IMPACT OF BALANCE SCORECARD ON FINANCIAL PERFORMANCE MEASUREMENT: EVIDENCE FROM LISTED INDUSTRIAL GOODS FIRM IN NIGERIA

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Abstract

This study examines the effect of the application of the financial perspective of balanced scorecard on financial performance in listed industrial goods firms in Nigeria (2016 – 2020). The population of the study consist of eleven industrial goods company listed however only one was listed within the period under review. Purposive method was used in selecting the rest ten (10) as representative sample for this study. The instrument used in data collection was secondary sources of cross-sectional and time-series data which were estimated using panel data analysis. The finding reveals that the financial perspective of the balance scorecard has positive effect on the financial performance of firms with the p-value. The study concludes that an improved performance of the balance scorecard of the organizations will bring better returns and prosperity to it. The study further encourages the financial efficiency of the industries to ensure effective improvement in the volume of the assets and the return on the assets

Keywords: Balance scorecard, dividends per share, earnings per share, firm size, financial performance

Introduction

Modern management concept presents a situation where performance measurement and management play crucial roles in the ever growing competitive business environment that is characterized by the shortage of resources. Organizations need to put extra efforts to improve their performance by closing the necessary strategic gap that exist between business and environmental dynamics, (Kadarova, Durkacova, Teplicka & Kadar, 2015). A performance measurement system such as financial performance enables well informed and rational decisions to be made as they quantify the efficiency and effectiveness of past positions through the management and presentation of appropriate data (Fooladvand, Yarmohammadian & Shahtalebi 2015). Over the years, the balanced scorecard has evolved, from the performance measurement tool originally introduced as a tool for implementing strategies and a framework for determining the alignment of organization's human, information and organization capital with its strategy (Sujova, Rajnoha & Merková 2014).

The use of scorecard models entails absolute reconsideration for the traditional business management style, and a shift from over reliance on purely financial measures as a basis for strategy development (Mustafa & Fehmi 2018). The scorecard is basically a performance measurement framework with two key objectives; converting strategy into goals, and communicating that strategy to all segments of the organisation. Balanced scorecard attempts marketing orientation by ensuring that cooperative organizational model exists, which will guarantee customers' value (Kádárová, Durkáčová & Kalafusová 2014). This emphasis on customer satisfaction arises out of hard economics which should also be able to translate into improved financial performance of the business.

The balance scorecard links performance measures by looking at a business's strategic vision from four perspectives which include financial, innovation and learning, customer and internal business process (Mohamed, Karim & Mohamed 2020). These perspectives support the goals of various management techniques such as financial performance among others. The financial perspective represents the long-term goal of the organizations to provide superior returns based on the firms size and capital invested in the firms (Sujova, Rajnoha & Merková 2014). Financial measures have been the traditional method of analyzing organizational success which include but not limited to elements revenue per sales, revenue growth, dividends per share, market share and earnings per share (Mohamed, Karim & Mohamed 2020).
Industrial goods companies in Nigeria have incorporated the balance scorecard model into their business strategies in order to survive, compete and sustain growth of the organization. It is against this backdrop that this study focused on the effect of balance scorecard on the financial performance of industrial goods firm in Nigeria with specific focus on the financial perspective.

Statement of the Problem

The most important and unavoidable managerial problem of corporations operating at a high level of competition is the challenges of strategic planning-based performance management. That is, the difficulties in finding out at what rate they can reach certain objectives and expectations, or how reachable they could be at a point in time (Mustafa & Fehmi 2018). This situation has led to a rapid increase in the importance of the use of balance scorecard in performance and especially performance measurement across firms. In such situations, industries and firms are limited in looking through their futures with traditional measurement systems that only act with past period data and

analyze their situation accordingly. In order to mitigate against this, the performance indicators used to achieve performance measurement in a healthy manner need to be carefully selected (Mohamed, Karim & Mohamed 2020).

Despite the development of dozens of frameworks and techniques for measuring business assets such, a question arises whether the internal measurement of financial performance for management purposes is associated with higher performance. Researchers have also highlighted the role of balanced scorecard in the effective management of change and financial performance but with several inconsistencies in findings. The problem of this study is therefore premise on investigating the direction and the extent of the effects of balance scorecard on financial performance in listed industrial goods firms in Nigeria.

Objectives of the Study

The main objective of this study is to investigate the effect of the application of the financial view point of balanced scorecard on financial performance in listed industrial goods firms in Nigeria (2016 – 2020). However, the specific objectives of the study are presented below:

i. to determine the effect of dividends per share on the financial performance of listed industrial goods firms in Nigeria
ii. to evaluate the effect of earnings per share on the financial performance of listed industrial goods firms in Nigeria
iii. to analyse the effect of earnings per share on the financial performance of listed industrial goods firms in Nigeria

Hypotheses of this Study

The statements of hypotheses of this study are stated in the null forms as below:

H_{01}: Dividends per share has no significant effect on the financial performance of listed industrial goods firms in Nigeria
H_{02}: Earnings per share has no significant effect on the financial performance of listed industrial goods firms in Nigeria
H_{03}: Firms size has no significant effect on the financial performance of listed industrial goods firms in Nigeria

Conceptual Framework

This section presents the exploration of the concepts used in this study which include balanced scorecard, dividends per share, earnings per share and financial performance.

Balanced Scorecard

The balance score card is a performance management frame work that links strategy with day to day operations (Abdallah & Alnamri 2015). It provides a holistic view of the enterprise based on the business objectives. The balance score card approach supplements traditional financial measures with non-financial measures focused on at least three other perspectives- customers, internal business processes, and learning and growth (Mustafa & Fehmi 2018). The balance score card is a management system that enables organizations to clarify their vision and strategy and translate them into action. It provides feedback around both the internal business processes and external outcomes in order to continuously improve strategic performance and results (Sujova, Rajnoha & Merková 2014).

Dividends per Share

In this study, dividend per share (DPS) is the total declared dividends that a company issued for every ordinary share outstanding (Mohamed, Karim & Mohamed 2020). Mathematically DPS is calculated by dividing the sum total of dividends paid out by a corporate entity, including interim dividends, over a period of time, usually a year, by the total number of outstanding ordinary shares issued.

Earnings per share

In this study, earning per share (EPS) is a very important financial measure, which carefully indicates the performance and profitability of an organization (Mohamed, Karim & Mohamed 2020). Mathematically EPS is obtained by dividing the firm's net income by its number of total outstanding shares. It is also a tool that market participants use frequently to predict the performance of corporation before buying its shares.

Financial Performance

Financial performance is an indicator of organization's capacity to carry risk and/or increase their capital. It indicates businesses' competitiveness and measures the quality of performance management (Mohamed, Karim & Mohamed 2020). However, this study uses return on assets (ROA) to measure the financial performance of the firms. ROA are commonly used as indicators of the financial performance by studies in related areas (Sujova, Rajnoha & Merková 2014).

Empirical Review

The related empirical reviews revealed inconsistent relationship, effects and impacts between balance scorecard and performance in organization. For instance, Mohamed, Karim and Mohamed (2020) that seek to establish a framework balanced scorecard and performance auditing firms using the five key elements reveals that the use of the proposed balanced scorecard measures will enhance audit firms' performance. Fooladvand, Yarmohammadian and Shahtalebi (2015) also agrees that balanced scorecard framework helps organizations translate strategy into operational objectives that drive both behavior and performance. There are some evidences that non- financial performance measures are positively associated with performance (Mustafa & Fehmi, 2018).

Furthermore, it has been suggested that companies adopting performance measurement system would improve their corporate performance and profitability by identifying the causal relationships between actions and performance (Abdallah & Alnamri 2015). However, the study of Albright, Burgess and Davis (2015); Kang, Chiang, Huangthanapan and Dowing (2015) show that balanced scorecard did not present positive effects on the performance and corporate social responsibilities respectively. This inconsistence the findings of literatures on the relationship and effect of balance scorecard and performance of business corporations present the knowledge gap that this study seeks to cover. In addition, there also exist periodical gap, as there are no recent studies in related field in Nigeria.

Theoretical Framework

The shareholder value maximization and survival-based theories are the foundations of this research.

The Survival-Based Theory

The survival-based hypothesis, widely known as the "survival of the fittest" notion, was created by Herbert Spencer (Miesing & Preble, 1985). The survival-based approach to strategic management is founded on the idea that in order to survive, firms must develop strategies that focus on operating efficient operations while also being able to adapt to changing competitive conditions (Khairuddin, 2005). This is because the firm that survives is the most fit and capable of adjusting to the changing business environment. According to the survival-based theory, if a firm does not adapt to and become effective in its ever-changing business environment, it will perish.

Maximization of Shareholder Value Theory

Friedman initially introduced the shareholders value maximisation idea in 1970. According to Friedman (1970), business has only one social responsibility: to use its resources to engage in profitable activities as long as it adheres to the rules of the game, that is, competes in an open and honest manner without deceit or fraud. This concept best reflects a company's social responsibility, which is described as the company's use of resources to engage in profitable activities. Managers' principal obligation, according to the shareholder value maximisation concept, is to maximize shareholders' interests in any way that is still legal or socially desirable (Kennerly, 2010).

Methodology

The study used an explanatory study. Quantitative research design was adopted because it involves the collection of data from the secondary data. The population of the study is the total number of industrial goods firms listed in Nigeria which is eleven (11) (Nigerian Stock Exchange, 2022). However, this study used purposive method to select ten (10) as representative sample based on the year they are listed on NSE. The instrument used in data collection depends on the secondary sources of data collection. Data would be sourced from the Annual Accounts, Reports and/or financial statement of the industrial goods firms in the sample. The data include cross-sectional and time-series data, therefore were collected and presented in a panel data set and estimated using panel data analysis.

In evaluating the effect of balance scorecard on the financial performance, financial perspective of balance scorecard (dividends per share (DPS) and earnings per share (EPS)) represent the independent variables, firms size

(FIRMS) represents the control variable while financial performance (return on assets (ROA)) which the dependent variable. Those data was collected using the measurement below:

Variables Measurement of the Study

S/N	Variables	Variable Measurement with authors and year	Signs
1.	ROA	$\frac{\text{Total Profit (after tax)}}{\text{Total assets}}$ (Kolapo, *et al*, 2012)	
2.	DPS	$\frac{\text{Annual dividends}}{\text{Total Number of shares}}$ (Machane ratio, 2020)	$\beta_1 > 0$ (+ve)
3.	EPS	$\frac{\text{Net income} - \text{preferred dividends}}{\text{Number of common shares outstanding}}$ (Machane ratio, 2020)	$\beta_2 > 0$ (+ve)
4.	FIRMS	Natural log of Firms Size (Machane ratio, 2020)	$\beta_3 > 0$ (+ve)

Source: Researcher's compilation, 2022

The model for this study functionally becomes;
ROA= f(DPS, EPS, FIRMS) ..... (1)
The econometric equation for the model is specified as:
$ROA_{it} = \beta_0 + \beta_1(DPS)_{it} + \beta_2(EPS)_{it} + \beta_3(FIRMS)_{it} + \mu_{it}$
Where; β_0 = Constant parameter; $\beta_1 - \beta_3$ = Coefficients of independent variables; μ = Error term

i= 10 firms; t = time dimension of the variables (5 years)

The expected signs of the coefficients (apriori expectations) are such that β_1, β_2, and $\beta_3 > 0$.

Also, through the combination of panel data and time series of cross-section observation give more informative data, less co-linearity among the variables, more variability, more efficiency and more degree of freedom. The main reason for the selection of this panel series regression model for the analysis of data in this research is because this type of regression model shows the extent to which the independent variable (predictor) explains the dependent variable. The other reason for the adaptation of this model is because, several studies have utilized and it is popularly acceptable for data analysis by several researchers.

Data Presentation and Analysis

In analyzing the data for this study, the correlation matrix is presented to indicate the relationship between the balance scorecard variables and

financial performance. The correlation analysis is presented in the table below:

Correlation Analysis

Variables	ROA	DPS	EPS	FIRMS
ROA	1.0000			
DPS	0.3852*	1.0000		
	0.0203			
EPS	0.3675*	0.3714*	1.0000	
	0.0370	0.0257		
FIRMS	0.1174	0.2351	0.1035	1.0000
	0.4954	0.1675	0.5482	

Source: Researcher's compilation, 2022

* Correlation is significant at the level 0.05 level (2-tailed)

The correlation analysis reveals that the relationship between return on assets and dividends per share is positive, weak and statistically significant (r = 0.385, p = 0.0203) at confidence level of 95%. Also, earnings per share has significant positive relationship with return on assets (r = 0.3675, p = 0.0370), however, there are no statistical significance relationship between return on assets and firms size (r = 0.1174, p = 0.4954). This analysis is an indication that there is significant positive relationship between balance scorecard and performance in the industrial goods firms in Nigeria.

Test of Hypothesis

The regression model is the tool for the testing of the hypotheses of the study. The model of the hypothesis is represented in the table below.

Model for Hypotheses

Variables	**Coefficient**	**t stat**
Constant	0.0581199	1.99
R-Squared	0.4559	
Adj. R-squared	0.3767	
p-value		
DPS	0.028	1.25
EPS	0.035	0.10
FIRMS	0.859	1.04
F stat	2.15	
Df	49	
Number of Obs	50	

Source: Researcher's Survey, (2022)

From table above, the value of R squared indicates that only 45.59% of the variability of ROA assets of the industrial goods firms in Nigeria can be explained by DPS, EPS and FIRMS.

Hypothesis One*:*

From table which indicates the regression analysis shows a p-value of 0.028 (i.e $p < 0.05$) and a (t stat) of 1.25 which indicates that the regression is positive and statistically significant. Therefore the null hypothesis which states that 'Dividends per share has no significant effect on the financial performance of listed industrial goods firms in Nigeria' is rejected.

Hypothesis Two:

From table which indicates the regression analysis shows a p-value of 0.035 (i.e $p < 0.05$) and a (t stat) of 0.10 which indicates that the regression is positive and statistically significant. Therefore the null hypothesis which states that 'Earnings per share has no significant effect on the financial performance of listed industrial goods firms in Nigeria' is rejected.

Hypothesis Three:

From table which indicates the regression analysis shows a p-value of 0.859 (i.e $p > 0.05$) and a (t stat) of 0.18 which indicates that the regression is positive but statistically insignificant. Therefore the null hypothesis which states that 'Firms size has no significant effect on the financial performance of listed industrial goods firms in Nigeria' is accepted.

Discussion of Findings

In the course of this study on balance scorecard and performance in listed industrial goods firms in Nigeria, attention was focused on the financial perspectives of the balance scorecard and return on assets of the firms. This study indicates that the financial perspective of the balance scorecard has positive effect on the financial performance of firms. The discussion of these findings is supported in literatures of related studies.

Firstly, this study reveals that dividends per share has significant positive effect on financial performance of industrial goods firms in Nigeria which is an indication that as dividends of the shareholders and customers improve the financial performance of the organizations improves. This finding agree with the study of Mohamed, Karim and Mohamed (2020) which also indicates that as customers satisfaction increases also the financial performance of the businesses. Mustafa & Fehmi, (2018) also shows similar positive relationship

between customers/clients benefits from the organization and the performance of the organization.

Secondly, this study presents that earnings per share has positively affected the financial performance of industrial goods firms in Nigeria which is an indication that as earnings of the employee, shareholders and customers improve the financial performance of the organizations improves. While Mohamed, Karim and Mohamed (2020) agree with this position, Kang, *et al*. (2015) indicated otherwise. This therefore stresses those earnings of the business stakeholders translate into the performance of the business.

Finally, various businesses have different sizes and volumes of production depending on the assets of the industries. In this study, firms size has no significant effect on the financial performance of listed industrial goods firms in Nigeria which is an indication that whether the business is small, medium or large, it does not have any effect on the financial performance. This position is supported by various literatures which include (Abdallah & Alnamri 2015; Albright, Burgess & Davis 2015).

Conclusion

This study concludes that balance scorecard determines to some extent the performance of industrial goods firms in Nigeria. This is an indication that an improved performance of the balance scorecard of the organizations will bring better returns and prosperity to it. Balanced Scorecard, which has been developed by recognizing the shortcomings and deficiencies of traditional measurement systems, has introduced a comprehensive performance management approach that uses the financial indicators and the nonfinancial ones together, and takes into account not only the financial benefits but also the non-financial ones in line with the missions and strategies of the businesses. The industrial goods organizations have incorporated the dimensions of balance scorecard as a performance measurement tools and use it to create change and improve performance.

Recommendations

This study therefore recommends that all customers, clients, employees and other stakeholders should invest and patronize the products of the firms as this would not just improve the service provision but will further improves the financial performance of the organizations. This can be done by ensuring that there is continuous increase in the stakes of all concern stakeholders. This

study further encourages the financial efficiency of the industry to ensure effective improvement in the volume of the assets and the return on the assets.

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Appendix

Database

Firms	year	id	roa	eps	dps	Firms
Berger Paints Plc	2016	1	0.018461	11	7	16.45969
Berger Paints Plc	2017	1	0.008664	87	40	17.17914
Berger Paints Plc	2018	1	0.006439	170	39	17.16137
Berger Paints Plc	2019	1	0.001489	152	40	18.95719
Berger Paints Plc	2020	1	0.009691	72	39	18.95719
Beta Glass Plc	2016	2	0.002553	57	30	21.6037
Beta Glass Plc	2017	2	0.107603	89	40	18.64378
Beta Glass Plc	2018	2	0.019595	48	23.4	19.2229
Beta Glass Plc	2019	2	0.00808	-34	12.4	19.55931
Beta Glass Plc	2020	2	0.011894	45	14	19.65272
BUA Cement Plc,	2016	3	0.008368	27	9	21.28304
BUA Cement Plc,	2017	3	0.0085	34	15	21.16486
BUA Cement Plc,	2018	3	0.002065	0.03	0	18.0299
BUA Cement Plc,	2019	3	0.003813	64	14.2	18.69901
BUA Cement Plc,	2020	3	0.003647	12	4	19.55658
CAP Plc	2016	4	0.029484	0.19	0.11	14.1945
CAP Plc	2017	4	0.019158	0.25	0	14.38814
CAP Plc	2018	4	0.02436	8	13.4	16.9748
CAP Plc	2019	4	0.004618	5	3.2	17.36952
CAP Plc	2020	4	0.0079	20	12	18.60288
CUTIX Plc	2016	5	0.039585	36	13	13.72598
CUTIX Plc	2017	5	0.038839	61	36	13.8936
CUTIX Plc	2018	5	0.039585	123	50	13.98696
CUTIX Plc	2019	5	0.038487	6	12.5	14.02392
CUTIX Plc	2020	5	0.018771	45	1.2	17.75356

Dangote Cement Plc	2016	6	0.003873	132	28	20.2009
Dangote Cement Plc	2017	6	0.016161	156	100	20.60708
Dangote Cement Plc	2018	6	0.021035	223	0	18.69438
Dangote Cement Plc	2019	6	0.000719	4	6	18.69505
Dangote Cement Plc	2020	6	0.016286	98	1.8	18.67825
Greif Nigeria Plc,	2016	7	0.038473	154	41	14.52709
Greif Nigeria Plc,	2017	7	0.027203	176	48	14.72031
Greif Nigeria Plc,	2018	7	0.030454	188	75	12.50979
Greif Nigeria Plc,	2019	7	0.023382	128	100	12.65015
Greif Nigeria Plc,	2020	7	0.034227	156	105	12.56992
Lafarge Africa Plc	2016	8	0.020374	292	175	20.74298
Lafarge Africa Plc	2017	8	0.01799	241	140	20.80328
Lafarge Africa Plc	2018	8	0.026316	305	170	21.14199
Lafarge Africa Plc	2019	8	0.009201	60	30	21.20589
Lafarge Africa Plc	2020	8	-0.00437	8	5	21.36741
Meyer Plc	2016	9	0.024662	32.88	20	12.82829
Meyer Plc	2017	9	0.027841	73.53	35	13.20352
Meyer Plc	2018	9	0.017236	172.53	60	12.84236
Meyer Plc	2019	9	0.012541	9.76	16	13.20103
Meyer Plc	2020	9	0.03836	70.41	1.1	13.38545
Notore Chemical Plc	2016	10	0.01109	191	110	18.79894
Notore Chemical Plc	2017	10	0.012968	189	90	19.28147
Notore Chemical Plc	2018	10	0.008474	345	150	19.14164
Notore Chemical Plc	2019	10	0.0125	286	135	19.37886
Notore Chemical Plc	2020	10	0.013188	103	85	20.03818

APPENDIX II: Output

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.4559[a]	.3767	.289	.564

a. Predictors: (Constant), DPS, EPS, FIRMS

ANOVA[b]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	16.154	3	58.718	2.15	.000[a]
	Residual	11.337	46	.318		
	Total	27.491	49			

a. Predictors: (Constant), DPS, EPS, FIRMS

b. Dependent Variable: ROA

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	0.0581199	1.99		1.99	.000
	DPS	.652	.030	.726	1.25	.028
	EPS	-.029	.031	-.035	0.10	.035
	FIRMS	.210	.033	.232	1.04	.859