table above shows the different application levels of BSC among the Nigerian telecommunication companies on employee motivation measure, ranging from a total of 90% by Globacom, which is classified as a strong application, to 66% by Spectranet, which is considered a semi-strong application, i.e., good application.

H_{O3}: BSC application has no significant effect on customer satisfaction in Nigerian telecommunication companies.
From the summary of the outcome of the various responses on customer satisfaction measures, the ANOVA table presents the result as shown below:

Table 8. ANOVA Table I

Source of variation	SS	df	MS	F	P-value	F crit
Between Groups	4704.222	4	1176.056	146.1948	0.0000	2.605975
Within Groups	321.7778	40	8.044444			
Total	5026	44				

Source: *SPSS version 25.0*

The one-way ANOVA analysis was conducted to investigate how the application of BSC impacts customer satisfaction. The calculated F-value is 146.19, while the critical value for F at degrees of freedom (4, 40) is found to be 2.61. Additionally, the p-value was 0.0000, suggesting a statistically significant effect of the BSC application on customer satisfaction in Nigeria's telecommunications companies, with the analysis confirming that it was significant at $p<0.05$. Since the calculated value is greater than the critical table value, the null hypothesis (H_{O3}) earlier formulated is rejected, and the study therefore concludes that the evaluated BSC application has a significant effect on customer satisfaction in Nigerian telecommunication companies.

H_{O4}: BSC application has no significant effect on employees' motivation in Nigerian telecommunication companies.
From the summary of the outcome of the various responses on the employee motivation measures, the ANOVA table presents the result as follows:

Table 9. ANOVA Table II

Source of variation	SS	df	MS	F	P-value	F crit
Between Groups	4378.25	4	1094.563	88.73118	0.0000	2.641465
Within Groups	431.75	35	12.33571			
Total	4810	39				

Source: *SPSS version 25.0*

The result of the one-way ANOVA from the table above indicates a significant impact of the BSC application on employee motivation among Nigeria's telecommunication companies. The computed F-value of 88.73 far exceeds the critical value of 2.64 at $F_{4, 35}$. Additionally, the p-value of 0.000 confirms that this effect is statistically significant at a threshold of $p<0.05$. This suggests that the application of BSC plays a critical role in enhancing employee motivation in Nigerian telecommunication companies. Since the computed value is greater than the critical table value, the null hypothesis (H_{O4}) earlier formulated is rejected, and the study therefore concludes that the evaluated BSC application has a significant effect on employee motivation in Nigerian telecommunication companies.

Relationship observed from the results and its implications.

The regression coefficients show significance implications on decision-making, strategy evaluation, and performance management. The key implications are:

- Causal Relationships Between Metrics: The presence of significant coefficients indicates that an independent variable (for example, an early indicator such as employee training) has a notable effect on the dependent variable (for instance, financial performance). This implies a possible causal link that can influence strategic decisions.
- Performance Forecasting: It can aid in predicting future performance, facilitating the establishment of realistic goals and expectations for strategic results.
- Prioritization of Initiatives: Metrics that display significant coefficients should be given priority, as they have demonstrated an influence on performance. This can assist in more effectively directing resources towards initiatives that yield higher impact.
- Validation of Strategy: The BSC aims to connect non-financial metrics (such as learning and innovation) with financial results. The significant coefficients

lend support to the idea that enhancements in these areas contribute to overall performance, thereby validating the strategic approach.

- Cross-Dimensional Insights: The significant coefficients might reveal interdependencies between these perspectives (for example, how employee engagement can impact customer satisfaction).

Financial and non-financial metrics in the BSC differ in their impacts because they serve distinct purposes and focus on different aspects of organizational performance. They differ in terms of timeframe, scope of impact, alignment with strategy, measurement and visibility, and relevance to audiences and stakeholders. Financial metrics focus on short-term outcomes like profitability and revenue, while non-financial metrics focus on long-term success factors like customer satisfaction and innovation. Financial metrics are lagging indicators, while non-financial metrics are leading indicators, forecasting future performance. Financial metrics are easy to measure and track, whereas non-financial metrics can be challenging. Financial metrics are primarily concerned with external stakeholders, while non-financial metrics are more significant for internal stakeholders. Combining these metrics provides a holistic perspective on organizational performance.

Potential Underlying Factors That Might Explain Variations in BSC Application

The potential underlying factors that might explain variations in BSC application among the sampled telecommunication companies are organizational, environmental, and strategic elements. The organizational factors encompass the company's size, industry classification, organizational culture, as well as the skills and expertise of its workforce. Companies such as larger firms may possess more resources and capabilities to implement the BSC effectively compared to smaller enterprises. In the industry classification here, various industries might place greater importance on certain performance perspectives based on their specific operational focus. Organizations that foster a culture of innovation and continuous improvement are likely to adopt the BSC more efficiently. The environmental factors involve market competition, regulatory frameworks, and economic circumstances. Businesses operating in intensely competitive markets might apply the BSC more strictly to align their strategies and sustain a competitive advantage. Companies in sectors with strict regulations may utilize the BSC differently to fulfill compliance obligations. Also, economic circumstances such as the degree of economic stability or instability can influence the degree of focus

and commitment towards implementing the BSC. The strategic factors include emphasis on innovation, organization's business goals and objectives, implementation factors, customer orientation, challenges in measurement and evaluation, influence from external stakeholders, and the stage of BSC adoption.

Discussion of findings

The study reveals that the Nigerian telecommunications companies applied BSC in their performance measurement. From the results of the grading criterion, BSC as a performance measure in Nigerian telecommunication companies was strongly applied in some companies and semi-strongly applied in others. Also, the result of the test of hypothesis, shows that there exists a positive and significant relationship between the various measures of BSC in the four dependent variables: ROA as a profitability measure, liquidity, customer satisfaction, and employee motivation measure in Nigerian telecommunication companies. This implies that Nigerian telecommunication companies experience growth and development in applying BSC as a performance measure. With that, leveraging on BSC application will foster more growth.

The international comparisons of Nigerian telecommunication companies' BSC application with global best practices shows that the Nigerian telecommunication companies' BSC application aligns with global best practices only in some respects. Globally, leading telecommunications companies in the United States {American Telephone and Telegraph (AT&T), Verizon Communications}, China (China Mobile), United Kingdom (Vodafone group), Germany (Deutsche Telekom), France (Orange), and Japan (NTT group), among others, implement and measure BSC components using similar standards across, aligning to global best practices. The Nigerian telecommunications companies' strategic objectives and alignment with BSC components, along with the effectiveness of their execution and reporting processes, align with global best practices. Nonetheless, Nigerian telecommunications companies fall short of global standards in certain aspects of strategic alignment and performance outcomes. Factors related to culture and market context, including economic conditions, regulatory frameworks, and customer behavior in Nigeria, cause slight deviations from global standards. It is crucial for Nigerian telecommunications companies to improve their BSC application, bridge gaps with global benchmarks, and adapt global best practices to suit the Nigerian market context.

Telecommunication companies can collaborate with policymakers to institutionalize BSC by adopting a strategic approach that aligns organizational

goals with public policy objectives. To accomplish this, it is essential to involve policymakers from the start with ongoing, open discussions to synchronize the company's strategic interests with regulatory and societal objectives. Policy workshops can be arranged to inform policymakers about the advantages of adopting the BSC and how it aligns corporate strategies with public goals. Enhancing transparency and accountability by publicly sharing advancements in BSC metrics through regular reports. Establishing incentive structures (such as tax benefits or grants) linked to reaching specific BSC targets that align with policy objectives. It is also important to implement a feedback mechanism that incorporates the insights of policymakers and stakeholders to improve BSC practices. In summary, by nurturing collaboration, ensuring transparency, and aligning goals, telecommunication companies can embed the BSC in ways that generate value for both the industry and society.

BSC potential limitations or biases in the study

The BSC has some potential limitations or biases in the study, such as the reliance on managerial responses which has implications for the study's generalizability. Among the limitations or biases are dependence on managerial viewpoints such as relying solely on feedback from managers, this might neglect contributions from other stakeholders including employees, customers, or external partners, leading to a limited perspective. Managers may emphasize metrics that highlight their achievements, resulting in a partial or distorted understanding of the organization's overall health. Such personal biases may lead to an underreporting of challenges. A heavy reliance on managerial feedback may prioritize immediate operational issues rather than focusing on long-term strategic aims. There may be inconsistencies in how managers interpret metrics, resulting in variations in data reporting. Managers might resist implementing metrics that question established practices or reveal inefficiencies. If they perceive the BSC as a means of exerting control rather than promoting improvement, their feedback may be incomplete or misleading.

5.0 Conclusion and Recommendations

From the findings of the study, it can be concluded that there is an evaluation of the application of BSC on ROA as a profitability measure, liquidity, customer satisfaction, and employee motivation measures in Nigerian telecommunication companies. The study concluded that there are statistically significant effects of BSC application on the measurement variables in the Nigerian telecommunication companies, which are positive and significant. Also, based on our findings, it can

be concluded that the performance of Nigerian telecommunication companies is strongly determined by ROA as a profitability measure, liquidity, customer satisfaction, and employee motivation measures which is shown on the study result.

It is therefore recommended, in light of our findings and conclusions, that, telecommunication companies in Nigeria should continue to strongly apply the BSC as a performance measure in Nigerian telecommunication companies, to improve and increase ROA as a profitability measure, and liquidity measure, to be financially solvent; customer satisfaction measures - to win trust, loyalty, and to help stand out of competition and also to increase sales; Employee motivation measure - to encourage employees, which will tend to improve performances and therefore lead to organization benefits, as employee performance plays a crucial role in the overall success of a business. When employees are performing at their best, it leads to higher quality work output, quicker and more effective customer service, and a stronger brand image. This, in turn, helps to retain customer interest and loyalty, ensuring that patrons consistently choose to engage with the business. Therefore, organizations in all sectors should have a shift in measuring their performance from the traditional way, which is purely financial-based, to BSC, which is a framework for measuring performance that incorporates both strategic non-financial metrics alongside traditional financial indicators. This approach allows managers and executives to gain a more comprehensive understanding of organizational performance, to be more solvent, achieve profitability, and survive the contemporary business world.

References

Alao, E. (2013). Strategic Decision Making, BSC Profitability: Issues and Challenges. *International Journal of Accounting Research,* 1(1), 20-31.

Al-Najjar, S. M., & Kalaf, K. H. (2012). Designing a BSC to Measure a Bank's Performance: A Case Study. *International Journal of Business Administration,* (3)4, 44-50.

Aminu, M. & Maishanu, M.M. (2014). Impact of Bank Compliance with Accounting Standards on Profit Ability, Asset Base and Number of Branches In Nigeria. *Studies in Humanities* Vol. 8 January-December, 2014. 8(1):71

Atarere, O. I., & Oroka, O. V. (2012). Roles of Balanced Scorecard in Improving the Performance of Microfinance Banks in Nigerian Economy. *International Journal of Research and Development*, 280-287.

Bailey, L (1987). What Determines Quality in Qualitative Research? *The Market Research Society Newsletter*. pp. 44-45.

Bernard Lee, Anthony S. C. Tsui & Oliver H. M. Yau (2023): Impact of Balanced Scorecard implementation on company performance of PRC listed companies in the healthcare industry, *Journal of Transnational Management*, DOI: 10.1080/15475778.2023.2191379

Camilleri, M. A. (2021). Using the balanced scorecard as a performance management tool in higher education. *Management in Education*, 35(1), 10–21 doi: 10.1177/0892020620921412

Chimtengo, S., Mkandawire, K. and Hanif, R. (2017). 'An evaluation of performance using the BSC model for the University of Malawi's Polytechnic'. *African Journal of Business Management, 11(4), 84.*

Dan, A. K. (2017). An Empirical Study on BSC as a Measurement and Management Tool for Corporate Performance. *IUP Journal of Business Strategy, 14(4).*

Donaldson, L. (1990). The Ethereal Hand: Organizational Economics and Management Theory. *Academy of Management Review*, 15, 369-381.

Donaldson, L., & Davis J. H. (1991). Stewardship Theory or Agency Theory: CEO Governance and Shareholder Returns, *Australian Journal of Management,* 16(1), 49-65.

Donaldson, L., & Davis, J. H. (1993). The Need for Theoretical Coherence and Intellectual Rigour in Corporate Governance Research: Reply to Critics of Donaldson and Davis. *Australian Journal of Management*, 18, 213-225.

Drukker, D. M. (2003). Testing for serial correlation in linear panel-data models. *Stata Journal.*3: 168–177. 2003.

Enosh, G., Tzafrir, S. S., & Stolovy, T. (2014). The development of client violence questionnaire (CVQ). *Journal of Mixed Methods Research.* 9 (3), 273–290. https://doi.org/10.1177/1558689814525263

Ghassan, F. A. (2011). Performance Evaluation and Adoption of BSC (BSC) in Jordanian Industrial Companies, *European Journal of Economics, Finance and Administrative Science,* 35, 37-46.

Gonzalez-Sanchez, M.B., Broccardo, L. and Martins Pires, A.M. (2017). 'The use and design of the BSC in the health care sector: A systematic literature review for Italy, Spain, and Portugal.'"*The International Journal of Health Planning and Management.* DOI 10.1002/hpm.2415. February.

Ismail, A., (2021), *International Journal of Education Development* ISSN: 1119-74-98 University of Uyo Vol. 21(1) 2018

Kairu E. W.**,** Wafula, M. O., Okaka, O., Odera, O., & Akerele, E. K. (2013). Effects of BSC on Performance of Firms in the Service Sector. *European Journal of Business and Management,* 5 (9), 81-83.

Kantudu, Aliyu & Tanko, Muhammad. (2008). Compliance with the Requirements of Accounting Standard by Quoted Companies in Nigeria. *SSRN Electronic Journal*. 10.2139/ssrn.1150973.

Kaplan, R. S., & Norton, D. P. (1992). BSC- Measures that Drive Performance, *Harvard Business Review,* January-February 1992, 70-72

Kaygusuz, S.Y. (2005). Balanced Scorecard (Measurement Card Techniques) In the Performance Management Function of Management Accounting. 'Work, Power' *Journal of Industrial Relations and Human Resources*, 7(1), 81-103

Laury, H. A., Matondang, N., & Sembiring, M. T. (2020). Balanced scorecard in the integration of corporate strategic planning and performance: a literature review. IOP Conference Series: Materials Science and Engineering, 81(5), 1-25.

Malgwi, A.A. and Dahiru, H. (2014). 'BSC financial measurement of organizational performance: A review'. IOSR *Journal of Economics and Finance (IOSR-JEF), 4(6). 2014.*

Maxwell, J. A. (2016). Expanding the history and range of mixed methods research. Journal of Mixed Methods Research , 10 (1), 12–27. https://doi.org/10.1177/1558689815571132.

Nassar, D., Othman, M., Hayajneh, J. A., & Ali, N. (2015). An Integrated Success Model for an Electronic Health Record: A case study of Hakeem Jordan. *Procedia Economics and Finance*, 23, 95-103.

Niven, P. (2002). *Balanced Scorecard Step-by-Step for Government and Nonprofit Agencies*. John Wiley&Sons, Inc. 2002.

Oukhay, F., & Romdhane, T. B. (2022). A decision support framework based on FCM for selecting key performance indicators. *Proceedings of the 5th International Conference on Advanced Systems and mergent Technologies (*pp. 97-102*)*. Hammamet, Tunisia. https://doi.org/10.1109/IC_ ASET53395.2022.9765915

Patricia, Q., Beatriz, A. G., and Lucia, L. R., (2017). Advantages and contributions in the balanced scorecard implementation. *Intangible Capital. IC, 2018 – 14(1): 186-201 – Online ISSN: 1697-9818 – Print ISSN: 2014-3214 https://doi.org/10.3926/ic.1110*

Pollanen, R. M., & Xi, K. K. (2018). The effects of using BSC measures in executive compensation on organizational performance. *International Journal of Business, Accounting, & Finance,* 12(1).

Pourmoradi, R., Niknafs, J. & Abdollahian, F. (2016). 'A Literature Review on Balanced Scorecard: Quantification of the BSC'. *Applied mathematics in engineering, management and technology, 4(3), 133-142.*

Shim, Y.S. (2018). A study on the introduction of management by objective in the personnel management in media companies. *Journal of Communication Science*, vol. 18, no. 2, pp. 70–106.

Song, X. (2022). Application of balanced scorecard in performance and evaluation in listed companies. Hindwai. Discrete dynamics in nature and society, 5, 1-11. https://doi.org/10.1155/2022/2247890

Stede W.A.V.D, Chow, C.W., & Lin, T. W. (2006). Strategy, choice of performance measures, and performance. Behavioral Research 18(2006), 185-205. Measures, and in Accounting

Tahniyath, F., and Said, E., (2020). Balanced scorecard in the hospitality and tourism industry: Past, present and Future. *International Journal of Hospitality Management 91 (2020) 102656* www.elsevier.com/locate/ijhm

Ugural, M. & Burgan, H.B. (2021). Project performance evaluation using EVA technique: kotay bridge construction project on kayto river in Afghanistan[J]. *Tehni˘cki Vjesnik*, vol. 28, no. 1, pp. 340–345, 2021.

Zahirul, H., & Wendy, J. (2000). Linking balanced scorecard measures to size and market factors: Impact on organizational performance. *Journal of Management Accounting Research*, 12, 1-17.