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Triple Bottom Line Accounting on Financial Performance of Quoted Industrial Goods Firms in Nigeria

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ABSTRACT

This study examines Triple Bottom Line Accounting on Financial Performance of Quoted Industrial Goods Production firms in Nigeria. The sample comprises of 11 manufacturing firms Quoted on the Nigerian stock exchange (NSE), covering the period of 2013 to 2017 five years. The combination of 11 firms for a five years period provides a balanced panel of observations for analysis using a cross-sectional and ex-post facto research design. Triple Bottom Line Accounting measures, are Economic cost, Social cost, and Environmental cost. Financial Performance measure was Market Value Per Share. The postulated hypotheses were tested, using ordinary least square method of Multiple Regression Analysis. The empirical results states that, the r-squared of 0.38 suggest that our regression model, which regressed Triple Bottom Line Accounting indicators on Financial Performance of Quoted Industrial Goods Production Firms in Nigeria is well-fitted. The outcome is 38% and the probability value of f-statistics is significant at 1% supporting the credibility of the regression equation. This shows the ability of the selected explanatory variables to predict the changes that occur in Financial Performance of quoted industrial goods production firms in Nigeria. Based on the above findings, we recommend that, regulatory authorities, such as the Financial Reporting Council (FRC), Nigeria Stock Exchange (NSE) and Securities and Exchange Commission (SEC) to issue out necessary compliance directives and improve their compliance monitoring mechanisms to ensure a reasonable level of compliance by all companies to present their account reports in compliance with triple bottom line accounting pattern.

KEYWORDS: *Economic cost, Social cost, Environmental cost and financial performance*

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INTRODUCTION

Sustainability reporting is regarded as the integration of economic, social and environmental reporting (Middle-Brooks, Miltenberger, Tweedy, Newman &Follman 2009 in Piper, Mang, Knox&Waddel 2012). Elkington (1997) coined 'triple bottom line' as a new term to advance his sustainability agenda. In his definition of Triple Bottom Line, he used the terms profit, people, and the planet as the three lines. In this study, the economic, social, and environmental lines refer to profit, people, and planet respectively. He wrote that "Sustainable development involves the simultaneous pursuit of economic prosperity, environmental quality, and social equity (Elkinton 2004). Companies aiming for sustainability need to perform, not only for a single financial bottom line, but for the triple bottom line (Elkington, 2012). His definition is intended to go beyond previous construction of sustainable development and corporate social responsibility to encompass an approach that emphasizes economic prosperity, social development and environmental quality as an integrated method of doing business. This definition implies a shift away from the emphasis of organizations on short-term financial goals to long-term social, environmental, and economic impacts.

Slaper and Hall (2011) argue that looking to Triple Bottom Line sustainability measures, the economic measures are straight forward money-related and financing figures, while the environmental sustainability measures incorporate measuring the potential influences of business environmental impacts on natural resources and their viability. Environmental variables should represent measurements of natural resources and reflect potential influences on their viability. This would incorporate the contamination impact of water and air quality, greenhouse gas emissions, material recycling rates, water consumption, energy consumption, pollutant gases and substances, waste management of hazards, landfill, and material waste management. The social sustainability dimension's measures incorporating education level in the local community, equity level, welfare, careers retention, charitable contributions, level of health care and well-being, rate of unemployment, quality of life, per capita violent crimes, relative poverty, and social capital. Many organizations are becoming increasingly interested in social and environmental sustainability programs which have the capacity to improve financial benefits to a firm.

Objective of the Study

To determine the effect of Economic Cost, Social Cost and Environmental Cost on Market Value Per Share of Quoted Industrial Goods Production in Nigeria. How to make index that is both comprehensive and meaningful and how to identify suitable data for the variables that compose the

index, variables that encompass economic, social and environmental factors. Those variables are converted into monetary units. Though academics agree on the definition of Triple Bottom Line the challenge and real trick is how to measure it, as the three domains do not have a common measurement unit (Slaper& Hall 2011).

In other to analyze triple bottom line accounting on the financial performance we formulate the following hypotheses, "There is no significant relationship between Economic Cost, Social Cost and Environmental Cost and Market Value Per Share of Quoted industrial goods production firms in Nigeria."

Review of Related Literature

Brundtland (1987) defined sustainability as the "development that meets the needs of the present generations without compromising the ability of the future generations to meet their own needs". This ideological disposition hinges on the fact that organizational survival and performances is contingent on the sporadic use of the natural environment. Beredugo, Ihendinihu and Azubike (2019) Enumerates on the indispensability of environmental resources and energy for economic growth and that where this is not checked, it could undermine the survival of future generation to meet their needs. It follows therefore that for organizations to outperform its competitors they must not only account for their economic activities but must include information on company's interaction with the environment and people within and outside the organization.

Driven by sustainability, Triple Bottom Line provides a framework for measuring the performance of the business and the success of the organization using three lines: economic, social, and environmental (Goel 2010). Triple Bottom Line expresses the expansion of the environmental agenda in a way that integrates the economic and social lines according to (ALhaddi, 2015). Triple Bottom Line places an equal level of importance on each of the three lines (Alhaddi, 2015).

Elkington (2004) introduced the sustainability concept as triple bottom line. Triple Bottom Line Accounting captures the essence of sustainability by measuring the impact of an organization's activities on the world. This accounting practice goes beyond the traditional measure of profit, returns on investment and shareholders' value to include environmental and social dimension. Such reporting can be an important tool to support sustainability goals (Onyali, 2014). Although, Jackson, Boswell and Davis,(2011), states that there is no real consensus as to the exact dimension used for performance measurement. However, according to them, performance can be measured based on the impact of companies on the society as a whole both now and into the future. Social and environmental information disclosure is also commonly referred to as corporate social responsibility reporting (Abbot &Monsen, 2009). It can also be defined as an environmental management strategy to communicate with stakeholders, which makes it corporate social and environmental reporting.

Chapman and Milnne (2004) defined triple bottom line reporting as the measurement, management and reporting of economic, environmental and social performance indications in a single report. They added that triple bottom line reporting is therefore best seen as a process that includes managing, measuring and publicly reporting multi-dimensional performance and integrating it with management process. It goes beyond the traditional way of reporting and encourages businesses to give closer attention to the whole impact of their commercial activities over and above their financial performance (Dutta, 2011). Choi and Gary (2008), explained that Triple bottom line reporting is closely related to corporate social responsibility reporting and sustainability reporting. Social responsibility reporting refers to the measurement and communication of information about a company's effect on employee welfare, the local community, and the environment. Information on company welfare may involve working conditions, job security, equality opportunity, workforce diversity, and child labor. Environmental issues may include the impact of production process, products, and services on air, water, land, biodiversity, and human health. Social responsibility reporting is the communication about a company's responsibility for social and environmental aspects surrounding the business. This reflects that companies owe stakeholders an annual accounting of their social and environmental performance as the financial information they provide to shareholders.Goel, (2010).explained that Triple Bottom Line is an important issue in contemporary international debates. Central to Triple Bottom Line is a concern for sustainability, particularly for environmental sustainability, as this is crucial for long-term success and survival even in financial terms by which firms normally judge their success. Indeed many corporate reports, which used to be designated as environmental reports and subsequently as Corporate Social Responsibility reports have now been repackaged as sustainability reports or triple bottom line report. Triple Bottom Line is a concept whereby companies integrate social and environmental concerns in their business operations and in their operations within their stakeholders on a voluntary basis.

Slaper and Hall (2011) argue that looking to Triple Bottom Line sustainability measures, the economic measures are straight forward money-related and financing figures, while the environmental sustainability measures incorporate measuring the potential influences of business environmental impacts on natural resources and their viability. Environmental variables should represent measurements of natural resources and reflect potential influences on their viability. This would incorporate the contamination impact of water and air quality, greenhouse gas emissions, material recycling rates, water consumption, energy consumption, pollutant gases and substances, waste management of hazards, landfill, and material waste management. The social sustainability dimension's measures incorporate an education level in the local community, equity level, welfare, careers retention, charitable contributions, level of health care and well-being, rate of unemployment, quality of life, per capita violent crimes, relative poverty, and social capital. In brief, the firm's stakeholders are the right party to determine the appropriate set of Triple Bottom Line sustainability measures applicable to subjected business tasks and activities that would remain flexible and dynamic during changes in business circumstances. The firm's stakeholders and experts can develop and establish an adaptive genuine progress indicator (GPI) for the firm/entity with business related variables that incorporate social, economic and

environmental perspectives converted to monetary units and ultimately presented as a monetary value.

Slaper(2019) states that economic variables ought to be variables that deal with the bottom line and the flow of money. It could look at income or expenditures, taxes, business climate factors, employment, and business diversity factors. Environmental variables should represent measurements of natural resources and reflect potential influences to its viability. It could incorporate air and water quality, energy consumption, natural resources, solid and toxic waste, and land use/land cover. Ideally, having long-range trends available for each of the environmental variables would help organizations identify the impacts a project or policy would have on the area. Social variables refer to social dimensions of a community or region and could include measurements of education, equity and access to social resources, health and well-being, quality of life, and social capital.

Habib&Bahar (2014). States that relation between one quantity or performance indicator over another, expressed mathematically and tries to summarize a huge database for one eye view regarding the financial performance of a firm. Financial performance principally reflects business sector outcomes and results that shows overall financial health of the sector over a specific period of time. It indicates how well an entity is utilizing its resources to maximize the shareholders wealth and profitability. However, a complete evaluation of a firm's financial performance takes into accounts, many other different kind of measures. **Market Value Per Share:** The market value per share or fair market value of a stock is the price at which a stock can be readily bought or sold in the current market place. Peavler (2018) in his article state that, the market value per share is the going price of a share stock. A company's worth or total value is called its market capitalization or market cap, and it is represented by the company's stock price multiplied by the number of shares outstanding (Accountancy tool 2019).

Theoretical Review

Two theories are presented in this work Stakeholder theory will help us explain triple bottom line while Stewardship Theory will help us explain financial performance. **Stakeholders Theory:** Freeman and Reed (1983) have identified stakeholders as 'those groups who have an interest in the actions of the Corporation'. In a follow-up study, freeman and Reed (1984) revisited stakeholders theory and redefined stakeholders 'as any individual or group who has an interest in the firm becuase they can affect or is affected by the firm's activities' . From this definition, it is understood that the meaning of stakeholders is very broad indeed, going beyond those that have purely formal or contractual ties to the organsition. other authors subsequently writing on the subject have defined stakeholders similarly. Evan and Freeman (1988) clarified the definition by stating that stakeholders are 'those groups who have a stake in or a claim on the firm'. They hav specifically outlined suppliers, customers, employees, stockholders, the local community and management as the stakeholder groups of an organisation. Casanova (2010) has defined a stakeholder as 'any individual or group who can affect or is *affected* by the actions, decisions, policies, practices, or goals of the organisation'. Stakeholders can be identified by the legitimacy of their claims which is sustantiated by a relationship of exchange between themselves and the organisation, and hence stakeholders include shareholders, creditors, managers, employees, customers, suppliers, local communities and the general public. Hill and Snell, (2008) argued that term stakeholder refers to groups of constituents who have a legitimate claim on the firm. This *legitimacy* is establsihed through the existence of an exchange relationshipo, that is, an identifiable contract can be shown to exist between two parties. Stakehoders include stockholder, creditors, managers, employees, customers, suppliers, local communities and the general public. Each of these groups can be seen as supplying the firm with critical resources (contributions) and in exchange each expects its interests to be satisfied.

Stewardship theory: takes an opposite persepctive, it suggests that the agens are trustworthy and good stewards of the resoruces entursted in them, which makes monitoring unecessay (Donaldson, & Preston, 2005). Since managers are not opportunistic and act in the best interests of owners, they should also be given autonormy based on trust, and this reduces the cost of monitoring and controlling their behaviour. Donaldson, and Preston (2005), (Ihendinihu, 2009) observes, "Organisational role – holders are conceived as being motivated by the need to achieve and exercise responsibility and authority, to gain satisfaction through effectively performing essentially challenging work, and to gain recognition from peers and bosses". According to stewardship theory, the behaviour of the steward is celective, because the steward seeks to achieve the organisation's goals (e.g profitability). This in turn, benefits the principals through the positive effects to profits on Earnings Per Share, Economic Value Added, Net Asset Value Per Share, Market Value Per Share, etc (Davis, Hillier & McCollgan, 2007) managers believe that there interests are aligned with those of the firm's owners. Baily, Harte and Sugdai, (2007) argue that managers also want to protect their reputations as expert decision makers. As a result, managers run the firm a manner that amplifies finanacial performance, includes shareholder returns, as the firms' performance impacts directly on perception of their individual performance.

Empirical Review

Deegan (2002) in his work titled "The Legitimizing Effect of Social and Environmental Disclosures" claims that organizations should provide 'accounts' of not only their financial performance, but also of their social and environmental performance. Moreover, he dismiss the traditional financial reporting frameworks suggestions. He also highlights the apparent absurdity of using market-based mechanisms, such as cap and trade systems for pollutants to solve social and environmental problems that were effectively caused by 'the market'. He having questioning the role of accounting and business educators in instilling some form of personal social responsibility in the minds of students.

Slaper (2018) in an article tittled The Triple Bottom Line: What Is It and How Does It Work?. This article reviews the Triple Bottom Line concept, explains how it can be useful for businesses, policy-makers and economic development practitioners and highlights some current examples of putting the Triple Bottom Line into practice. There is no

universal standard method for calculating the Triple Bottom Line. Neither is there a universally accepted standard for the measures that comprise each of the three Triple Bottom Line categories. This can be viewed as a strength because it allows a user to adapt the general framework to the needs of different entities businesses or nonprofits, different projects or policies infrastructure investment or educational programs, or different geographic boundaries (a city, region or country). Both a business and local government agency may gauge environmental sustainability in the same terms, say reducing the amount of solid waste that goes into landfills, but a local mass transit might measure success in terms of passenger miles, while a for-profit bus company would measure success in terms of earnings per share.

McElroy, (2019) in an article titled "An ode to the triple bottom line" using monocapitalism to multicapitalism to analyze Sustainability performance, as a measure of the degree to which an organization's impacts on vital resources are sustainable. Just as the financial performance of a company can be assessed in terms of its impacts on economic capital and a broader performance be interpreted in terms of impacts on all capitals: natural; human; social; constructed; economic; and intellectual resources. What this shows is not only the important distinction we can make between instrumentalist and sustainability accounting but also the related difference between instrumentalist and context-based metrics. Whereas the latter (context-based metrics) take situational and capital-specific circumstances explicitly into account (such as limits in availability), the former (instrumentalist metrics) do not. Only context-based metrics take the idea of sustainability performance to heart, yet barely a handful of organizations actually do it. Arguably most important in all of this is the need to understand that in order to take effective action, managers and policymakers must have access to information that is both authentic (truly fit for purpose) and reliable. This is no less the case when it comes to managing sustainability performance. In order to measure up, sustainability metrics must be context-based, as must the Triple Bottom Line itself so long as it purports to comprise a measure of sustainability performance (McElrol 2019).

Methodology

This study adopt a cross-sectional and ex-post fasto research design, we will examine the inter-relationship among variables using data obtained from Nigeria Stock Exchange on a cross section of listed manufacturing firms in consumer goods product in specific periods of 2013 to 2017. From the daily official list, it is stated that there are twenty one (21) publicly-owned quoted firms under consumer goods firms (Biliamin, 2017). the predictor variable of this study: Triple bottom line Accounting and the criterion variable: Financial Performance in the secondary data was measured (Baridam, 2011). The Secondary data, the predictor and criterion variables of this study were cardinal information (data derived from the annual report of quoted manufacturing firms in Nigeria as obtained from the Nigerian Stock Exchange (NSE) (Biliamin, 2017). The independent (predictor) variable which is Triple bottom line Accounting is indicated by Economic Cost, EC(Fund Employed), Social Cost, SC (Education Tax), Environmental cost, EVC (Environmental Cost). (OECD 2003; USC 2011; Investopedia.com, 2018). While the dependent (criterion) variable (Financial Performance indicators is, Market Value Per Share). In order to ascertain the truth and consistency of our result, the results obtained will be subjected to statisical test using the parametric statistical procedures. In this regard, the parametric statistical test is to be adopted in testing our hypotheses at a significant level of 0.05. A significant level of 0.05 shows that; there are 5 chances in a hundred that a true null hypothesis would be rejected. This test is said to be significant if the hypothesis is null (H_0) disregarded at 0.05 significant level, while the hypotheses in alternate (H1) accepted. Therefore, the parametric test that is to be used, is Panel Least Square regression and Multiple Regression.

Data Analysis

The descriptive analyses of the variables in this work were conducted for the Industrial Goods in this section. Financial performance of quoted production firms in Nigeria formed a panel studies data; and the descriptive analyses of each of the series were taking to assess the measure of variability obtainable in the series before further estimations will be carried out.

Table 1.1: Result of Descriptive Analysis

	MVPS	EC	EVC	SC
Mean	687.3115	8.20E+08	44791292	4840355.
Median	31.91000	2283489.	1852.000	45335.00
Maximum	8553.000	1.44E+10	6.62E+08	1.01E+08
Minimum	0.000000	0.000000	0.000000	0.000000
Std. Dev.	1857.897	2.96E+09	1.47E+08	17876151
Skewness	3.288539	3.535721	3.626747	3.987730
Kurtosis	12.74684	14.12146	14.63060	18.83964
Jarque-Bera	316.8431	398.0448	430.5678	720.7342
Probability	0.000000	0.000000	0.000000	0.000000
Sum	37802.13	4.51E+10	2.46E+09	2.66E+08
Sum Sq. Dev.	1.86E+08	4.74E+20	1.16E+18	1.73E+16
Observations	55	55	55	55

Source: Researcher's Eviews Output 2019

The four variables in this work were all selected to have coverage of almost all the important indicators of industrial goods in production firms in Nigeria. The selected variables include Market Value Per Share (MVPS) which is the dependent variable while the independents variables are: Economic Cost (EC), Social Cost (SC) and Environmental Cost (EVC). The combination of

these indicators in this research is believed by the researcher to be able to generate the true picture of the production firms in Nigeria.

The result of the descriptive analyses as shown on table 4.8 indicates that the MVPS which is the dependent variable, has a high level of spread as its values range from the minimum value of 0.0000 to maximum of 8553.000. This suggests that the variations in the industrial goods in this study are not normally spread as can be deduced by its median score of 31.91000and mean score of 687 approximately. It indicates that these tripled bottom line have much variation in their behavioral pattern as regarding MVPS. The standard deviation of 1857.897 obtained for the series also suggests that the observations are not closely clustered around the mean.

EC has a low level of spread. This is in consideration of the maximum value of 0.00000000144as against the minimum value of 0.000 as well as the median score of 2283489. This shows that EC of industrial goods has a wide level of variability within the study time frame of 2013 to 2017. It also suggests that EC may have improved over time or fluctuated significantly. EC is also found to have some data points lying away from the mean score of 0.00000082 pointing to the fact that EC has more data points that are close to the minimum score that those closer to the maximum score. The central value of 22604258i.e. the median is far from the maximum value and being a value at the middle, it implies that more than half of the data points on EC are less than or equal to 2283489; hence we can say that the performance of the listed manufacturing firms within the five years period covered by the study is relative low side considering the maximum score of 0.00000000144. The standard deviation of the variable also supports this finding as its value of 0.0000000296 implies a minimal deviation from of the observations from their mean.

EVC is another variable in the industrial goods from the standpoint of frequencies, according to the result obtained on the above table 1.1, EVC ranged from the minimum value of 0.000000 times to maximum of 0.000000662 in a year across the listed manufacturing firms in Nigeria. However, these extreme values will not be enough to make a logical conclusion without recourse to the mid-values as depicted by the mean and median values which are 44791292 and 1852.000 respectively. The mean as a measure of central tendency herein suggests that average industrial goods among our panel has 44791292 in a year. The median value of 1852.000 also indicates the observations are well spread around their mean suggesting that the selected banks in this study have varying degree of EVC frequencies which are not tilted to any one side of the two extremities.

SC is another variable in the industrial goods, from the descriptive analysis result obtained, the minimum value of 0.000 suggests that in a year, at least one of the industrial goods in the study panel has a SC of 0.000. But the maximum value of 0.000000101. The observations for SC appears not to be well dispersed judging from its median score of 45335.00.

Summarily from the results of the descriptive analysis, the data obtained and described above showed a manageable level of spread though they all have a Jarque-Bera probability values of less than 5%, hence the researcher deemed it fit to be utilized for the purpose of analyzing the objectives raised in the initial section of this work.

Panel unit root test was conducted in this section for the industrial goods to check for possible stationarity in the data series prior to the estimation of co-integration test and panel regression of the variables. The Levin, Lin & Chu (LLC) and ADF - Fisher Chi-square methods for common and individual unit root processes respectively were adopted and results for each of the variables at level are shown on table1.2 above.

From the results obtained on table1.2, with respect to all the variables at level, all the series except for asingle variable that have a probability value of less than 5% with the assumption of common unit root processes so it is concluded that one of the variables in this study still possess unit root at level when the assumption of common unit root is made. However, in the second process which assumes an individual unit root process, some variables do not have unit root. Hence we proceed to conduct the test again at first differencing since all the variables are not integrated at the order 1(0).

Panel Unit Root Test Results for Industrial Goods

Table 1.2: Panel Unit Root at Level

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	5.54440	1.0000	10	40
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	2.51922	0.9941	10	40
ADF - Fisher Chi-square	10.2448	0.9635	10	40
PP - Fisher Chi-square	8.08561	0.9913	10	40
** Probabilities for Fisher tests are computed using an asymptotic Chi				
-square distribution. All other tests assume asymptotic normality.				

Source: Researchers' Eviews Output 2019

Table 1.3: Panel Unit Root at First Differencing

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	36.4535	1.0000	10	30
Null: Unit root (assumes individual unit root process)				
ADF - Fisher Chi-square	23.2507	0.2767	10	30
PP - Fisher Chi-square	29.8734	0.0719	10	30
** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.				

Source: Researchers' Eviews Output 2019

The panel unit root conducted again at first differencing yielded the results as shown on table 1.3 above.

The probability values of all the series at first differencing are less than 5%, hence we reject the null hypotheses proposed that the series each possess a unit root thereby accepting the alternative hypotheses for all the series. Thus we conclude that the series are integrated in the order 1(1).

This section deals with the estimation of panel co-integration test of all the variables in this study. The essence is to assess the possibility of having a linear combination of one or more of these variables producing a long run relationship. The study applied the Kao Engle Granger based method to analyze the extent of possible co-integration that exists among the variables; results obtained are presented on table 1.4 below.

Panel Co-integration Analysis Result for Industrial Goods

Table 1.4: Panel Co-integration Test for Industrial Goods

Kao Residual Cointegration Test
Series: D(MVPS) D(EC) D(EVC) D(SC)
Date: 08/18/19 Time: 08:39
Sample: 2013 2017
Included observations: 55
Null Hypothesis: No cointegration
Trend assumption: No deterministic trend
Automatic lag length selection based on SIC with a max lag of 0
Newey-West automatic bandwidth selection and Bartlett kernel

	t-Statistic	Prob.
ADF	-12.75014	0.0000
Residual variance	866596.2	
HAC variance	810935.1	

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(RESID)
Method: Least Squares
Date: 08/18/19 Time: 08:39
Sample (adjusted): 2015 2017
Included observations: 33 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
RESID(-1)	-1.284286	0.087315	-14.70861	0.0000
R-squared	0.869533	Mean dependent var		-120.6788
Adjusted R-squared	0.869533	S.D. dependent var		1095.329
S.E. of regression	395.6353	Akaike info criterion		14.82870
Sum squared resid	5008874.	Schwarz criterion		14.87405
Log likelihood	-243.6735	Hannan-Quinn criter.		14.84396
Durbin-Watson stat	0.403717			

Source: Researchers' Eviews Output 2019

The findings on the table reveal that there could be long run association between Triple Bottom Line Accounting and Financial Performance of Quoted Industrial Goods Production Firms in Nigeria. The t-statistics of the Augmented Dickey-Fuller has a probability of less than 5% so we accept that the variables may possess significant long run relationship and thereby conclude that Economic Cost (EC), Social Cost (SC) and Environmental Cost (EVC) exhibit a long run relationship with their Financial Performance of Quoted Industrial Goods Production Firms in Nigeria.It is therefore logical to assume that Triple Bottom Line Accounting variables can possibly influence Financial Performance of Quoted Industrial Goods Production Firms in Nigeria using the Market Value Per Share model.

Discussion of Industrial Goods Regression Results

The estimation of the nature and direction of relationship between Triple Bottom Line Accounting indicators and Financial Performance of Quoted Production Firms in Nigeria was conducted in this section using multiple regression analysis; and also

adopting the fixed and random effect model for panel data. Using the fixed/random effect model entails making a choice between the fixed effect regression and random effect regression output. This choice was to be made on the basis of the outcome of hausman test probability value.

Table 1.5: Hausman Test for Fixed and Random Effects Models

Correlated Random Effects - Hausman Test
Equation: Untitled
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	5.833942	3	0.1200

** WARNING: estimated cross-section random effects variance is zero.
Cross-section random effects test comparisons:

Variable	Fixed	Random	Var(Diff.)	Prob.
D(EC)	-0.000000	-0.000000	0.000000	0.8894
D(EVC)	0.000013	0.000007	0.000000	0.0158
D(SC)	-0.000001	-0.000004	0.000000	0.4637

Cross-section random effects test equation:
Dependent Variable: D(MVPS)
Method: Panel Least Squares
Date: 08/18/19 Time: 08:42
Sample (adjusted): 2014 2017
Periods included: 4
Cross-sections included: 11
Total panel (balanced) observations: 44

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-142.8111	134.4134	-1.062477	0.2965
D(EC)	-2.56E-08	7.05E-08	-0.362973	0.7192
D(EVC)	1.26E-05	3.05E-06	4.136184	0.0003
D(SC)	-8.39E-07	1.10E-05	-0.076451	0.9396

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.384725	Mean dependent var	30.59955
Adjusted R-squared	0.118105	S.D. dependent var	884.0655
S.E. of regression	830.2193	Akaike info criterion	16.53463
Sum squared resid	20677922	Schwarz criterion	17.10232
Log likelihood	-349.7618	Hannan-Quinn criter.	16.74516
F-statistic	1.442973	Durbin-Watson stat	2.432815
Prob(F-statistic)	0.197513		

Source: Researcher's Eviews Computation 2019

The Hausmantest proposes a set of hypothesis in the null and alternative forms as follows:
H0: Random effect regression model is more appropriate
H1: Fixed effect regression model is more appropriate.

According to the result obtained for the hausman test for manufacturing sector on table 1.6 above, there is a significant result for the Chi-square statistics of the hausman test.

The null hypothesis of the above test proposes the acceptance of the random effect model which assumes a mean value for the intercepts of the various listed manufacturing firms whereas the alternative hypothesis suggests that the fixed effect regression model is appropriate including the assumption that though intercepts may differ among the various firms, it remains time invariant.

However, the result of the Hausman test having a probability value of less than 5% accepted benchmark will lead to acceptance of the alternative hypothesis and conclusion that fixed effect regression model is the appropriate model for this analysis. Based on the conclusion of the hausman test results on 1.5 above, the regression result which was conducted using fixed effect model was adopted and shown.

Table 1.6 contains the regression result obtained for all the Triple Bottom Line Accounting indicators in this study and Financial Performance of Quoted Production Firms in Nigeria. The result shows that D(EC) has a negative and significant effect on Financial Performance of Quoted Production Firms in Nigeria. This is because the beta coefficient of EC at the lag of one year yields a negative value which suggests that D(EC) attracts a direct association of Financial Performance of Quoted Production Firms.

Table 1.6: Panel Multiple Regression of Triple Bottom Line on industrial goods

Cross-section random effects test equation:
Dependent Variable: D(MVPS)
Method: Panel Least Squares
Date: 08/18/19 Time: 08:42
Sample (adjusted): 2014 2017
Periods included: 4
Cross-sections included: 11
Total panel (balanced) observations: 44

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-142.8111	134.4134	-1.062477	0.2965
D(EC)	-2.56E-08	7.05E-08	-0.362973	0.7192
D(EVC)	1.26E-05	3.05E-06	4.136184	0.0003
D(SC)	-8.39E-07	1.10E-05	-0.076451	0.9396
Effects Specification				
Cross-section fixed (dummy variables)				
R-squared	0.384725	Mean dependent var		30.59955
Adjusted R-squared	0.118105	S.D. dependent var		884.0655
S.E. of regression	830.2193	Akaike info criterion		16.53463
Sum squared resid	20677922	Schwarz criterion		17.10232
Log likelihood	-349.7618	Hannan-Quinn criter.		16.74516
F-statistic	1.442973	Durbin-Watson stat		2.432815
Prob(F-statistic)	0.197513			

Source: Researcher's Eviews Computations 2019

The results on table 1.6 above shows the regression result obtained for Triple Bottom Line Accounting in this study and Financial Performance of Quoted Production Firms in Nigeria. The result shows that Social Cost (SC) of these firms as an integral part of Triple Bottom Line Accounting have a positive effect on Financial Performance of Quoted Production Firms in Nigeria. This is because the beta coefficient of EC at the lag of three years has a positive result which suggests that Social Cost (SC) of the Triple Bottom Line Accounting moves in the same direction with Financial Performance of Quoted Production Firms in Nigeria. The significance of this result is 72% as shown by the probability value of the Economic Cost (EC) t-statistics.

So the study argues on the merit of this finding that Financial Performance of Listed Manufacturing Firms in Nigeria of selected industrial goods is directly responsive to their Economic Cost (EC) albeit at a non-statistically significant level. So we conclude that Economic Cost (EC) has a negative but not significant effect on the Financial Performance of Listed Manufacturing Firms in Nigeria.

The Environmental Cost (EVC) is another variable of Triple Bottom Line Accounting, it has a positive significant effect on the Financial Performance of Quoted Production Firms in this study. The findings on table 1.6 above suggests that increased frequencies of Environmental Cost (EVC) for the Triple Bottom Line Accounting in this study are associated by a corresponding increase in the Financial Performance of Quoted Production Firms.

Social Cost (SC) has a negative and non-significant effect on the Financial Performance of Quoted Production Firms as evidenced by the beta coefficient value of –0.00000839. This implies that Social Cost (SC) of Triple Bottom Line Accounting does not move together with their Financial Performance of Quoted Production Firms.

However, the residual statistics of the multiple regression model suggests that our regression model which regressed Triple Bottom Line Accounting on Financial Performance of Quoted Production Firms is well-fitted. This is because the r-squared outcome of 38% underscores the ability of the selected explanatory variables to predict changes that occur in the Financial Performance of Quoted Production Firms. The probability value of the f-statistics is significant at 1% lending credibility to regression equation and powers of the independent variables in predicting changes that occur in the Financial Performance of Quoted Production Firms in Nigeria of the selected industrial goods. The regression model is also supported by the outcome of the Durbin-Watson statistics is in the neighbourhood of 2 indicating that possible absence of autocorrelation in the regression model. Hence the study argues that Triple Bottom Line Accounting attributes jointly explains the variations that occur in Financial Performance of Quoted Production Firms to a significant extent.

CONCLUSION

It is clear that Triple Bottom Line Accounting jointly have significant influence on Financial Performance of Quoted Production Firms in Nigeria, it was established that Economic Cost(EC) and Environmental Cost (EVC) have a positive and significant effect on the variables of financial performance of Quoted Production firms in Nigeria while Social Cost have negative and non-significant effect on the variable of financial performance of Quoted Production firms in Nigeria. Hence, the following recommendations are made.

The regulatory authorities, such as the Financial Reporting Council (FRC), Nigeria Stock Exchange (NSE) and Securities and Exchange Commission (SEC) to be able to issue out necessary compliance directives and improve their compliance monitoring mechanisms to ensure a reasonable level of compliance by all companies to present their account reports in compliance with triple bottom line accounting pattern. Business management and managers should adopt triple bottom line as a guide to report to stakeholder on the allocation of benefits not only to shareholders but to other stake holders.

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