Total Quality Management, Employee Commitment and Competitive Advantage in Nigerian Tertiary Institutions. A study of the University of Lagos

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Abstract: The quality of education offered by the tertiary institutions in Nigeria in recent times has critically degenerated. Unfortunately, this has led to the unprecedented rise in the poor quality of Nigerian graduates which contributes to the very alarming high rate of unemployment in the country. This article therefore examines the relationship between total quality management (TQM), employee commitment and competitive advantage among tertiary institutions in Lagos State with a particular focus on the University of Lagos, using a survey research design with a random selection of 350 respondents from a population of 2047 staff strength across the 11 faculties in the university. The data used for this article were derived from a systematic review of the relevant literature and a structured questionnaire. The data obtained from the questionnaire was subjected to descriptive and inferential statistics. The result showed that the adoption of total quality management practices and employee commitment significantly affects competitive advantage. The findings suggest that proper adoption of TQM practices coupled with employee commitment will guarantee competitive advantage outcomes measured in terms of increase in revenue, customer satisfaction and employee satisfaction. TQM and employee commitment through its principles can successfully contribute to enhanced organizational performance and dynamic competitiveness.

Key words: TQM, employee commitment, competitive advantage, organizational performance, tertiary institutions.

1. Introduction

Over the years, it has become very essential for organizations all over the world to continuously monitor its business environment due to its dynamic nature and then strive to adapt to the changes. To cope with these global changes, tertiary institutions seek for different methods to outshine the local institutions and compete with the international institutions and one of such ways is integrating quality into their educational system. To this respect, attention has shifted to the concept of Total Quality Management (TQM). TQM is a philosophy that talks about the continuous effort of all the employees in an organization to ensure thorough quality products and services and to guarantee customer satisfaction. The success of every organization greatly lies on the commitment of its employees. For an organization to rise to the peak, the employees need to be wholly committed to the achievement of the objectives. Employee commitment is the devotion that an employee has to its organization. Ogini (2020) defined employee commitment as the psychological attachment employees shows towards their workplace.

Human resources are the greatest asset in an organization and can be the source of competitive advantage in an organization. Employee commitment is a key determinant to an organization's performance because high levels of employee commitment to organizational goal will achieve a higher

organizational performance. The objective of every organization is to develop a sustainable competitive advantage that will promote continuous growth and expansion. More so, the increase in globalization has equally increased the level of competition between organizations and this has led to the formulation of competitive strategies by organizations to distinguish itself from others. Competitive advantage is the superiority that an organization has over other similar organizations. Quality can be a major source of competitive advantage (Economou & Chatzikonstantinou, 2009) but the achievement of this objective greatly lies upon the human resources of the organization. The employees are majorly responsible for implementing total quality management practices which can guarantee competitive advantage. Hence, this is the reason why the adoption of TQM practices with the help of committed employees in its implementation seems an effective approach for an organization to achieve the objective of prevailing over its competitors.

1.1. Statement of problem

From earlier reviewed literature, the quality of higher education in the Nigerian tertiary institutions in the seventies could be compared with the type of education offered by top world higher institutions. However, in recent times, the quality of education offered by Nigerian tertiary institutions has critically degenerated (Moja, 2000). Hence, there is an unprecedented rise in the poor quality of Nigerian graduates which results in the very alarming high rate of unemployment in the country. To make things worse, most Nigerian students in pursuit of a degree would not give a second thought to choosing home based tertiary institutions when provided with the option of going to tertiary institutions overseas. This is due to the decline in the quality of education provided by the home based institutions. Students, parents and sponsors in recent times have also become more conscious of their right to demand good value for the money and time spent in getting quality education thus, the need for tertiary institutions to provide quality education. In addition, organizations such as the World Bank, United Nations and UNESCO emphasize on the important role of education in the world's economic development, the development of "a knowledge based society" (Ganguly, 2015).

Quality education contributes to overall development in the economy and tertiary institutions all over the world strive to be the best facilitator of quality education. However, with the intensity of global competition and as tertiary institutions fightfor competitive advantage, the question of what strategy a tertiary institution can use to outperform its competitors both locally and internationally is asked. Quality has always been one of the key strategic choices available and the adoption of TQM practices seems one of the ways out to achieve sustainable competitive advantage. However, it is worthy of note that the implementation of TQM practices in an organization is in the hands of its employees. Therefore, an organization that can boast of committed employees has a greater tendency of higher productivity which can lead to competitive advantage.

1.2. The objectives of the study

1. examine the effect of the adoption of total quality management practices on employee commitment

2. examine the significant effect of employee commitment on competitive advantage

3. investigate how the adoption of total quality management practices affect competitive advantage

4. determine the effect of the adoption of total quality management practices and employee commitment on competitive advantage

1.3. Research questions and Hypotheses of the study

1. How does the adoption of total quality management practices significantly affect employee commitment?

2. What is the significant effect of employee commitment on competitive advantage?

3. How does the adoption of total quality management practices significantly affect competitive advantage?

4. How does the adoption of total quality management practices and employee commitment significantly affect competitive advantage?

1.4. Research Hypotheses

H_0: Adoption of total quality management practices does not significantly affect employee commitment.

H_0: There is no significant effect of employee commitment on competitive advantage.

H_0: There is no significant effect of the adoption of total quality management practices on competitive advantage.

H_0: Adoption of total quality management practices and employee commitment does not have any significant effect on competitive advantage.

2. Literature review

2.1. European Foundation for Quality Management (EFQM) Model

Different models have been developed such as the European Foundation for Quality Management (EFQM Model) to steer organisations towards Total Quality Management (TQM). The Total Quality Management (TQM) concept is based on the EFQM model. The model is based on the assumption that organizations should channel all its activities to sustain continuous improvement which is the concept of TQM. The new EFQM model consists of seven criteria (as shown in Figure 1) namely: Purpose, vision and strategy,Organisational culture and leadership,Engaging stakeholders, Creating sustainable value, Driving performance and transformation, Stakeholder perception, Strategic and operational performance (EFQM, 2020).

2.2. Total quality management

TQM has been broadly defined by so many researchers. It was simply defined by Farooq et al. (2007) as an art of organizing the whole to achieve excellence. Addae-Korankye (2013) in his own view added that "TQM is a quest for excellence that ensures the right attitudes and controls are put in place to prevent defects and to achieve customer satisfaction through intense effectiveness and efficiency". According to Ngambi & Nkemkiafu (2015), TQM is a "concept based on continuous improvement in the performance of processes in an organization and in the quality of the products and services that are the outputs of those processes". From these definitions, TQM can be deduced as a theory that ensures customer satisfaction by providing quality through the continual efforts and involvement of everyone in the organization. There are principles that revolve around TQM as reviewed in different literature. Based on this, some of these principles will be discussed below to give a general background on the nature of total quality management (Figure 2).

Customer focus emphasizes that organizations should provide services that satisfies their customers. Hence, who are the customers in higher education institutions? Harvard University defined its customers as "as one to whom we provide information or service". Customers here are of two types, the internal and the external. The external customers are the students, parents, sponsors, employers and society at large while the workers in the organization (Ali & Shastri, 2010). Although in TQM, the emphasis is on the external customers, however the internal customers should equally be made happy (Najafabadi et al., 2008). Ray et al. (2016) affirms this by saying that the requirements of the internal customer should firstly be satisfied. This will motivate them to provide fulfilling services to the external customers as satisfied internal customers equals to satisfied external customers.

Continuous Improvement focuses on improving all the factors relating to the production of goods and services on an ongoing basis (Stevenson, 2012). To meet up with the demands of the customers and to survive in an ever growing market, an organization must continuously improve its processes and methodologies to achieve a greater quality of its products. Ray et al (2016) notes that continuous improvement is necessary in order to be above the challenges that might be brought up by the competition and to always satisfy the customer.

Team approach stresses the use of teams to solve problems, creating synergy and promoting the spirit of cooperation among employees to achieve the goal of an organization. The Japanese understood this philosophy well and excelled as a result of making use of it. According to Adediran & Adediran (2008), an effective and efficient creation of goods and services in an organization depends extensively on a well-organized and arranged team. This goes on to say that without effective teamwork, achieving quality in an organization cannot be possible.

Top management commitment is supreme in the adoption and implementation of total quality management (Alamutu et al., 2012) since they are entrusted with the role of coaching the other employees on the importance of TQM. According to Mehra et al. (2001), top management provides leadership needs and gives their approval for training demands and most organizational changes.

Employee involvement entails empowering employees to make decisions through responsibilities
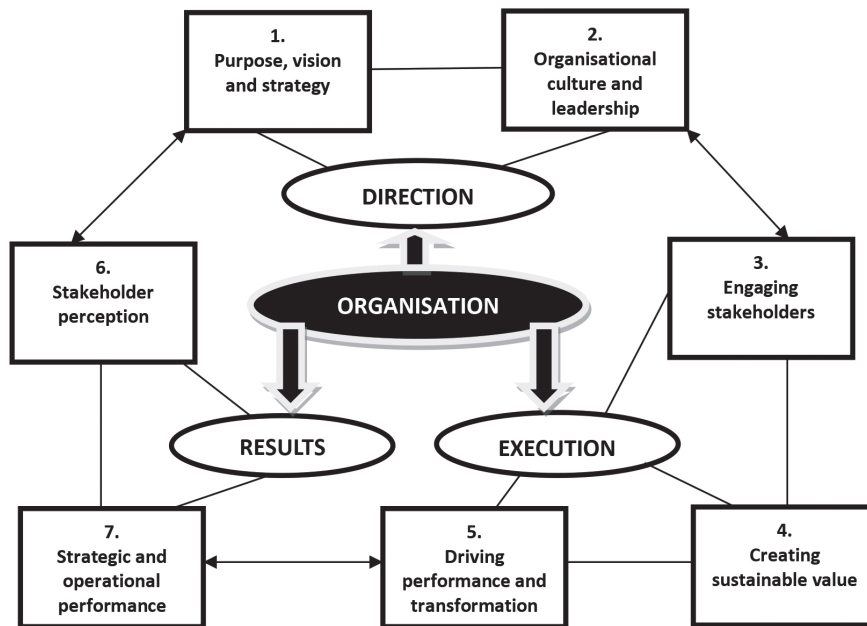
Figure 1. The structure of the new EFQM model.
Source: Adapted according to EFQM (2020). Retrieved from www.efqm.org.

that will help in solving problems that will help organizations achieve their goals. In order to achieve proper implementation of TQM, every employee in the organization must be actively involved. Employees are motivated when they are given the authority and responsibility for improvements. This allows them to make decisions and proffer necessary solutions to problems (Stevenson, 2012).

Training prepares employees with the needed skills and techniques which will enable them improve quality in the production process. To achieve a successful TQM implementation, constant training

programs should be put in place to continuously improve quality. With proper and effective training, employees will have adequate knowledge of the industry and structure of the organization. This will in turn increase their motivation to work, overall performance and loyalty to the organization. In addition, they will be able to provide quality services which will increase customer satisfaction and reduce complaints (Sadikoglu & Olcay, 2014).

Competitive benchmarking entails finding out organizations that are the best in their fields and carefully observing and learning their methods in
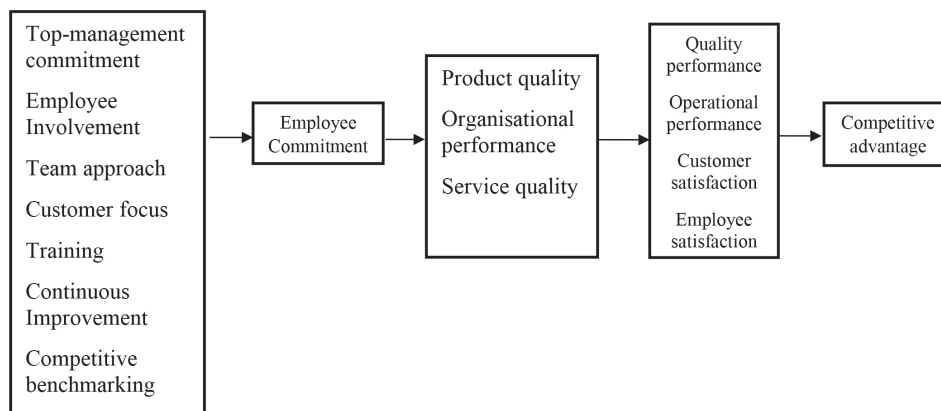

Figure 2. Total Quality Management principles.
Source: Adapted from Talib & Rahman (2012).

order to improve its mode of operations (Stevenson, 2012). Here, the organization measures its performance against its competitors by concentrating on some selected industry measures. According to Camp (1993), benchmarking is a form of self-appraisal and self-advancement that involves an organization comparing its performance with its competitors for the purpose of identifying its strengths and weaknesses.

2.3. Employee commitment

Employee commitment according to Ongori (2007) is the degree of affection or devotion an employee feels towards the organization. To Zheng (2010), it simply means the attitude of an employee to his organization. Employee commitment means when employees devote their energy into executing their duties, which stems from a sense of obligation to the organization. Employee commitment has been believed to predict the performance of workers which in turn determine the success of an organization (Zheng, 2010). Research has found out that several factors induces employee commitment. Some of these factors can be compensation, job enrichment, employee empowerment (Ongori, 2007), continuous training and development, job security to mention a few. In some studies, employee commitment is used synonymously with organizational commitment. Committed employees are more likely to remain in an organization, hence employee commitment is of great importance to an organization because it will reduce absenteeism and turnover as well as improve organizational performance as a whole (Dixit & Bhati, 2012).

2.4. Concept of competitive advantage

Competitive advantage is the edge that an organization has over its competitors when it develops or acquires attributes that makes it to outperform them (Wang, 2014). An organization can boast of competitive advantage when it is able to distinguish itself from its competitors through its unique capabilities. An organization has to develop strategies that will give it an edge over its competitors in order to have a competitive advantage. In developing a competitive advantage, an organization must be able to identify its strengths and weaknesses by understanding the operating forces in the business environment as identified by Michael Porter. These forces are the threat of new entry, bargaining power of suppliers, bargaining power of buyers, threats of substitute

products and competition in the industry (Porter, 2008). According to Porter, entry of new firms into the market with similar products poses a threat to the existing firms. The ability of other firms in the industry to replicate or substitute the products or services of a firm is also a threat. Furthermore, the more suppliers a firm has in the industry, the more power it has over them. However, if the suppliers are few, the firm is at a disadvantage because they tend to determine the prices. In addition, the more the customers of a firm, the less power they have to determine prices, hence beneficial for the firm.

The other approach to competitive advantage is the resource-based view. These resources are the physical and non-physical assets which an organization possesses. Resources are very crucial and dependent on the smooth operations of an organization. However, what is imperative is how these resources are being used effectively and efficiently. If the resources of an organization are managed properly, it can lead to competitive advantage. Competitive advantage according to Al-Rfou (2012) is the ability of an organization to outperform its competitors by effectively producing goods or services more than they do. For an organization to attain competitive advantage, one or a mix of the three approaches can be used: differentiation, cost leadership, or focus (Porter, 1980). Daft (1991) as cited in Addae-Korankye (2013) opines that it is very possible that organizations that have adopted total quality management use the above mentioned strategies. When the quality of products and services are improved, manufacturing costs are reduced. This is cost leadership and it leads to higher profits and returns. In addition, the firm will be able to command premium prices as a result of the uniqueness of their product (differentiation).

2.5. TQM, Employee Commitment and Competitive advantage

The level of competition among firms has been increased due to globalization and transnationalism of firms and one out of the many strategies for achieving competitive advantage in organizations around the worlds is providing a higher quality service around the world. Customers demand for quality products and this has inspired many organizations to produce quality products to gain ground in the market place (Kruger, 2001). Customers no longer consider price as a motivator in buying products or services. Presently quality

has become one of the yardsticks used to measure organizations and products compete in terms of their quality in the market place. A study conducted by Lamptey (2009) showed that so many Ghanaian organisations are wearing out and below standard due to their retrogression in quality management. This is because majority of these organizations most especially the service ones do not treat their customers right forgetting that in this era of globalization, customers have the power to make or mar an organization. In addition, getting quality employees is very imperative but the huge cost involved in the training and development has made majority of these organisations neglect it. This however can lead to the provision of inferior services, therefore, to attain competitive advantage in organisations, quality should take precedence (Addae-Korankye, 2013). In addition, having quality and committed employees in an organization is beneficial to the organizational performance. This is because committed employees are always excited to identify with the organization, believe in its goals and puts its interest at heart (George & Jones, 1996).

Total quality management approaches are being embraced by organizations to improve quality, increase productivity, increase customer satisfaction and improve organizational performance. This has made many organizations to adopt and implement TQM strategies to counter the current global competition. Total quality management is one of the strategies used in maximizing the competitive nature of firms by focusing on employee involvement, and continuous improvement in the quality of products and services and customer satisfaction (Gaspersz, 2005). There have been a large number of studies that have acknowledged the fact that total quality management has a positive impact on an organization's financial and overall performance. Hence, it is important to appreciate the vital role TQM plays in giving an organization a competitive edge (Kruger, 2001).

3. Methodology

3.1. Research Design

This study was conducted using the survey research design. The academic and non-academic staff across the faculties in the University of Lagos constituted the population for this research. The University is composed of 11 faculties and they are art, basic medical sciences, clinical sciences, dental sciences, education, engineering, environmental sciences, law, management sciences, sciences, social sciences. The number of employees in each faculty was obtained from the human resource department of the university and as at the time of carrying this study, there was one thousand, four hundred and ninety-two (1492) academic and five hundred and fifty-five (555) non-academic staff across the faculties in the University.

3.2. Sampling technique and Instrument

A sample size of 335 using the Taro Yemane (1967) formula was drawn out of the population. The study made use of multistage sampling technique. Stratified technique was used to ensure that every faculty in the university is represented in the sample chosen in proportion to their population. Hence for each of the faculty, simple random sampling was applied on proportionate basis to determine the required sample size in each faculty and the sample size was calculated using the stratified method thus: the population of employees in each faculty was obtained and respondents were selected from each faculty based on the population of each faculty in relation to the determined sample size. The questions for the study were adapted by making use of the variables - total quality management practices, employee commitment and competitive advantage. The instrument was pilot tested with 40 respondents and a Cronbach's alpha coefficient of 0.879 was gotten. Three hundred and thirty five questionnaires were administered but only 290 was returned which was approximately 87%.

3.3. Data collection method

In collecting the data for this study being quantitative, a close ended questionnaire was used for the study. This choice is influenced by the fact that it enables the researcher to cover a large sample with dependable and reliable result (Kothari, 2004), guarantees higher response rate and because it is self-administered. Self-administered questionnaires are normally completed by the respondents (Saunders et al., 2011). Other reasons why closed ended questionnaires was chosen is due to the constraints of time, rigors of analysis and high cost of administration posed by other instruments.

4. Results and discussion of findings

4.1. Socio-Demographic Characteristics of the Respondents

Socio-Demographic Characteristics	Frequency (N=290)	Percent
Gender		
Male	165	56.9
Female	125	43.1
Total	**290**	**100**
Age (Years)		
Less than 20 years	0	0
21-30 years	98	33.8
31-40 years	101	34.8
41-60 years	84	29.0
60 years and above	7	2.4
Total	**290**	**100**
Marital Status		
Single	105	36.2
Married	145	50.0
Divorced/Separated	33	11.4
Widow/Widower	7	2.4
Total	**290**	**100**
Highest Educational Qualification		
NCE, ND or equivalent	27	9.3
HND, B.Sc. or equivalent	96	33.1
M.Sc./MBA	129	44.5
PhD	38	13.1
Total	**290**	**100**
Faculty		
Art	36	12.4
Basic Medical Sciences	11	3.8
Clinical Sciences	26	9.0
Dental Sciences	10	3.4
Education	33	11.4
Engineering	36	12.4
Environmental Sciences	22	7.6
Law	13	4.5
Management Sciences	30	10.3
Sciences	46	15.9
Social sciences	27	9.3
Total	**290**	**100**
Staff Designation		
Academic	158	54.5
Non-Academic	132	45.5
Total	**290**	**100**
Employee Cadre		
Senior Staff	220	75.9
Junior level staff	70	24.1
Total	**290**	**100**
Length of Service		
Below 5 years	70	24.1
5-10 years	104	35.9
11-15 years	64	22.1
16 years & above	52	17.9
Total	**290**	**100**

Source: Survey, 2018.

4.2. Test of Research Hypotheses

The hypotheses stated in this study were tested against the statistical table value to form the basis of accepting or rejecting the null hypotheses using simple and multiple regression analysis at 0.05 level of significance so as to determine whether the outcome of the study will lead to the rejection of the null hypothesis. The simple regression was used for hypotheses 1 to 3 while the multiple regression was used for hypothesis 4.

4.2.1. Hypothesis 1

H_0: Adoption of total quality management practices does not significantly affect employee commitment.

Model Summary[a]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	0.594[b]	0.353	0.348	4.76960	1.692

[a]Dependent Variable: Employee_Commitment.
[b]Predictors: (Constant), Total_Quality_Management_Practices.

ANOVA[a]

	Sum of Squares	Df	Mean Square	F	Sig.
Regression	659.055	1	659.055	24.200	0.000[b]
Residual	7843.290	288	27.234		
Total	8502.345	289			

[a]Dependent Variable: Employee_Commitment.
[b]Predictors: (Constant), Total_Quality_Management_Practices.

Coefficients[a]

Model	Unstandardized coefficients B	Std. Error	Standardized coefficients Beta	T	Sig
(Constant)	33.434	2.288	0.278	14.614	0.000
TQMP	0.327	0.006		4.919	0.000

[a]Dependent Variable: Employee_Commitment.
TQMP: Total_Quality_Management_Practices.

In order to test the above stated null hypothesis, simple regression coefficient was used. The r^2 value of 7.8% explains the proportion of the total variation in employee commitment that is attributed to variation in total quality management. The adjusted r^2 value of 7.4% shows the actual variation in the university's employee commitment as a result of changes in its total quality management. From the ANOVA table, since the *p*-value is 0.000 which is less than 0.05, this implies that the test is statistically significant. Hence, the null hypothesis is rejected and it can therefore be concluded that the adoption

of total quality management practices significantly affects employee commitment. The coefficient table also shows that where total quality management practices do not exist, employee commitment is 33.434. Also, for every unit increase in total quality management practices, employee commitment will increase marginally by 0.327.

4.2.2. Hypothesis 2

H_0: There is no significant effect of employee commitment on competitive advantage.

Model Summary[a]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	0.503[b]	0.253	0.250	5.11591	1.600

[a] Dependent Variable: Competitive Advantage.
[b] Predictors: (Constant), Employee Commitment.

ANOVA[a]

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	2551.918	1	2551.918	97.504	0.000[b]
Residual	7537.686	288	26.173		
Total	10089.603	289			

[a] Dependent Variable: Competitive Advantage.
[b] Predictors: (Constant), Employee Commitment.

Coefficients[a]

Model	Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.
(Constant)	12.832	2.492		5.149	0.000
Employee Commitment	0.548	0.055	0.503	9.874	0.000

[a.] Dependent Variable: Competitive Advantage.

The coefficient of determination r^2 value of 25.3% explains the proportion of the total variation in competitive advantage that is attributed to variation in employee commitment. The adjusted r^2 value of 25% shows the actual variation in competitive advantage as a result of changes in employee commitment. From the ANOVA table, since the *p*-value is 0.000 which is less than 0.05, this implies that the test is statistically significant. Hence, the null hypothesis is rejected and it can therefore be concluded that there is significant effect of employee commitment on competitive advantage. The coefficient table also shows that where employee commitment does not exist, employee commitment is 12.832. Also, for every unit increase in employee commitment, competitive advantage will increase marginally by 0.548.

4.2.3. Hypothesis 3

H_0: There is no significant effect of the adoption of total quality management practices on competitive advantage.

Model Summary[a]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	0.444[b]	0.197	0.194	5.30436	1.546

[a] Dependent Variable: Competitive_Advantage.
[b] Predictors: (Constant), Total_Quality_Management_Practices.

ANOVA[a]

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	1986.376	1	1986.376	70.599	0.000[b]
Residual	8103.227	288	28.136		
Total	10089.603	289			

[a] Dependent Variable: Competitive_Advantage.
[b] Predictors: (Constant), Total_Quality_Management_Practices.

Coefficients[a]

Model	Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	T	Sig.
(Constant)	17.897	2.325		7.696	0.000
Total_Quality_Management_Practices	0.567	0.068	0.444	8.402	0.000

[a] Dependent Variable: Competitive_Advantage.

The coefficient of determination r^2 value of 19.7% explains the proportion of the total variation in competitive advantage that is attributed to variation in total quality management. The adjusted r^2 value of 19.4% shows the actual variation in competitive advantage as a result of changes in total quality management. From the ANOVA table, since the *p*-value is 0.000 which is less than 0.05, this implies that the test is statistically significant. Hence, the null hypothesis is rejected and it can therefore be concluded that there is significant effect of the adoption of total quality management practices on competitive advantage. The coefficient table also shows that where total quality management practices does not exist, competitive advantage is 17.897. Also, for every unit increase in total quality management practices, competitive advantage will increase marginally by 0.567.

4.2.4. *Hypothesis 4*

H_0: Adoption of total quality management practices and employee commitment does not have any significant effect on competitive advantage.

Model Summary[a]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	0.594[b]	0.353	0.348	4.76960	1.692

[a] Dependent Variable: Competitive_Advantage.
[b] Predictors: (Constant), Employee_Commitment, Total_Quality_Management_Practices.

ANOVA[a]

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	3560.617	2	1780.308	78.258	0.000[b]
Residual	6528.987	287	22.749		
Total	10089.603	289			

[a] Dependent Variable: Competitive_Advantage.
[b] Predictors: (Constant), Employee_Commitment, Total_Quality_Management_Practices.

Coefficients[a]

Model	US. coefficients B	Std. Error	S. coeff. Beta	T	Sig	Collinearity Statistics Tolerance	VIF
(Constant)	2.918	2.759		1.058	0.291		
TQMP	0.421	0.063	0.329	6.659	0.000	0.922	1.084
EC	0.448	0.054	0.411	8.319	0.000	0.922	1.084

Dependent Variable: Employee_Committment.
US: Unstandarized; S: Standarized.
TQMP: Total_Quality_Management_Practices.
EC: Employee_Commitment.

The r^2 value of 35.3% explains the proportion of the total variation in competitive advantage that is attributed to variation in total quality management and employee commitment. The adjusted r^2 value of 34.8% shows the actual variation in competitive advantage as a result of interactions of total quality management and employee commitment. From the ANOVA table, since the *p*-value is 0.000 which is less than 0.05, this implies that the test is statistically significant. Hence, the null hypothesis is rejected and it can therefore be concluded that the adoption of total quality management practices and employee commitment does have significant effect on competitive advantage. The coefficient table also shows that where total quality management practices and employee commitment does not exist, competitive advantage is 2.918. Also, for every unit increase in total quality management practices, competitive advantage will increase marginally by 0.421. For every unit increase in total quality management practices, competitive advantage will increase marginally by 0.448.

4.3. Sobel Test

The aim of the Sobel (1982) test in this study was to thoroughly confirm the significance and effect of the mediating variable on the independent and dependent variable. The Sobel (1982) test for this analysis was calculated using the Sobel calculator by Preacher and Leonardelli (2018) and the result showed the *p*-value to be 0.00000915 which is less than 0.05. This implies that the test is significant.

4.4. Discussion of findings

The result of the analysis showed that the adoption of total quality management practices in an institution significantly affects employee commitment, as the result shows the acceptance of the alternative hypothesis as against the null given the *p*-value of 0.00 which is less than the significant value of 0.05. This finding is in consistent with the findings of several authors, one of which is Allen and Brady (1997) who suggested that the commencement of total quality management programs in organization has a positive influence on the employee's commitment. Karia and Asaari (2006) also revealed that total quality management practices such as employee empowerment, continuous improvement and so on significantly affect organizational commitment. The result of the analysis also revealed that there is a significant effect of employee commitment on the competitive advantage of an institution, as the *p*-value of 0.00 is less than the significant value of 0.05 thereby resulting in the rejection of the null hypothesis and the acceptance of the alternative hypothesis. This finding is in line with the findings of Mathur (2015) in his study on achieving competitive advantage through employees in which he outlined that employees are a valuable source of sustainable competitive advantage and that the success of an organization depends on the employee commitment towards the organization. Furthermore, the analysis showed that there is significant effect of the adoption of total quality management practices on competitive advantage, as the *p*-value of 0.00 is less than the significant value of 0.05 thereby resulting in the rejection of the null hypothesis. This finding is in consonance with the findings of Addae-Korankye (2013) who found out that the proper implementation of total quality management can be a source of competitive advantage. This also goes in line with

the study of Ganapavarapu and Prathigadapa (2015) where it was revealed that total quality management activities cause a significant impact on competitive advantage of organizations in global businesses. Finally, the result of the analysis also showed that total quality management adoption and employee commitment significantly affects the competitive advantage as the *p*-value of 0.00 is higher than the significant value of 0.05 thereby resulting in the acceptance of the null hypothesis and the rejection of the alternative hypothesis.

5. Conclusion and recommendations

The following conclusions have been drawn based on the findings of this study and the test of hypotheses.

a. The adoption of total quality management practices in an institution has a tremendous impact on employee commitment. This means that institutions that embrace TQM practices will have employees that are highly committed to the organization.

b. Also, it is concluded that employee commitment is an important determinant on the competitive advantage of an institution. This goes on to say that committed employees will be more than willing to increase productivity which will in turn lead to competitive advantage.

c. Furthermore, it was established that the adoption of total quality management practices is another important predictor of the competitive advantage of an institution. This means that proper adoption of TQM practices will enable organizations operate at a more competitive level by increasing quality, minimizing cost and satisfying customers.

d. Finally, it was concluded that the adoption of total quality management practices and the employee commitment has an influence on the competitive advantage of an institution. The combination of proper adoption and implementation of TQM practices and employee commitment in an organization can strengthen an organization's competitiveness.

5.1. Recommendations

The following recommendations have been proffered for better decision making and consideration for the purpose of improving better performance from the conclusions of the study.

a. This study has established that employee commitment is an important determinant on the competitive advantage of an institution; therefore, the management should introduce total quality programs with dimensions such as employee empowerment, training and continuous improvement into the system. This will enable employees to have adequate knowledge of their duties and responsibilities which will in turn increase their motivation to work, and to be actively involved towards achieving organizational goals leading to overall performance and competitive advantage.

b. Furthermore, from the conclusion that the adoption of total quality management practices in an institution tremendously impact employee commitment, TQM dimensions such as top management commitment and employee involvement should be put in place. Employees will be motivated to work by knowing that the organization is concerned about them.

c. The management should create an inclusive communication environment and educate the employees on working as a team to make them aware that the success of an organization depends on them working as a whole and not in isolation.

d. Also, the government, the National University Commission (NUC) as well as the governing councils in each institution should put in place policies that will allow institutions focus more on TQM measures and most importantly, provide funding for TQM based quality improvement programs.

e. The governing councils in each institution should also endeavor to choose the right leaders in top management positions as it is only the right leaders that can generate as well as trigger commitment from employees.

f. In addition, the top management leaders should have the understanding that the pursuit for quality efforts through the adoption of total quality management practices do result in a great level of employee commitment which correlates to competitive advantage.

g. Furthermore, there should be a department in charge of TQM and if possible sub-units in every faculty in order to cultivate a TQM culture and to make all the employees quality conscious and customer focused.

h. Employees should regularly interact with their customers (students) giving them advice and always willing to assist them.

i. Also, avenues to receive feedback and complaints from customers should be put in place. This will enhance the performance of employees and make them more competitive.

j. Benchmarking measures should also be put in place in order to compare performance with the best in the field with the aim of improving mode of operations.

References

Addae-Korankye, A. (2013). Total quality management (TQM): a source of competitive advantage. a comparative study of manufacturing and service firms in Ghana. *International Journal of Asian Social Science*, *3*(6), 1293-1305.

Adediran, O., Adediran, O. (2008). Total quality management: a test of the effect of TQM on performance and stakeholder satisfaction (Master's thesis). *School of Management, Blekinge Institute of Technology.*

Alamutu, S.A, Hotepo, O.M, Oyeobu, A.J., Nwatulegwu, B.I. (2012). An evaluation of total quality management practices on business performance of the Nigerian telecommunications sector: a case study of MTN Nigeria Limited. *Proc. ICCEM, 155-166*

Allen, M., Brady, R. (1997). Total quality management, organizational commitment, perceived organizational support, and intraorganizational communication, *Management Communication Quarterly*, *10*(3), 316-341. https://doi.org/10.1177/0893318997010003003

Ali, M., Shastri, R.K (2010). Implementation of total quality management in higher education. *Asian Journal of Business Management, 2*(1), 9-16.

Al-Rfou, A.N. (2012). Achieving competitive advantage through enterprise resource planning system (ERP). Empirical evidence from Jordan. *International Journal of Asian Social Sciences*, *2*(6), 805-857.

Blackburn, R., Rosen, B. (1993). Total quality and human resources management: Lessons learned from Baldrige Award-winning companies. *Academy of Management Perspectives, 7*(3), 49-66. https://doi.org/10.5465/ame.1993.9411302347

Camp, R.C. (1993). A bible for benchmarking, by Xerox, *Financial Executive, 9*(4),23-7.

Daft, R. (1991). *Management*. Chicago: Dryden Press.

Dale, B.G., Boaden, R.J., Lascelles D.M. (1994). *'Total quality management - an overview, managing quality* (edited by Dale, B. G.), New York: Prentice Hall.

Dixit, V., Bhati, M. (2012). A study about employee commitment and its impact on sustained productivity in Indian auto-component industry. *European Journal of Business and Social Sciences, 1*(6), 34–51.

Economou, V.P., Chatzikonstantinou, P.G. (2009). Gaining company's sustained competitive advantage, is really a necessary precondition for improved organizational performance? The case of TQM. *European Research Studies*, *12*(3), 83-100. https://doi.org/10.35808/ersj/233

EFQM (2020). The EFQM Model. *Retrieved from* http://www.efqm.org/ [Accessed 25 May 2020].

Farooq, M.S., Akhtar, M.S, Ullah, S.Z., Memon, R.A. (2007). Application of total quality management in education. *Journal of Quality and Technology Management*: *III*, (I1), 87-97.

Ganapavarapu L.K., Prathigadapa, S. (2015). Study on total quality management for competitive advantage in international business. *Arabian Journal Business Management Review*, *5*(3).

Ganguly, A. (2015). Exploring total quality management (TQM) approaches in higher education institutions in a globalized environment-case analysis of UK and Sweden. *British Journal of Education*, *3*(7), 83-106.

Gasperz, V. (2005). *Total quality control*. Catakan Keempat, Jakarta: PT. GramediaPustoka Utama.

George, J.M., Jones, G.R. (1996). *Understanding and managing organizational behavior*. California: Addison-Wesley Publishing Company, Inc.

Karia, N., Asaari, M. (2006). The effects of total quality management practices on employees' work-related attitudes, *The TQM Magazine*, *18*(1), 30-43. https://doi.org/10.1108/09544780610637677

Kothari, C.I. (2004). *Research methodology, methods & techniques* (2nd ed.). New Delhi: New Age International Publishers Limited.

Kruger, V. (2001). Main schools of TQM: the big five. *The TQM magazine*, *13*(3), 146-155. https://doi.org/10.1108/09544780110366042

Lamptey, S.O. (2009). *Quality management systems of Unilever Ghana limited* (Master's thesis). St. Clement University, Turks and Caicos Island.

Mathur, P. (2015). Achieving competitive advantage through employees. *International Journal of Arts, Humanities and management sciences, 1*(9), 66-71.

Mehra, S., Hoffman, J.M., Sirias, D. (2001). TQM as a management strategy for the next millennia. *International Journal of Operations & Production Management*, *21*(5/6), 855-876.

Moja, T. (2000). *Nigeria Education Sector Analysis: An analytical synthesis of performance and main issues.* World Bank: New York

Mullins, L. (2009). *Management and Organizational Behaviour, 5th Edition.* Portsmouth: Pitman Publishing.

Najafabadi, H.N, Sadeghi S., Habibzadeh, P. (2008). *Total quality management in higher education case study: quality in practice at university college of Borås* (Master's thesis). Institution for Engineering School, University College of Borås.

Ngambi, M.T., Nkemkiafu, A.G. (2015). The impact of total quality management on firm's organizational performance. *American Journal of Management, 15*(4), 69.

Ogini, J.A. (2020). Job promotion and employee commitment of public hospitals in Rivers State, Nigeria. *International Journal of Economics and Business Management, 6*(1), 10.

Ongori H. (2007). A review of the literature on employee turnover. *African Journal of Business Management,* 49-54.

Porter, M. (1980). *Competitive strategy; free press: techniques for analyzing industries and competitors.* New York.

Porter, M.E. (2008). The five competitive forces that shape strategy. *Harvard Business Review, 86*(1), 57-71.

Preacher, K., Leonardelli, G. (2018). Calculation for the Sobel test: An interactive calculation tool for mediation tests. *Retrieved July 17, 2018, from http://quantpsy.org/sobel/sobel.htm*

Ray, S.S, Nanda, S., Ota, R. (2016). Total Quality Management: A need for a Sustainable Competitive Advantage. *International Journal of Commerce, Business and Management (IJCBM), 5*(3).

Sadikoglu, E., Olcay, H. (2014). The effects of total quality management practices on performance and the reasons of and the barriers to TQM practices in Turkey. *Hindawi Publishing Corporation Advances in Decision Sciences, 2014*, 537605. https://doi.org/10.1155/2014/537605

Saunders, M.N., Saunders, M., Lewis, P., Thornhill, A. (2011). *Research methods for business students*, (5th ed.). India: Pearson Education.

Sobel, M.E. (1982). Asymptotic confidence intervals for indirect effects in structural equation models. In S. Leinhardt (Ed.) *Sociological methodology,* 1982 (pp. 290–312). American Sociological Association: Washington, DC. https://doi.org/10.2307/270723

Stevenson, W.J. (2012). *Operations management*, (11th Ed). New York: McGraw-Hill Inc.

Talib, F., Rahman, Z. (2012) Total quality management practices in manufacturing and service industries: a comparative study. *Int. J. Advanced Operations Management, 4*(3)155-176. https://doi.org/10.1504/IJAOM.2012.047634

Wang, H. (2014). Theories for competitive advantage. In H. Hasan (Eds.), *Being practical with theory: A window into business research* (pp. 33-43). Australia: Wollongong.

Wright, P., McMaham, G., McWilliams, A., (1994). Human resources and sustained competitive advantage: a resource-based perspective. *Int. J. of HRM, 5*(2), 301-326. https://doi.org/10.1080/09585199400000020

Yamane, T. (1967). *Statistics: An introductory analysis* (2nd ed). New York: Harper & Row.

Zheng, W., Sharan, K., Wei, J. (2010). New development of organizational commitment: a critical review (1960-2009). *African Journal of Business Management, 4*(1), 12-20.