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Total Quality Management and Transformation of Selected Corporate Organizations Quoted in the Nigerian Stock Exchange

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Abstract:
This study assessed the effect of Total Quality Management principles on the Profit after Tax of selected corporate organizations quoted on the Nigerian Stock Exchange. Exploratory research design was employed. Secondary data were obtained from the Nigerian Stock Exchange Fact Book (2011 and 2013). Linear regression and correlation analytical tools were used. Findings revealed that TQM principles measured by turnover have significant positive and negative effects on the Profit after Tax of the focused firms. The policy implication is that any robust transformation of corporate organizations in Nigeria must ensure comprehensive execution of TQM principles in all strata of the organizations.

Keywords: *Total quality management (TQM), transformation, corporate organizations, Nigerian stock exchange, TQM principles*

1. Introduction

The concept of quality is an important issue in all human endeavours which constitute a driving force to organizational transformation efforts and activities (Umoeshet, 2012). Total Quality Management (TQM) was adopted by United States of America in the 1990s in response to the increased global competition from Japanese products, motor vehicles, household appliances and electronics. This trend of quality popularized by Deming and Juran following Second World War II aftermath, became strong in Europe, Australia and other parts of the globe (Brown, 2013). TQM has become pervasive and widely adopted in manufacturing, government, healthcare and banking service subsectors of the developed economics (Fotopoulos and Psomas, 2009).

TQM is a continuous effort to improve quality and achieve customer satisfaction. It is an organizational strategy considered as a change programme to achieve excellence by producing quality service as defined by the customer (Garg, 2008). Transformation is a significant positive change in the natural phenomena, institutions projects, ideas and processes which accrue integrated benefits to corporate organizations. Corporate organizations are large business or non-business entities that have been registered by the Corporate Affairs Commission in Nigeria. They have legal rights, assets and liabilities that are separated from owners and employees. Nigeria Stock Exchange is a market where quoted companies buy or sell shares, stocks, bonds and securities (en.wikipedia.org).

In recent times, corporate organizations are challenged by increasing demands and expectations from customers whose tastes appear to have changed as a result of new inventions in technology and quality service delivery. They compete with goods and services from all over the world and satisfy educated and sophisticated customers. Besides, the fall-outs of a deregulated global competition have offered customers choices among various alternatives (Irechukwu, 2010). New competitive strategies have rendered established management doctrines and conventional methods of products/service development and delivery obsolete. The rule of the game today in all industry segments is continuous improvement of processes, systems and skills. But many organizations do not possess a keen sense of urgency required to reinvent the needs of the current business model. No organization can afford to be competitive if it does not continuously improve on its products, services, processes and people (NoSakhare, 2000).

Against this background and problem statement, the general objective of the study is to assess the relationship between Total Quality Management and transformation of selected corporate organizations quoted in the Nigeria Stock Exchange. The specific objective is to determine the effect of TQM principles on the financial performance (Profit after Tax) of selected corporate organizations quoted in the Nigerian Stock Exchange. Therefore, the directional hypothesis states that there is significant effect of TQM principles on the Profit after Tax of selected corporate organizations quoted in the Nigerian Stock Exchange.

2. Conceptual and Theoretical Issues

2.1. Concept of Total Quality Management
There are varied definitions of TQM as evident in the literature. TQM is a strategic architecture requiring evaluation and refinement of continuous improvement practices in all areas of the productivity process (Salami and Ufoma, 2013). It is the management of total quality that tries to achieve quality in satisfying the needs of the shareholders, quality of products and services to satisfy customers' needs, professional and personal life of employees of the organization (Flores, 2008). TQM is a means of entrenching participative management besides customer satisfaction, continuous improvement and empowerment. It is a comprehensive and structured approach to organizational management that seeks to improve the quality of products and services through ongoing refinements in response to continuous feedback (Powell, 2002).

2.2. Transformation
Transformation implies a quantitative and holistic development intended to correct the flaws in the country's drive for continuity, consistency and commitment to state objectives (Nzewi, Nzewi and Okerekeotti (2012). Dasko and Sheinberg (2005) aver that transformation of organizations occurs when leaders create a vision and a system to continually question and challenge beliefs, assumptions, patterns, habits and paradigms.

2.3. Total Quality Management Principles and Financial Performance (Profit After Tax)
The main principles of Total Quality Management are focused on customer, continuous improvement, making decisions based on facts, participation of all stakeholders, team approach and error preventions (Mubaraki, 2012). However, Evans (2005) added empowerment and problem solving to TQM principles. The study of Irechukwu (2010) concluded that the level of success (financial performance) among organizations that have implemented TQM in Nigeria is high, considering the fact that three out of every four that have implemented were successful.

2.4. Theoretical Framework
The theoretical framework for this study is anchored on transformation theory propounded by Deming (1986). Transformation theory states that a profound change in structure creates something new and transformation occurs through a system of continual questioning, challenging, exploration, discovery, evaluation, testing and creation of an organization's management theory and application, beginning with the realization that the organizations current thinking is incomplete. Deming argues that a system of profound knowledge includes system thinking, understanding, variation, theory of knowledge and psychology. This framework captures the TQM principles and financial performance (Profit After Tax) of Selected Organizations in this study.

2.5. Empirical Review of Related Literature
A number of scholars have investigated the relationship between TQM and performance of corporate organizations. Amasaka (2013) evaluated the development of Total Quality Management System for transforming technology into effective management strategy. Applying descriptive survey method of research, the findings revealed that the biggest impact on the world in the second half of the 20^{th} century was the Toyota Production System which used the famous TQM in the Japanese production System. He concluded that to be successful in the future, a global marketer must develop an excellent quality management system that can impress consumers and continuously provide excellent quality products in a timely manner through corporate management.

In a related study, Ejumudo (2012) assessed the practicability and efficiency of TQM in the Nigerian Public Sector. Using secondary sources of data, he found that TQM was practicable. He reasoned that its reality would require a comprehensive and pragmatic non-political administrative restructuring, re-engineering and re-organization to meet the changing demands of the sector. In addition, institutional support and sustained effort to transform reform initiatives into concrete reality, customer focus, attitudinal change, cost consciousness, modern management practices and genial climate were essential.

Geetika and Nandan (2010) studied the determinants of customer satisfaction and service quality in a Railway Platforms in India. Using survey research design to identify components of service quality, they found that out of the five factors that determine satisfaction, refreshment and behavioural factor were considered most important.

In a similar study, Al-Hawari, Hartley and Ward (2005) explored measuring Banks' Automated Service Quality: A Confirmatory Factor Analysis. Employing survey research method, their findings revealed that the identified factors of bank automated service quality were validated. The researchers proposed a conceptual model of automated service quality to rhyme with customers' perception.

Bexley (2005) appraised expectations and perception in the delivery of financial services in community banks in Southern part of United States of America. Survey research method was utilized to predict consumer expectations in service delivery. The study showed that the three prime components of customer satisfaction hinged on perceived quality, value and customer expectations. The researcher concluded that perception was high, but not as high as expectation.

Awolusi (2013) assessed the effect of total quality management on customer service management in the Nigerian banking industry. Using survey research method and Malcolm Baldrige National Quality Award (2001) framework, the results revealed that for TQM to be successfully implemented, workers must be allowed to set goals and performance monitoring, effective communication, commitment and support from the top management were essential. The model provides predictive implications on improved customer service management.

Irefin, Abdul-Azeeze and Hammed (2011) evaluated the effect of TQM practices on organizational performance in Nigeria. Employing a cross sectional survey on middle and senior level managers of focused organizations, their findings revealed that "soft" TQM elements were more significant to organizational performance than "hand" TQM elements.

In a related development, Oluseye, Borishade, Adeniyi and Ezeugwa (2014) appraised TQM and Perceived Corporate Image in Higher Education in Nigeria. Using inferential statistics (regression, Pearson correlation and T-test), their findings showed that quality management has an effect on perceived corporate image. They recommended concerted efforts of stakeholders towards improving the quality standards of Nigerian Universities.

However, it is observed from the empirical review that none of the scholars appeared not to have studied the effect of TQM principles on Profit after Tax of organizations from different sectors of the Nigerian economy which have made continuous Profit After Tax for ten years. This constitutes the lacunae in knowledge that this study has filled.

3. Methods

This study utilized exploratory research design so as to determine the effect of TQM principles on the Profit After Tax of selected organizations quoted in the Nigerian Stock Exchange. Exploratory research is important for discovering ideas and insights into the natural phenomena (Ezejelue, Ogwu and Nkamnebe, 2008). The study employed linear regression statistical tool to assess the relationship between Profit after Tax (Dependent Variable) of four selected firms in the Nigerian Stock Exchange and their turnover (independent variable). The firms were selected based on 10 years of observed consistent profit making (PAT) in different sectors of the economy. The names of the firms selected are:

S/No.	Economic Sector	Name of Firms	No. of years of Profit After Tax	No. of years of Turnover
1.	Construction/Real Estate	Julius Berger Nigeria, Plc.	10	10
2.	Consumer Goods	Guinness Nigeria, Plc.	10	10
3.	Industrial Goods	Berger Paints Nigeria, Plc.	10	10
4.	Oil and Gas	Total Nigeria, Plc.	10	10

Table 1: Names of the selected firms and their sectors
Source: The Nigerian Stock Exchange FactBook (2011) and (2013)

Time series data were sources from the Nigerian Stock Exchange FactBook (2011 & 2013). The data are stated below:

S/No	Years	Julius Berger Nigeria, Plc PAT (₦,million)	Guinness Nigeria Plc. PAT (₦,million)	Berger Paints Plc PAT (₦,million)	Total Nigeria Plc PAT (₦,million)	Julius Berger Nigerian Plc Turnover	Guinness Nigeria Plc Turnover	Berger Paints Plc Turnover	Total Nigeria Plc. Turnover
1.	2005	1798521*	11527661*	114346*	3388422*	83091452*	68322363*	2370231*	147108468*
2.	2006	1119047	12031043	81678	2516693	56868100	73528824	2300615	126573956
3.	2007	1768252	10691060	112619	3255410	18377640	62265413	2275356	137339503
4.	2008	2508265	11860880	148740	4393162	116028617	69172852	2534721	177411946
5.	2009	3300131	13541189	193276	3968059	150358257	89148207	2376847	178570273
6.	2010	2804105	13736359	442463	5436638	173690552	109366975	2756608	160604104
7.	2011	4411998	17927934	250191	3813202	169413371	123663125	2574359	173948954
8.	2012	8193543	14671195	180240	4670917	201565276	126288184	2513664	217843731
9.	2013	5136549*	15445163*	290965*	4640252*	181556400*	490772761*	2614877*	184132263*
10	2014	5914030*	16014764*	240465*	4374790*	184178349*	246908023*	2567633*	191974983*
	VAR 00001	VAR 00002	VAR 00003	VAR 00004	VAR 00005	VAR 00006	VAR 00007	VAR 00008	VAR 00009

Table 2: Profit After Tax and Turnover of Selected Firms
** Provisional*
Source: The Nigerian Stock Exchange FactBook (2011 & 2013)

To determine the effect of TQM Principles on the profit After Tax of the selected organizations, the study formulated a linear model as follows:

$$Y = \alpha_o + bx_1 + bx_2 + bx_3 + e_t \dots\dots\dots\dots\dots\dots\dots (i)$$
$$PAT = f(a_o + b_1 To + b_2 TW + b_3 EP)_{e_t} \dots\dots\dots\dots (ii)$$

Where:
PAT = (Profit After Tax) measures the financial performance of the selected firms and it serves as a proxy for continuous improvement.
a_o (alpha) represents the intercept (regression line)
b_1, b_2 and b_3 represent the parameter estimates and the slope of the model.
TO (Turnover) measures customer satisfaction
TW = Team work) measures the Board of Directors
EP = Empowerment) serves as a proxy for structure of shareholding.
e_t (Error term) measures the probability of statistical error.
However, since the data for team work and empowerment were not recorded in explicit naira format, only turnover was used to explore the relationship between the Profit After Tax and the turnover of the focused firms.

4. Hypothesis Testing and Findings
To test the hypothesis which states that there is a significant effect of TQM principles on the Profit After Tax of selected corporate organizations quoted in the Nigerian Stock exchange, the statistical Package for Social Sciences (SPSS) software version 20 was utilized. The model summary and correlation results are presented in the tables below:

					Change Statistics		
Model	R	R square	Adjusted R square	Std. Error of the Estimate	R square change	F change	df1
1.	a .935	.874	.811	a 62600.0328	-874	13.849	3

Table 3: Model Summary of Linear Regression Result
a. Predictors (Constant) VAR00009, VAR00007, VAR 0008
b. Dependent variable: VAR 00002
Source: Computed from Table 2 data using SPSS version 20 software.

From the table above, it is obvious that at one degree of freedom (n-1), the R Square (coefficient of determination) is 0.87 (87%), which indicated the percentage of proportion of variation in dependent variable (PAT) accounted by the independent variable (turnover) of the selected firms. Adjusted R square is 0.81 (81%), which represents the actual variation in the data that appeared in the regression model. The F-ratio change is 13.849, which is low and it measures the probability of chance departure from a straight line.

Model	**Change Statistics**		**Durbin-Watson**
	df2	Sig. F change	
1.	6	.004	1.574

Table 4: Model Summary of Linear Regression Result
a. Predictors (constant) VAR 00009, VAR 00007, VAR 00008
b. Dependent variable: VAR 00002
Source: Computed from Table 2 Data using SPSS Version 20 Software.

Table 4 above reveals that at 2 degrees of freedom (n-2) the f-ratio is significant at 0.004, which is associated with 1.574 results for Durbin-Watson. This indicates that the regression model assumes that the error deviations are not correlated, since the range lies between 1.5-2.5 points.

					Change Statistics		
Model	**R**	**R square**	**Adjusted R Square**	**Std. Error of the Estimate**	**R Square Change**	**F. Change**	**df 1**
1.	a .795	.632	.447	1701768.357	.632	3.429	3

Table 5: Model Summary of Linear Regression Result
a. Predictors (Constant). VAR 00009, VAR 00006, VAR 00008
b. Dependent Variable: VAR 00003
Source: Computed from Table 2, Data using SPSS Version 20 Software

It is observed from Table 5 above that at 1 degree of freedom (n-1), the R-square is 0.63 (63%), which shows the percentage of proportion of variation in dependent variable (PAT) accounted by the independent variables (turnover) of the selected organizations

Adjusted R Square is 0.45 (45%) and it represents the real variation in dependent variable caused by the independent variable. Comparing this variation (45%) with variation in Table 3 (81%), it is evident that the effect is much higher in the latter.

	Change Statistics		
Model	df_2	Sig.F. Change	Durbin-Watson
1	6	0.093	3.149

Table 6: Model Summary of Linear Regression Result

a. Predictors: (Constant) VAR 00009, VAR 00006, VAR 0000 8

b. Dependent Variable: VAR 00003

Source: Computed from Table 2 Data using SPSS Version 20 Software

From Table 6 above, at 2 degrees of freedom (n-2), the F-ration change is not significant (0.093) and it registers 3.149 points for Durbin-Watson. This indicates that there is no case for auto-correlation.

					Change Statistics		
Model	R	R square	Adjusted R square	Std. error of the Estimates	R square change	F change	df 1
1	.95%	.915	.872	38298.928	.915	21.396	3

Table 7: Model Summary of Linear Regression Result

a. Predictors (constant), VAR 00006, VAR 00008, VAR 00009

b. Dependent variable: VAR 00004

Source: Computed from Table 2 Data using SPSS version 20 Software

Table 7, reveals that at 1 degree of freedom (n.-1), the R square is 0.92 (92%). This shows percentage of proportion of variation in dependent variable (PAT) accounted by the independent variable (turnover). Adjusted R square is 0.87 (87%) and it represents the actual variation in the regression model.

Model	**df_2**	**Change Statistics Sig. F. Change**	**Durbin-Watson**
1	6	.001	1.461

Table 8: Model Summary of Linear Regression Result

Source: Computed from Table 2 Data using SPSS version 20 Software

From Table 8 above, at 2 degree of freedom (n-2), the F-ratio change is significant at 0.001 and is associated with 1.461 points for Durbin-Watson. There is no constraint for auto-correlation.

					Change Statistics		
Model	R	R square	Adjusted R square	Std. error of the Estimates	R square change	F change	df 1
1	.891[a]	.794	.690	467800.460	.794	7.692	3

Table 9: Model Summary of Linear Regression Result

a. Predictors (constant), VAR 00008, VAR 00006, VAR 00007

b. Dependent variable: VAR 00005

Source: Computed from Table 2 Data using SPSS version 20 Software

From Table 8, it is observed that at 1 degree of freedom (n-1), R Square is 0.79 (79%), which shows the percentage of proportion of variation, in dependent variable (PAT), accounted by the independent variable (turnover). Adjusted R square is 0.69 (69%) and it represents the actual variation in the figures that appeared in the regression model.

Dependent variables	Independent Variables			
	VAR 00006	VAR 00007	VAR 00008	VAR 00009
VAR 00002 Pearson Correlation	-.048	.476	.460	.925**
Sig (2-tailed)	.896	.165	.181	.000
N	10	10	10	10
VAR 00003 Pearson Correlation	-.161	.516	.617	.613
Sig (2-tailed)	.658	.127	.058	.060
N	10	10	10	10
VAR 00004 Pearson Correlation	-.071	.412	.902**	.331
Sig (2-tailed)	.844	.236	.000	.350
N	10	10	10	10
VAR 00005 Pearson Correlation	.283	.384	.888**	.683*
Sig (2-tailed)	.428	.273	.001	.030
N	10	10	10	10

Table 10: Correlation of PAT and Turnover of the selected Firms
*** Correlation is significant at the 0.01 level (2-tailed)*
** Correlation is significant at the 0.05 level (2-tailed)*
Source: Computed from Table 2 Data using SPSS Version 20 Software

Table 10 shows that the correlation of PAT of Julius Berger Nigeria, Plc and the turnover of the four firms, reveals that correlation is significant at 0.01 level in the turnover recorded by VAR 00009 (Total Nigerian, Plc). However, it has negative correlation (-0.048) with the turnover of Julius Berger, Plc and low positive correlation with the turnover of Guinness Nigeria, Plc and Berger Paint Nigeria, Plc.

The correlation result of PAT of Guinness Nigerian, Plc and the turnover of the four firms indicates that there is no significant relation. Conversely, the correlation of PAT of Berger Paints Plc and the turnover of the selected organizations reveals that correlation is significant at 0.01 level in the turnover of Berger Paint Nigeria, Plc. In addition, there is a negative correlation (-.071) in the turnover of Julius Berger.

Findings from Table 10 reveal that correlation result is significant at 0.01 and 0.05 levels in the turnover of Berger Paint Nigeria, Plc and Total Nigeria Plc.

5. Discussion of Result and Policy Implications

The linear regression result which indicates that the Profit After Tax is significant at 0.004 f ratio value has some implications. The rejection of the null hypothesis and subsequent acceptance of the alternate hypothesis, which states that there is a significant effect of TQM principles on the Profit After Tax of the selected firms corroborates the prior study of Irefin, Abdul-Azeez and Hammed (2011). Their findings revealed that the TQM elements were more significant to organizational performance.

Findings of 87 percent high coefficient of determination (R square) indicate that there is a linkage between Profit After Tax and turnover of the focused organizations. The combined effect of all the explanatory variables would affect the dependent variable by such greater percent. This result is consistent with the research findings of Amasaka (2013) which showed that the biggest impact on the world in the second half of the 20^{th} century was the Toyota Production System which used the famous TQM in the Japanese Production System.

The regression result of PAT of Guinness Nigerian Plc and the turnover of the selected organizations is not significant (0.093). Possibly, the application of TQM principles in the firm could be constrained by some internal factors and external macro-environmental constraints. This calls for management review of corporate goals, visions, mission and objective in line with the TQM principles.

The combined correlation of PAT and turnover of the four selected organizations indicate negative correlation in some firms and positive correlation in others. Such variations in effect indicate that TQM could not be executed comprehensively in all the focused organizations. The implication for the policy makers could be the continuous monitoring of the activities of corporate organizations quoted in the Nigeria Stock Exchange so as to ensure quality delivery of products for customer satisfaction and increased turnover and Profit after Tax.

6. Conclusion

Following the data gathering, hypothesis testing, analysis of findings and discussion, we conclude that the Total Quality Management Principles have a significant effect on the Profit After Tax of the selected corporate organizations quoted on the Nigerian Stock exchange. Therefore, this justifies the nexus between TQM principles and Profit After Tax of selected firms quoted on the Nigerian Stock Exchange.

7. Recommendations

Sequel to the findings, it is recommended that all corporate organizations listed in the Nigerian Stock Exchange, should adopt proactive measures to ensure thorough and effective implementation of TQM principles. The internal environmental constraints and the external challenges should be managed through effective and efficient strategic planning so as to enhance the transformation of corporate organizations in Nigeria.

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