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MODELLING NIGERIAN PUBLIC UNIVERSITIES PERFORMANCE THROUGH TOTAL QUALITY MANAGEMENT

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ABSTRACT

The aim of this research is to examine the effects of total quality management on the performance of public universities in Nigeria. University education serves as a means of producing individuals who possess the academic and mental capability, which is expected to help in the production of high-level manpower to the various sectors of the economy. To answer the research questions, one hypothesis is formulated: (a) there is a significant relationship between total quality management and performance of public universities in Nigeria. Data were collected by means of self-administration of a questionnaire completed by academic leaders randomly selected. The questionnaires developed from the prior research were used to measure the total quality management, while performance measurement was based on subjective evaluation involving self-reported measures. The findings revealed that significant relationship exists between total quality management and performance of public universities in Nigeria. The finding of this study would be of relevance to policymakers, such the National Universities Commission (NUC) being the regulator of university education in Nigeria. University Vice Chancellors as administrators can benefit from the study's outcome. The Tertiary Education Trust Fund (TETFUND) is also a beneficiary of the study finding as it will guide them in resource allocation across the universities. The study recommends that future studies should be conducted on other variables that can predict university performance.

Keywords: *PLS-SEM; total quality management; public universities; performance; Nigeria.*

INTRODUCTION

Education is regarded as a foundation for every society (developed or developing) and an instrument for economic, technological and political development of a nation. Tertiary education can be viewed from the perceptive of governments at federal and state levels as an investment in human capital development with the aim of acquainting individuals with relevant skills and knowledge, attitudinal change that will contributes immensely towards the nation's wealth and development (Adeoye & Oluwole, 2014). Part of the mandate of Nigerian universities is to develop individuals ethically and physically and confer various degrees on

them who are found to be worthy in learning and character to prepare them to assume leadership positions in their immediate and extended society (Idogho, 2011). Well-educated citizens can contribute far more colossally toward the growth and development of a nation's economy (Olaleke, Tairat, & Adeniyi, 2014). Many educationists view TQM practices and presume that the philosophy applies only to profit making organizations. However, the concept goes beyond that as it is relevant to service organizations, corporations, and universities (Salima &Ufoma, 2013). Education particularly at higher institution level has been driven by some forces such as increasing costs, global competition, struggle to survive, political instability, globalization and many more. Other consist demand for accountability by funding agencies, lack of qualified workforce, inefficient educational management system, accrediting body and the general public, increasing of customers anticipation about quality, swift technological changes etc. (Lutfi, 2014). Similarly, there is intense competition universally with respect to students' enrolment, faculty proficiency and research accomplishment. Hence, universities administrators should be accountable for managing change, financial control and quality control since public universities rely immensely on the funds supplied to them by the government as they are funded directly from the nation's resources (Iwiyisi & Maduabum, 2014; Joshua & Olufemi, 2013; Salami & Ufoma, 2013). For this reason, the need for total quality management vis-à-vis performance of Nigerian public Universities is imperative (Sunday, 2011; Tahidu, Bawa & Abubakari, 2014; Oyewumi & Fatoki, 2015; Aliyu, Abubakar & Yakasai, 2016).

TQM is applicable to universities globally and it has been proven successful by many organizations, which is used to formulate the mission statement such as to provide educational training, research for development taking into consideration of the cultural heritage of the host community (Norhayati, Shalini, Muhamad, & Mohd, Rozita, 2012). Education administrators are of the view that Deming's TQM concepts offers guiding principles required for educational reform (Oyewumi & Fatoki, 2015). Edwards has proved so powerful that educationists want to apply TQM in schools. Higher Institutions of learning particularly Universities have been sluggish to view the value of applying TQM to enhance the management of the university (Salami & Ufoma, 2013). De Montfort University has undergone ambitious revolution, almost threefold in size to 25,000 students and fourfold it campuses. It has become one of the largest universities in the UK and the fastest growing in Western Europe. The university became one of the biggest universities in the United Kingdom and the quickest growing in Western Europe (Norhayat et al, 2012). Similarly, Oregon State University in 1990 has experienced marvelous triumph in enhancing its the operations of the university in terms of decreasing the average length of remodeling projects by 23 percent due to recommendations of TQM as its management philosophy (Winn & Green, 1998). However, it noteworthy and touching that for the past three decades the educational system in Nigeria continuous to witness immense quantitative growth at the expense of qualitative development (Olaleke, Tairat, & Adeniyi, 2014).

United Nations Educational Scientific and Cultural Organization (UNESCO) recommended that standard budget allocation to educational sector stand at 26 percent, this percentage has never been attained in the history of Nigeria as national budget allocation to education (Olabanji, Abayomi, 2013; Aliyu, Abubakar & Yakasai, 2016). Thus, several studies conducted to look at total quality management and performance appeared to produce a mixed findings. Yusof and Fayzollahi, Shirmohammadi and Litifian (2013); Jaafreh and Al –abedallat (2013); Yunis, Jung and Chen (2013); Narimani, Tabaein, Khanjani and Soltani (2014); Al – Ettayen and Al – Zubi (2015); Topalovic (2015) reported a significant and positive association between the constructs. The study of McCabe and Wilkinson (1997) found a negative association between TQM and organizational performance. Yunis et al., (2013) suggested a replication of TQM strategy and performance relationship in different countries and context, this is also in line with the recommendation of Jaafreh and Al – Abedallat (2013) and Kay et al. (2016) which

suggest a further examination of TQM to performance relationship in other sectors. Therefore, poor academic performance among the Nigerian public universities is an issue of staid concern with both practical and theoretical justification which requires empirical investigation considering the role played by the sector toward overall sustainable economic development. Therefore, the present study is an effort to examined total quality management and performance among Nigerian public universities.

LITERATURE REVIEW

Total Quality Management and Performance

Based on the literature consulted, there are a number of definitions offered by different scholars in different situations on the total quality management concepts. According to Dale (2003), Flynn, Schroeder and Sakakibara (1994) viewed TQM as the management philosophy that ensures the cooperation and participation of all individuals in an organization toward the production of better products and services that can satisfy customers' needs and wants, which exceed their expectations. Similarly, Anderson, Rungtusanatham and Schroeder (1994) viewed the TQM strategy as a holistic method for the organization overall quality through major principles such as leadership, continuous improvement, effective process management, product and / or service design, customer and / or satisfaction involvement, and employee involvement and training. However, TQM seen as a holistic approach for searching of new ways towards improving operations, leading to the satisfactions of customers' needs and expectations, higher quality product, competitive advantage as well as enhancing firm performance. It is an approach that strives to attain and sustain long term organization success by encouraging workers engagement and feedback, meeting customers' requirements, respecting societal values and beliefs, as well as observing rules and regulations (Lutfi, 2014; Olabanji & Abayomi, 2013; Aliyu, Abubakar & Yakasai, 2016).

Many studies have attempted to establish the association between total quality management and performance. Wang, Chen and Chen (2012); Fayzollahi, Shirmohammadi and Litifian (2013); Jaafreh and Al –Abedallat (2013); Yunis, Jung and Chen (2013); Narimani, Tabaein, Khanjani and Soltani (2014); Golmohammadi, Zohoori, Hosseinipour and Mehdizadeh (2014), Al – Ettayen and Al – Zubi (2015); Topalovic (2015) reported a significant and positive association between the constructs. The study of McCabe and Wilkinson (1997) found a negative association between TQM and organizational performance. Similarly, Abdul Azeez, Abbas, Mansur, (2014) concluded that much is yet to be achieved in the studied universities in the area of continuous quality improvement in infrastructural maintenance. Awatif and Mohammad (2013) study indicated no statistically significant differences in effect of the faculty members on the teaching skills in the light of the criteria of TQM in the fields of implementation, evaluation and communication due to the variable of gender. There was no relationship between the quality of the practices of the institutions and their level of effectiveness in the work of Paul (2013) on TQM in educational institutions. Based on these arguments, this study proposes the following hypothesis:

H1: There is a positive relationship between total quality management and performance of Nigerian public universities.

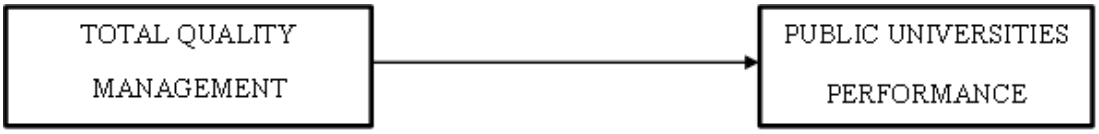

Figure 1: Research Framework

RESEARCH METHODOLOGY

The research employed quantitative methodology, where numerical value was used to represent the phenomenon being studied (Hair, Black, Babin, & Anderson, 2010). The study also adopted survey research design. A survey method is adopted where a research is trying to assess thoughts, feelings, and opinions about a given situation through collecting primary data from the respondents (Fisher, 2010; Sekaran & Bougie 2010; Saunders, Lewis, & Thornhill, 2011; Creswell, 2012).

The population comprised of all academic leaders from the 15 public owned universities operating in the north western Nigeria amounting to 609. It is made up of all academic staff who hold the administrative position of vice chancellors, deputy vice chancellors, deans, head of academic departments, programme chairpersons or programme directors/coordinators, university's excellence centres/Institute Directors and all their deputies in the entire 15 North – western part of Nigeria. The sample size is drawn from Kriejcie and Morgan (1970) table for sample size determination, based on its 234 academic leaders were chosen. Hair, Wolfinbarger and Ortinal (2008) suggested an increase in the sample size in order to take care of none response issue. Therefore a total of 400 questionnaires were administered, out of which 216 were duly completed and returned representing 54 percent. The data collection took about 3 month, March, to June, 2016. However, a total of 198 questions were finally retained for analysis representing 49.5 percent. A total of 18 questionnaires were removed from the analysis due to the issues relating to both univeriate and multivariate outliers.

Table 1: Questionnaire Distribution and Retention

Item	Frequency	Percentage
Distributed Questionnaires	400	100
Returned Questionnaires	216	54
Rejected Questionnaires	18	4.5
Retained Questionnaires	198	49.5

Therefore, a total of 198 respondents make the sample for this study showing a good response rate of 49.5 percent which is considered adequate (Shehu, 2014; Shehu & Mahmood, 2014a). Self-report technique was used to measure performance, and subjective assessment was employed because it was expected that the academic leaders would be unwilling to disclose full financial data.

This study employed a systematic sampling method, the technique, involves randomly selecting of an initial starting point on a list, and subsequently every nth element in the sampling frame is selected (Hair, Money, Samouel & Page, 2007). The sampling interval is regarded as the number of population elements between each unit chosen from a given sample. The sampling interval for this study is considered to be (population/sample) 609/234 = 3. At a starting point the researchers selected a number between 1 and 3, and then the sample would be the sampling elements numbered 3, 6, so on up to the last sample been selected.

Both SPSS software version 20 and SmartPLS 2.0 M3 (Ringle, Wendo & Will., 2005) were employed as a tools of analysis. Fox (2005) viewed SmartPLS 2.0 M3 (Ringle et al., 2005) as a

tool that reflects an informal thinking about causal relationships that is common in social-science theories, and helps in translating such theories into data analysis though in courses such as economics, structural-equation models may stem from formal theory. Ringle etal., (2005) viewed it to be a regression like approach that is capable of reducing the residual variances and has the unique ability to work well with both larger and fewer samples. Contrary to AMOS SEM, that requires larger samples of data set (Cavana, Delahaye & Sekaran, 2001; Hair et al., 2011). There is two different processes of data assessment in SmartPLS 2.0 M3 (Ringle et al., 2005) which includes the assessment of the measurement model as well as that of the structural model. Similarly, PLS-SEM is more robust in handling non - normal data because it has flexible assumptions about the normality of the distribution of variables (Henseler, et al., 2009). Therefore, this study employed SmartPLS Version 2.0 to determine discriminant validity, convergent validity, and test of the stated hypothesis.

Performance is operationalized as the ability to access the level of success or otherwise of a given firm. The performance (non-financial) was measured using 4 items adopted from the work of ShukriBakr (2014). Whereas, total quality management is viewed as a holistic approach involving all stakeholders of continuous improvement through the involvement of top level management and employees to achieve customer satisfaction which will enhance the quality delivery (Demirbag, et al., 2006). The 6-items were adopted from Al – Swidi and Mahmood (2012) for total quality management measurement. Negative worded questions on few items in the instruments were used in order to check the excesses of common method bias (Shehu & Mahmoud, 2014b).

DATA ANALYSIS AND RESULTS

Profile of Respondents

The profile of respondents is shown in Table 2 below. The respondents were asked on some demographic characteristics which include gender, age, educational qualification, years in service, current administrative position as well as number of years in current administrative position. Starting with gender, it is found that male academic leaders constitute the majority with 191 respondents representing 96 percent. As regard to age, those between 40-50 years are the major academic leaders found with 63 (35) percent, followed by those between 30-40 years (29) percent, 50-60 years are next with 20 percent and 60 years and above carries 19 percent, finally, none is found between 20-30 years. Similarly, with regards to current administrative position of respondents, majority are heads of various academic departments with a response rate of 81 (41 percent), followed by deputy deans of faculties, which recorded 26 response rate (6 percent), followed by directors of university centers which are 22, in number representing (11percent). Others are deputy directors with 15 (7.5 percent), program coordinators and deans of faculties recorded 12 each with (6 percent) respectively. Directors and deputy directors of university center of excellence recorded 5 each (2.5 percent), other respondents are 3 (1.5 percent), only two vice chancellors and deputy program coordinators responded representing only (1 percent) each. Meanwhile, with regards to years in current administrative position, 1-2 years had response of 75 (38 percent), 55 had between 3-4 years (28 percent), 36 respondents had between 5-6 years (18 percent), whereas, 32 respondents had 7 years and above in their respective present administrative positions.

Table 2: Demographic Profile of Respondents

Demographic variables	Categories	Frequency	Percentage
Gender	Male	191	96
	Female	7	4
Age	20 -30 Years	---	---
	30 – 40 Years	59	29
	40 – 50 Years	63	35
	50 – 60 Years	39	20
	60 Years and above	37	19
Education	HND/Bachelor	-----	---
	Master Degree	51	26
	PhD	147	74
	Others	----	---
Years in Service	Below 5 Years	17	9
	Between 5-10 Years	30	15
	Between 11-15 Years	31	16
	Between 16-20 Years	65	32
	Between 21-30Years	55	28
	30 Years and above	---	---
Current Administrative Position	Vice – Chancellors	2	1
	Deputy Vice - Chancellors	13	6.5
	Deans	12	6
	Deputy Deans	26	13
	Head of Departments	81	41
	Director of Centre/institutes	22	11
	Deputy Director of Centre/institutes	15	7.5
	Programme	12	6
	Coordinator/Chairpersons	2	1
	Deputy Programme Coordinator/Chairpersons	5	2.5
	Director University Excellence Centres	5	2.5
	Deputy Director University Excellence centres	3	1.5
	Others		
Years in Current Administrative Position	1 – 2 Years	75	38
	3 – 4 Years	55	28
	5 - 6 Years	36	18
	7 Years and above	32	16

Mean and Standard Deviation

Mean is the common measure of central tendency, which is considered to be the average value of the data set (Hair et al., 2013; Sekaran & Bougie, 2013). Equally standard deviation is a measure of variability, or spread, which provides an index of dispersion in the data set and it is the square root of variance (Hair et al., 2013; Sekaran & Bougie, 2013). Mean and standard deviation are considered the important descriptive statistics for interval and ratio scale (Sekaran & Bougie, 2013). The present study used five point Likert scale. Table 3 provides a description of the mean and standard deviation of the study variables used. Total quality management recorded the highest mean (M = 4.03, SD = 0.81), while the University performance is with the lowest mean (M = 3.75, SD = 0.89. Thus, the entire variables means were in the range of high level.

Table 3: Variables Mean and Standard Deviation

Items	Description	Mean	SD
1	University Performance	3.75	0.89
2	Total Quality Management	4.03	0.81

Confirmatory Factor Analysis

Confirmatory factor analysis is used in this study by employing principal component analysis approach. It is pertinent to note that questionnaire in this research were adapted from earlier studies; hence this study only undertook the CFA. Smart PLS 2.0 M3 (Ringle *et al*., 2005) has an inbuilt features that takes care and provides adequate results of the confirmatory factor analysis.

Structural Equation Modeling (SEM)

SEM is fundamentally concerned with the treatment of both issues concerning measurement and the structural/hypothesized models. Thus, detail assessment of the measurement model is provided below.

Measurement Model

Measurement model ensures that the model specification is valid and reliable. Based on Esposito vinzi et al. (2010) argument which clearly pointed out the rules of thumb as, for an outer loading to be considered, such a model should be 0.5 and above than, at the same time average variance extracted (AVE), it ought to be greater than 0.5. Based on the above argument, all the items with outer loading below 0.708 indicating that the latent variable is able to explain at least 50 percent of indicator variance was used (Hair et al. 2012). Although, 0.5 is considered acceptable, but for it to contribute toward obtaining good AVE result and 50 percent of indicator variance a value of 0.708 is considered appropriate in this study (Ramayah, Cheah, Chua, Ting, & Memon).

Similarly, a detailed description of the modeling procedures as pointed out by Anderson and Gerbing (1998) is also considered, which provides a two-step modeling approach to determine the quality of items used for measurement and secondly to be able to estimate the relationship between models. These two approaches are also discussed as measurement model and structural model (Hair et al., 2012). Several relationship effects are involved in the present study, hence the use of partial least squares as suggested by Chin et al. (2003) and Smart PLS software (Ringle et al., 2005) was used for this study, which assess the reliability and validity as well as testing the structural /hypothesized model. Examinations of the loadings and cross loadings serve as an essential for determining the convergent validity which is shown in the table 4 below.

Convergent Validity

Convergent validity is used with a view of ascertaining the construct validity for this research. Bagozzi, Yi and Philips (1991) and Hair *et al*., (2010), viewed this as the degree to which a place of construct meets in measuring the concept on the construct (Bagozzi, *et al*., 1991; Hair, *et al*., 2010). This method has been recorded in previous literature, particularly using benchmark of Average Variance Extracted (AVE), Composite Reliability (CR). And the result of this research indicated a higher and statistical significant that measure individual variable of the study with 0.7 and above, CR 0.7 and above so also the AVE 0.5 and above (Bagozzi, *et al*., 1991; Hair, *et al*., 2010).

Looking at the Table 5 reveals that the AVE values between 0.556 and 0.638 and the CR values of the constructs above the recommended assessment of 0.7, which ranges between 0.875 and 0.882, it can be established that the measurement model has sufficient degree of convergent validity.

Table 4: Factor Loading and Cross Loading

Items	PER	TQM
PER1	**0.763**	0.530
PER2	**0.828**	0.567
PER3	**0.857**	0.598
PER4	**0.740**	0.547
TQM1	0.580	**0.742**
TQM2	0.521	**0.766**
TQM3	0.538	**0.744**
TQM4	0.552	**0.777**
TQM5	0.466	**0.732**
TQM6	0.470	**0.710**

Table 5: Construct Convergent Validity and Reliability

Variable	Items	Factor Loadings	Cranach's Alpha	Composite Reliability	AVE
Performance	PER1	0.763	0.809	0.875	0.638
	PER2	0.828			
	PER3	0.857			
	PER4	0.740			
Total Quality Management	TQM1	0.742	0.840	0.882	0.556
	TQM2	0.766			
	TQM3	0.744			
	TQM4	0.777			
	TQM5	0.732			
	TQM6	0.710			

Discriminant Validity

Discriminant validity is considered to be the degree to which a set of construct can actually be different from other construct. In examining discriminant validity of the measurement model, the Fornell and Lacker (1981) criteria is employed. Table 6 below indicates the correlation matrix in which the diagonal element represents the square root of the average variance extracted of the latent constructs. The result of the correlation matrix indicated in the table below ensures that the discriminant validity is confirmed.

Table 6: Discriminant Validity

		1	2
1	Performance	**.884**	
2	Total quality management	.440	**.711**

Note: *The bolded values in diagonals represent the square root of the AVE while those off the diagonals represent latent variable correlations.*

Structural Model

After a careful assessment of the measurement model, next is to examined the structural Model for this study. Hair *et al*., (2006) viewed Structural model as a model that expresses about the reliance of association in the hypothesized model. In partial least squares, structural model brings to the forefront the directional association between the constructs and their t-values as well as the path co - efficient. In terms path coefficient, partial least squares as argued by Argawal and Karahanna (2000), is just like the standardized beta coefficient in regression analysis. The fundamental objective of structural model is to test the hypothesized relationships among constructs. Initially, the study focused on model evaluation and secondly, assessed the assumption of regression and correlation of variables. The structural model evaluation continues with an examination of the direct relationships. Only one hypothesis which posed a direct relationship in this study is tested and is found to be supportive.

Table 7 indicates the path coefficients, t- values, and standard error at which they are used as a basis for testing hypotheses. The t- values for this research is estimated using a 5000 re-sampling iterations in recurring Bootstrapping as recommended by Hair *et al*., (2014). It can equally be justified that chosen the 5000 sample is for ensuring that each model parameter has experimental sampling sharing and the standard deviation of the distribution will serve as a proxy of the parameter for statistically standard error (Hair *et al*., 2012).

Table 7: Result of Hypothesis Testing

	Beta	Standard Error	t-value	P-Value	R^2	f^2	Decision
TQM -> PERFORMANCE	0.703	0.008	82.824	0.000	0.494	0.19	Supported

The above table 7 indicated that the study hypothesis is accepted and possess a t-value which is greater than 1.96 shown an adequate support for the direct hypotheses. The R^2value (0.494) indicated that the study variable of total quality management is capable of influencing 49.4% of the changes in the dependent variable which is the University performance.

The above table 7 also presents the effect sizes of the supported relationships based on Cohen (1988) criterion, where a value of 0.02 is considered small; 0.15 medium; and 0.35 as large. It is important to note that the direct hypothesis possess a medium rating Chin *et al*., (2003) argued that even the smallest f^2 strength is considered important due the fact the they can have impact on the criterion variable.

Predictive Relevance of the Model

Predictive relevance of the model is meant to assess the predictive ability of a particular model. Hair *et al*., (2012) asserted that predictive relevance is represented by Q^2; Q^2 does not only evaluate how values are built around the model but also assesses the parameter estimates. The Q^2 is calculated through blindfolding, and then the results were obtained through the variable score out of which cross validated redundancy is extracted. The cross validated redundancy assesses the capability of the model to predict the endogenous variables and hence demonstrates the quality of the model. The Table 8 shows the construct cross validated redundancy.

Table 8: Construct Cross Validated Redundancy

Total	SSO	SSE	1-SSE/SSO (Q^2)
TQM	1673	1936	0.16

Table 8 above depicts the predictive relevance of the model remains outstanding, which is in line with the Hair *et al*., (2013) argued that if $Q^2 > 0$, the model has predictive relevance whilst if $Q^2 < 0$, the model do not poses any predictive ability. Hence, the predictor possesses value that is greater than Zero indicating sound predictive model relevance, Total quality management (0.16).

DISCUSSIONS AND CONCLUSION

The discussion of the study basically focused on the research questions stated earlier. Research questions were answered by the research objectives. The research question is as follows: 1) is there any relationship between total quality management and performance of Nigerian public universities?

The aim of the question is to assess whether total quality management can be a good predictor of performance of the Nigerian public universities. This represents the first research hypothesis that *there is a significant and positive relationship between total quality management and performance of Nigerian public universities*. Smart PLS 2.0 software is used to test this hypothesis. The result indicated that the predicting variable is able to explain 49.4. % of the model (R^2). The Smart PLS 2.0 software results indicated that total quality management is found to predict the performance of Nigerian public universities with the following values ($\beta = 0.703$, $t = 82.824$, $P<0.000$).

This result shows that TQM is a good predictor of university performance in Nigeria. Hence hypothesis H_1 is supported. The findings of this study was in line with previous studies of Sureshchandar, Rajendran and Anantharaman (2002) which found that TQS dimensions are good predictors of service quality in the Indian banking sector. Lee (2003) in a study which examined total quality management and small and medium enterprise performance in China, using a quantitative survey found that total quality management has a significant effect on organizational performance. Kaynak (2003) examined the total quality management effects on organizational performance. In a cross – sectional study conducted via mail questionnaire survey of US firms from contiguous states, TQM practice is found to positively associate to organizational performance of the US firms. Khan (2003) surveyed four hundred and sixty three firms over a period of ten years, and found a significant and positive relationship between TQM and performance of firms. Similarly, Temtime (2004) used a questionnaire survey of fifty four small and medium enterprises in Bostwana using a descriptive statistics for the data analysis. The finding shows that environmental scanning is indirectly related to TQM practices and has a moderating role in TQM practice. Prajogo and Brown (2006) empirically surveyed managers in Australia, using descriptive statistics, correlation and regression methods for the data analysis. The finding is in support of the positive relationship between approaches to quality and organizational performance.

Theoretical Implication

Previous studies have shown how total quality management relates to performance (Yusof, Fayzollahi, Shirmohammadi & Litifian, 2013; Jaafreh & Al –Abedallat, 2013; Yunis, Jung & Chen (2013); Narimani, Tabaein, Khanjani & Soltani 2014; Golmohammadi, Zohoori, Hosseinipour & Mehdizadeh 2014, Al – Ettayen & Al – Zubi 2015; Topalovic 2015). This research makes a significant input to the literature by identifying and addressing some gaps through a systematic literature review. The literature review in his study indicated that not many studies have looked at Universities performance. Additionally, the present study's contribution is the methodology adopted: the questionnaire as an instrument and the specific items were adapted from previous studies conducted in other part of the world, ie total quality

management was from Al –Swidi and Mahmood (2012) in a study conducted in Yemen. Performance was based on Shukri Bakr (2014) study conducted in Malaysia. Hence, the current study has contributed in testing these instruments in an African context. Similarly, the present study has contributed in developing and testing research hypothesis.

Managerial and Policy Implication

The findings of this study support a significant and positive relationship between some predictor of university performance in northwestern Nigeria. This finding indicated that the predictor provide support to performance. The findings of this study would be of relevance to policy makers such the National Universities Commission (NUC) being the regulator of university education in Nigeria. University vice chancellors as administrators can benefit from the study outcome. The Tertiary Education Trust Fund (TETFUND) could also be a beneficiary of the study's findings as it could guide it in funding relevant studies across universities. However, researchers and students will equally benefits from the study outcome, as it serves as a frame of future reference. The findings would help the federal ministry of Education, by giving them an empirically tested findings on some determinants of university performance for them to better understand the effects of variable under study for improve performance and also for sectorial allocation.

Limitations and Suggestions for Future Research

The first limitation is that even though there are so many variables that can measure organizational performance, this study is limited to only total quality management. One other limitation of this study is that data was collected from academic leaders from fifteen Northwestern public universities; other public and private universities were not considered which might affect the basis for generalization. Additionally, this study was a cross sectional in nature. It involves data collection within three months, which can be considered as short period due to limited resources and time. Sekaran (2003) asserted that one the shortcoming of cross – sectional study is the inability to prove cause and effect association among variables.

The present study relies on the perception of academic leaders in the fifteen Northwestern universities; their responses may not provide a precise replication of reality. In spite of these shortcomings, the present study provides a basis for examining the relationship between TQM and performance of public universities in northwestern Nigeria.

In order to address the limitations above, this study recommends that future studies should be conducted on other variables that can predict university performance. Additionally, there is the need for future empirical studies on the dimensions of total quality management, in order to ascertain the specific influence of each dimension on university performance. The present study is cross - sectional in nature, therefore, future research may be conducted by collecting data over a long period of time, longitudinal in nature in order to have enough time for the data collection. Future studies should also investigate in more detail the nature of the relationship, considering the cause and effect relationship. The present study uses academic leader's perception; future studies may use the perception of academic staff, students and other stakeholders in performance rating.

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