AN EMPIRICAL ANALYSIS OF TOTAL QUALITY MANAGEMENT AND PERCEIVED CORPORATE IMAGE IN HIGHER EDUCATION MANAGEMENT

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Abstract
This study assessed the quality management practices in the Nigerian educational institution specifically the areas of quality input management, quality process management and quality output management. The primary objective of the study was to examine the effect that total quality management has on the corporate image of universities in Nigeria. In the light of the above four relevant hypotheses were formulated. The study is based on the data collected from the students of selected privates and public universities in Nigeria through the administration of questionnaires. Data collected were analyzed using a simple frequency table, regression analysis, Pearson correlation analysis and T-test. Findings show that quality input management has an effect on perceived corporate image, quality output management has an effect on perceived corporate image, there is no difference between private and public universities as regards their total quality management and how student perceive corporate image. Based on the findings, it was recommended that the concerted efforts of the stakeholders must be harnessed and geared towards improving the quality standards of Nigerian universities.

Keywords: Quality input management, Quality process management and quality output management and total quality management
Introduction.

Education in Nigeria is regarded as an instruments “par excellence” for effecting national development (Federal Republic of Nigeria, 2004, p.iii). This could be the reason why every scholar irrespective of the school of taught agrees to the fact that education is the bedrock of economic, political and technological development of a nation. A highly literate an economically productive, educated citizenry can contribute far more tremendously to a nation’s gross domestic product than a large pool of irrelevantly educated population. It is noteworthy and highly pathetical that for the past three decades Nigerian educational system continues to witness enormous quantitative growth at the expense of qualitative development. Thus, the current education reforms in the education sector in Nigeria in the areas of planning, curriculum innovation and teacher education, among others, are management mechanism to revamp the education industry to instill sustainable school quality reform.

Edwards Deming (1988) has proved so powerful that educators want to apply TQM in schools. Universities, however, have been slower to see the value of using TQM to improve the administration of the university. In 1990, Oregon State University endorsed TQM as its management philosophy and has experienced outstanding success in improving the operations of the university (Winn and Green, 1998). For universities, the quality concept is not new, and there has been a continuous discussion about the need for improving the quality of education. Efforts are being made to identify the characteristics of a world-class university and comparing them (Alden and Lin, 2004), to find benchmarks as a reference for quality improvement for any university regardless of its present quality level.

Keller (2006), an educationist and planner, noted that in the 21st century university administrators will be responsible primarily for three things: managing change, financial controls, and quality of service. This implies that they will manage new administrative configurations, changes in tenure, network of colleges linked through technology, as well as evolve strategies to manage interdisciplinary academic programmes. Keller (2006) argues further that university leaders will devote more time and ingenuity to controlling costs, increasing productivity, finding additional revenues, and vigorously promoting accountability. Additionally, the goal of maintaining quality will require university administrators to watch over the quality of teaching, advising, student services, administrative actions, as well as campus facilities.

TQM ensures that management adopt a strategic overview of quality and focuses on prevention and not detection of problems. It requires a mindset change to break down existing barriers (Ibid). Universities are established with the objectives of producing graduates who are worthy both
in learning and character; to conduct research and serve the community. The major goal of the university system is the production of quality graduates who will later manage various positions in both the private and public sectors. The major factors in the production of qualitative graduates revolve around admissions, examination administration, course administration, certification and the recruitment and retention of experienced and hardworking workers. Therefore, all these aspects need careful, rigorous, painstaking and collaborative efforts, with a view to producing world-class graduates for both national and international developments. The paper specifically focuses on the importance of teamwork and productivity of workers in higher institutions in Nigeria in ensuring a high quality of the products – graduates to meet the society’s assigned goals.

**Statement of the problem**

The quality of education output is the function of its input. There is also no dispute over the fact that selection is needed to have high quality input learners to produce high quality output. According to Mahmoud (2013), the problem of education in Nigerian schools today is the politicization of education. Admissions to universities, colleges, polytechnics are sometimes guided by politician’s not academic performance. Parents today use their political offices or influences for the education of their children. He also argued that parents have paved ways to examination malpractices in order to brighten the chances of their wards in quality examinations to higher institutions. Also in the Nigerian universities for the students to acquire the desired skill to be able to function effectively, the necessary gadgets are needed to be supplied to the lecturers to teach the students. The state of workshop in most schools is such that cannot permit the stimulation for any worthwhile learning. Lack of equipment’s and necessary facilities hinders the progress of skill-based courses. Nweke (1989), Nwokolo (1993), Ibeneme (1994) discovered that the discrepancy between school workshop facilities and the actual work facilities may adequately account for the amount of retraining given to Nigerian university graduates before they can effectively perform in the industries. The quality of this equipment’s left one in doubt as to the quality of supply. According to Obarenren and ibabor (2012), No educational system rises above the quality of her teachers anywhere in the world. Thus the growth and development of skill- based courses in any country of the world largely de-pend on the quality and adequacy of teachers in these areas of professional endeavor. This is why Gidado (1995) said that the major problems of teacher education in Nigeria is that the teacher that are being trained are not sufficiently prepared to meet the complex demand of the teaching profession in Nigerian schools. It is an educational truism that a teacher can only teach what he or
she knows. It is as a result, that this study is poised to examine the effect of quality input on perceived corporate image of Nigerian Universities.

The lack of continuous professional development for faculty members means that many are ‘stuck’ with archaic pedagogical approaches, obsolete course content and irrelevant theoretical frameworks, some of which may have been disproved, updated or discarded. It is as a result, that this study is poised to examine the effect of quality process management on perceived corporate image of Nigerian universities.

Ali (2006) stated that the economic advancement of any nation does not necessarily depend on its natural resource endowment, but increasingly on the level of technological innovation capabilities. Teaching facilities and equipment help to stimulate interest and produce a sound and well-grounded skilled graduates (Anthony 2005). It is as a result, that this study is poised to examine the effect of quality output management on perceived corporate image of Nigerian universities.

**Objective of the Study**

1. To determine the effect of quality input management and perceived corporate image
2. To ascertain the effect of quality process management and perceived corporate image
3. To find out if there is any significant relationship between quality output management and perceived corporate image
4. To determine the effect of type of university on total quality management and perceived corporate image

**Literature review**

TQM has been adopted as a management paradigm by many organizations worldwide. Quality movement across the world starts with quality improvement projects in manufacturing companies. But later it spread to other service institutions, including banking; insurance, non-profit organizations, healthcare, government and educational institutions. TQM is the process of changing the fundamental culture of an organization and redirecting it towards superior product or service quality (Gaither, 2000).

TQM can be defined as a general management philosophy and a set of tools which allow an institution to pursue a definition of quality and a means for attaining quality, with quality being a continuous improvement ascertained by customers’ contentment with the services they have received (Michael, et. al. (1997).

According to Witcher (1990) TQM is composed of three terms:

- Total: meaning that every person is involved, including customer and suppliers,
Quality: implying that customer requirements are met in accordance to specification.
Management: indicating that senior executives are committed.
TQM may also be seen as; doing things right for the first time, striving for continuous improvement, fulfilling customers’ needs, making quality the responsibility of every employee.
Gregory (1996) summarized the TQM philosophy as contained in the above definition are:
• A relentless hunt for ways to improve quality.
• Involvement of all employees
• Managerial leadership
• Corporate culture, and
• Customer focus.

The TQM building blocks

Source: Center for collective Quality Information for ADDC members (2007) Quality Management System; TQM building blocks retrieved from;

Quality in higher education

TQM in Higher Education: According to the reports of UNESCO and the World Bank, social and private returns of higher education are less than those of primary and secondary education, It is estimated that social return of primary education is 25% while that of higher education is only1%. This has led to the thinking that the returns of higher education are largely personal/private and therefore, subsidy on this should be reduced.
Du rlabhj and Fusilier (1999) states that customer empowerment in education requires greater input from students as well as from the business community that will eventually employ them and this in term will streamline education and eliminate any vestiges of the esoteric academic “ivory tower” that exist in business school course work. The benefits of student empowerment in the classroom must be weighed against the need for control to achieve minimum educational goals and adequate and fair evaluation.

Arikewuyo (2004) sees quality in education to be judged by both its ability to enable the students to perform well in standard examinations and relevance to the needs of the students, community, and the society as a whole. He finally concludes that quality serves as determination of gradations based on standards of excellence beneath which a mark of inferiority is imposed or adduced and above which grades of superiority are defined. However, quality assurance is related to quality control, but it functions is in a rather proactive manner in the sense that quality control serves as series of operational techniques and activities used to fulfill that requirement are met. While, quality assurance goes beyond that, because it extends the focus from outcomes or outputs to the process which produces them.

**Corporate image**

According to Steven Howard,(1999), the image is a dynamic and a profound affirmation of the nature, culture and structure of an organization. This applies equally to corporations, businesses, government agencies and education. The corporate image communicates the organization’s mission, the professionalism of its leadership, the caliber of its employees and its roles within the marketing environment. Every organization has a corporate image, whether it wants it or not. When properly designed and managed, the corporate image will accurately reflect the level of the organization’s commitment to quality, excellence and relationships with its various constituents, including current and potential customers, employees and future staff, competitors, partners and the general public at large.

Dutton and Dukerich (1991), defined image as the way organization members believe others see the organization, to gauge how outsiders are judging them. Corporate image is the mental picture of an organization held by its audiences regarding this organization. The mental picture formed in one’s mind about an organization upon hearing its name or seeing its logo is about this organization’s corporate image (Gray & Balmer, 1998). According to Hatch and Schultz (2002), image is how organization members or others see the organization or the general impression organization forms in people’s minds.
Kazoleas et al (2001) state that there are multiple changing images within each individual and these images are affected by certain factors. The formation of corporate image is defined as a comprehensive and multi-stakeholder process (Gray & Balmer, 1998) and factors such as communication sources, terminology, branding, logos and emblems, relations with media and customers, building architecture are effective in image formation. Besides, the relations with customers and the actions and statements of top managers simultaneously affect organizational identity and image (Hatch & Schultz, 1997).

When education institutions are concerned, the experiences in application period, advertising, public and social relations, recruitment activities are highly effective in creating both a first impression and image and this perception affects the decision-making process on which school to apply (Collins & Stevens, 2001). Another factors that determine the image of education institutions are name awareness, academic properties, sports and social facilities, physical environment (Arpan, Arthur & Zivnuska, 2003), personal and organizational environment, demographic features, environmental features, admission criteria, sports facilities, campus size, academic programmes, library facilities (Kazoleas, Kim & Moffit, 2001), academic staff and relations with students, stories about the school (Paden & Stell, 2006).

Some researchers (Hatch & Schultz, 2002; Dutton, Dukerich & Harquail, 1994), consider a corporate image to have two dimensions. The external image reflects how people outside the organization perceive the organization. Internal image, on the other hand, reflects how organization members see the organization. External image is composed of impressions of, for example, suppliers. However, organization members belong to the external group at the same time, because they are also consumers of the products and outcomes produced by the organization and they follow the news about the organization on the media.

**Service quality and corporate image**

Research in service encounter three main dimensions: first dimension is developed by Flavian et al.(2004) for banks, which represent corporate quality like access to services, service offered, personal contact, security and reputation. Second dimension is emphasized by Lehitinen and Lehitinen (1991) and argued that it is having an effect on corporate image as well. This dimension is all about tangible cues, in other words physical quality of service like atmospheres, décor and ambience, layout and lighting, appearance of buildings and grounds. Second part of the second dimension is about the contact personnel, in other words, interactive quality of service like
friendly and courteous personnel, appearance of employees, attitude and behavior, caring staff and competence of the employees.

System theory and the educational system

By systems, Bertalanffy (1971) means complexes of elements standing in interaction. The closed system is called closed if it neither takes in any remits matter (only energy exchange is possible and taken into account). The system is called open if there is a continual input and output of both energy and matter in it. Also, Griffiths (1964) added that all systems except the smallest have sub-systems and all but the largest have supra systems, which are their environment. Each system or subsystem conceptualized as having a boundary. The boundary of a system is the component that separates the system from its environment and filters the inputs to and the output from the system. Inputs, processes, and outputs of an organization are all stages in the system's cycle of events. The open system theory also emphasizes the necessary dependence of any organization upon its environment. Also Richard (1964) defines a system as an organized or complex whole, an assemblage or combination of things or parts forming a complex or unitary whole.

Schmuck (1977) advanced that schools are essentially living systems and that without people they are nothing but concrete and paper. As Living system, they are in constant process of interaction with their communities and other institutions in them. They see the school system as a living and dynamic organization, and though a complete system on its own, yet it is a sub-system of the nation's educational system which in turn subsists in the larger social supra system called the environment. The basis of using the systems approach also finds strength in Dale’s (1984) submission that: an organization should be studied not merely as a formal arrangement of superior and subordinates or as a social system in which people influence each other as a total system in which the environment, the formal arrangement, the total systems and the technical system constantly interacting.

Methodology

The study adopted descriptive survey research design, in which questionnaire was employed in collecting data from the respondents on the variables studied. Participant for the study comprised 250 students randomly selected from two universities. Out of the 250 respondents, 120 were final year students of business management department at a private university and 130 final year students in the faculty of business administration in a public university.
The questionnaire was the instrument used for this study. The questionnaire was divided into three sections; the first section contains personal information of the respondents which includes gender, age, marital status, educational level, program/course, the name of the university. While the second section contained questions relating to total quality management which was divided into three sub-components which includes quality input management, quality output management and quality process management. The third section contained questions relating to perceived corporate image. The questionnaire was formatted on a five-point Likert scale of strongly disagree (SD), Disagree (D), undecided (U), agree (A), strongly agree (SA). The Cronbach’s alpha test was used to test the reliability of the research instrument.

Copies of the questionnaire were distributed by the researcher with the help of two experienced research assistants. Out of the 250 copies administered, 225 were retrieved for analysis, which represented 90% of the total. Data were analyzed using Pearson correlation coefficient to examine the significant relationship between corporate image (dependent variable) and total quality management. (Independent variable).

Testing of Hypotheses
Hypothesis 1& 2
H₀: Quality input management does not have an effect on perceived corporate image.
H₀: Quality process management does not have an effect on perceived corporate image.

Results
Table 1: Regression analysis on the effect of quality input management and perceived corporate image

<table>
<thead>
<tr>
<th>Coefficients</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td>2.709</td>
<td>.262</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Good admission policies and procedures for attracting quality students</td>
<td>.145</td>
<td>.054</td>
<td>.195</td>
<td>2.677</td>
</tr>
<tr>
<td>Lecturers are competent, therefore the university has good recruiting policies and procedures</td>
<td>.155</td>
<td>.061</td>
<td>.193</td>
<td>2.560</td>
</tr>
<tr>
<td>Quality supply systems that enable her to purchase quality equipment.</td>
<td>.014</td>
<td>.046</td>
<td>.021</td>
<td>.303</td>
</tr>
<tr>
<td>R</td>
<td>.343</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>R²</td>
<td>.117</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The result in table 1 reveals that the independent variable (quality input management) contributes significantly to the perceived corporate image. It yielded a co-efficient of regression \( R = .343 \) and adjusted \( R^2 = .105 \) which implies that 10.5 per cent of the total variance in corporate image is accounted for by the quality input management. The table also indicates that the analysis of variance of the regression data produced an F-ratio value of significant at 0.05 level (\( F = 9.790; p < 0.05 \)) which therefore hold that quality input management has significant effects on corporate image.

Table 2: Regression analysis on the effect of quality process management and perceived corporate image

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>T</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td>2.259</td>
<td>.299</td>
<td></td>
<td>7.548</td>
</tr>
<tr>
<td>Quality strategic management plans.</td>
<td>.115</td>
<td>.057</td>
<td>.151</td>
<td>2.013</td>
</tr>
<tr>
<td>Quality lecture delivery</td>
<td>-.014</td>
<td>.054</td>
<td>-.022</td>
<td>-.257</td>
</tr>
<tr>
<td>Lecturers have good class management</td>
<td>.045</td>
<td>.051</td>
<td>.068</td>
<td>.884</td>
</tr>
<tr>
<td>Courses are life applicable</td>
<td>.056</td>
<td>.040</td>
<td>.095</td>
<td>1.412</td>
</tr>
<tr>
<td>Quality research by professors and lecturers</td>
<td>.173</td>
<td>.053</td>
<td>.254</td>
<td>3.239</td>
</tr>
<tr>
<td>The university committed community development</td>
<td>.022</td>
<td>.018</td>
<td>.078</td>
<td>1.236</td>
</tr>
<tr>
<td>Buoyant exchange programs and international linkages</td>
<td>.120</td>
<td>.056</td>
<td>.141</td>
<td>2.150</td>
</tr>
<tr>
<td>Quality infrastructural facilities</td>
<td>-.024</td>
<td>.060</td>
<td>-.037</td>
<td>-.401</td>
</tr>
<tr>
<td>Enabling environment for learning, teaching and researching</td>
<td>-.058</td>
<td>.056</td>
<td>-.089</td>
<td>-1.026</td>
</tr>
</tbody>
</table>

\( R = .437 \)
\( R^2 = .191 \)
\( Adj. R^2 = .157 \)

\( F = 5.645 \)
Overall Sig. \( .000 \)

\(*p < 0.01 \) **\( p < 0.05 \) ***\( p < 0.1 \)
The result in table 2 reveals that the independent variable (quality process management) contributes significantly to the perceived corporate image. It yielded a co-efficient of regression R = .437 and adjusted R² = .157 which implies that 15.7 per cent of the total variance in perceived corporate image is accounted for by the quality process management. The table also indicates that the analysis of variance of the regression data produced an F-ratio value of significant at 0.05 level (F=5.645; p < 0.05) which therefore hold that quality process management has significant effects on perceived corporate image.

**Hypothesis 3**

H₃ₒ : There is no significant relationship between quality output management and perceive corporate image

<table>
<thead>
<tr>
<th>Correlations</th>
<th>output</th>
<th>Image</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Correlation</td>
<td>1</td>
<td>.396**</td>
</tr>
<tr>
<td>Output</td>
<td>Sig. (2-tailed)</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>225</td>
</tr>
<tr>
<td>Pearson Correlation</td>
<td>.396**</td>
<td>1</td>
</tr>
<tr>
<td>Image</td>
<td>Sig. (2-tailed)</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>225</td>
</tr>
</tbody>
</table>

**. Correlation is significant at the 0.01 level (2-tailed).**


**Coefficient of Determination (C.O.D)**

The coefficient of determination is obtained using formula C.O.D = \( r^2 \times 100\% \)

Where \( r = \) Pearson Correlation

Thus;

C.O.D = \((0.396)^2 \times 100\%\)
C.O.D = 0.156816 \times 100\%
C.O.D = 15.68\%

The Pearson correlation of \( r = 0.396 \) therefore implies 15.68 % shared variance between quality output management and perceived corporate image.

**Interpretation of Results**

The relationship between the variables (quality output management and perceived corporate image.) was investigated using Pearson correlation coefficient. The results from table above show that there is a significant positive correlation of (0.396) between both variables at 0.0001 level of significance.

Thus, as obtained from the table \( \{r = 0.396, p < 0.05, n = 225\} \)
Hypothesis 4
H₄₀: There is no difference between private and public universities as regards their total quality management

<table>
<thead>
<tr>
<th>T-Test</th>
<th>Group Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Name of university</td>
</tr>
<tr>
<td>Input</td>
<td>Private university</td>
</tr>
<tr>
<td></td>
<td>Public university</td>
</tr>
<tr>
<td>Process</td>
<td>Private university</td>
</tr>
<tr>
<td></td>
<td>Public university</td>
</tr>
<tr>
<td>Output</td>
<td>Private university</td>
</tr>
<tr>
<td></td>
<td>Public university</td>
</tr>
</tbody>
</table>

The table above revealed the descriptive statistics of the two universities involved in this study based on each stage of the total quality management, i.e. input quality management, process quality management and output quality management. The table further revealed that the private university has the highest mean values in all the three stages of the total quality management. However, the public university also recorded high mean values in all the aspects of the total quality management.

<table>
<thead>
<tr>
<th>Independent Samples Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Levene's Test for Equality of Variances</td>
</tr>
<tr>
<td>F</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Input Equal variances assumed</td>
</tr>
<tr>
<td>Input Equal variances not assumed</td>
</tr>
<tr>
<td>Process Equal variances assumed</td>
</tr>
<tr>
<td>Process Equal variances not assumed</td>
</tr>
<tr>
<td>Output Equal variances assumed</td>
</tr>
<tr>
<td>Output Equal variances not assumed</td>
</tr>
</tbody>
</table>
The table above revealed the results of the examination of significant differences between the two groups based on the three aspects of the total quality management (f cal = 0.48, 2.138 and 2.559 and sig. values = 0.827, 0.145 and 0.111 respectively). It was revealed that there was no significant difference between the two universities as regards perception of the students about their university's adoption of total quality management practices. The t cal for each of the aspects was also revealed by the table.

Conclusion/ recommendation
Going by the result of this study, it is established that there is a significant relationship between total quality management and perceived corporate image in Nigerian universities. It was also discovered that quality input management as well as quality output management has significant effect on perceived corporate image. The paper also concluded there is no difference between private and public universities as regards their total quality management and how student perceive corporate image. Based on the findings, it is recommended that;

- Nigerian universities should ensure that admission policies and procedures for attracting quality students should be based on merits; they should also avoid politicization of admission from the society. Concerted efforts of the stakeholders must be harnessed and geared towards improving the quality standards of Nigerian universities.
- Universities should ensure that they maintain quality supply systems that will enable her to purchase quality equipment’s and materials that will be needed by the lecturers to teach the students.
- Universities should put in place processes, standards and support infrastructure that will enhance the updating of their staff and also to attract graduates to return back to the institution to further their studies e.g. master’s degree as they will find this most conducive.
- Universities should maintain quality lecture delivery amongst lecturers and students and should adopt continuous professional development for the faculty members to avoid obsolete course content. Also incentives should be provided by the institutions to encourage lecturers to produce good degrees, in this regards it is possible to establish schemes which rewards lecturers for publishing in high impact and reputable journals.

References:
Cambridge University press
SCHOOLING


