

Total Quality Management Training and Development Practice and Performance in Rivers State University

Emmanuel Opuene Davies, Ph.D

Department of Political Science
Rivers State University, Nkpolu-Oroworukwo
Port Harcourt

Graham Nsiegbe Ph.D

Department of Political Science
Rivers State University, Nkpolu-Oroworukwo
Port Harcourt

Ekeanyanwu Isaac Egbuchulan

Department of Political Science
Rivers State University, Nkpolu-Oroworukwo
Port Harcourt

DOI: [10.56201/jpslr.v10.no2.2024.pg75.99](https://doi.org/10.56201/jpslr.v10.no2.2024.pg75.99)

Abstract

Competitive advantage among organizations in recent times, caused by the impacts of globalization has made organizations to direct their efforts towards achieving quality in all their services as a strategy to remain active in the volatile global environment of business. This paper assesses the Total Quality Management Training and Development Practices and Performance in Rivers State University (RSU). The Goal-Setting Theory is adopted by the paper as its theoretical foundation. The survey research designed is employed as a strategy to generate and analyze data. Data was generated via the use of a four point likert scale structured questionnaire administered and retrieved from 400 respondents representing the sample size of the paper. The sample size was drawn from the population of the paper consisting of 2,012 academic and non-academic staff. Generated data for the paper was analyzed via the use of descriptive statistics while hypothesis was tested using the chi-square. The paper found out that; there is a significant relationship between total quality management strategy of training and development practice and performance. As part of its recommendations; the paper recommends that the management of RSU should do more in implementing total quality management policies in order to continue to render quality services.

Keywords: *Quality, Management, Total, Development, Performance.*

Introduction

The need to ensure competitive advantage among organizations in recent times caused by the impacts of globalization has no doubt made organizations to direct their efforts towards achieving quality in all their activities. Practices that will satisfy the ever-increasing expectations of their clients have now become the priority.

At the global level, the idea of quality developed as a most competitive weapon for organizations to survive in the competition and succeed in their respective industries (Sathishkumar and Karthikeyan, 2014). Many countries and organizations around the world in their effort to be flexible, effective and efficient gaining the competitive advantage in business environment have begun to recognize and understand the benefits and importance of quality revolution in terms of total quality management (TQM). The 1990s have witnessed spreading of the quality revolution to private and public service organizations from its cradle in manufacturing organizations (Jamal and Hassan 2015).

During the recent decades raising quality to a strategic level has become an essential condition of successful operation in every field of the economy. No production or service organization can avoid applying quality management tools and methods on a system level. These systems have developed parallel with the change of the concept of quality and partly this change may have forced the evolution and application of various quality approaches and systems (Topar, 2007). Similarly, Lemieux cited in Karia, Hasmi & Asaari (2006) expressed thus: Total Quality Management (TQM) is a business management approach that gained greater popularity in the private sector in the United States beginning in the early 1980s, Total Quality Management (TQM) is essentially management philosophy and it has become the preferred approach for improving quality and productivity in organizations. Various terminologies have been used to describe the general concept of TQM. These include total quality control, total quality leadership, total quality improvement program, continuous quality improvement and total quality service.

TQM has gradually spread from the manufacturing to the service sector and most recently into the public sector. In this environment, TQM is used to implement quality management (QM) strategies related to state founded education and human resources, although it has other applications within government in terms of infrastructures (roads, sewage treatments and water provision), the ministry and law enforcement (Abdulaziz, 2014). According to Mary and Marilyn (1996:51) Many US Companies have redirected their company philosophy through the adoption of Total Quality Management (TQM) techniques. TQM has been utilized in the private sector since the mid-1980s to help struggling US Companies recover their profitability. Many governmental agencies have recently decided to implement TQM in the organizations, with hope that it will have the same effect as it has had in the private sector. The idea of applying TQM principles in the government has resulted because of the overall shift in business philosophy to focusing on customer needs.

No doubt, competition has become more challenging today than ever before while customer expectations of service quality are higher than ever too. To ensure high quality of service to the customers, organizations are adopting management strategies that will help ensure improved performance level. Quality has emerged to be the key component and critical factor.

A considerable amount of the TQM literature has investigated whether there is a relationship between TQM practices and organizational performance. Empirical studies reveal contradictory findings. For example, substantial research provides empirical evidence that there is a positive relationship between TQM implementation and organizational performance (Bou-Llusar et al. 2009; Tari, Molina and Castejon 2007; Kaynak, 2003; Douglas and Judge, 2001; Easton and Jarrel, 1998). On the other hand, many studies indicate that there is a weak or no relationship between TQM practices and organizational performance, especially financial results (Corredor and Goni, 2010; Macinati, 2008; Benner and Veloso, 2008; Samson and Terziowski, 1999; Dow, Samson and Ford, 1999; Ho, Duffy and Shih 2001).

Several empirical studies argue that the social, cultural and economic conditions of a country might have the potential to affect TQM practices within a company (Kull and Wacker, 2010; Flynn and Saladin, 2006; Anwar and Jabnoun, 2006; Yoo, Rao and Hong, 2006; Prasad and Tata, 2003; Lagrosen, 2002; and Dahlgaard, Kristensen and Kanji, 1998). For example, Kull and Wacker (2010) found significant differences in the implementation of quality management practices among companies located in the East Asian cultures of China, Taiwan, and South Korea.

In Nigeria, observations have shown that many organizations in the public sector have been suffering from ineffectiveness, redundancy and unproductivity caused majorly by the inability of the management to subject its services and processes to the rigours of total quality management practices. In most cases the idea of neglecting total quality management practice in public service has given rise to the avoidance of quality training programmes for the public servants as well as poor regard and negligence of customer focus, satisfaction and feedback in majority of government owned institutions. This problem to a reasonable extent has affected the job performance level of the workers in the public sector unlike their counterparts in the private sector.

The problem of poor quality service delivery in Nigerian public service is rather tremendous. Total quality management practices are not yet given a pride of place. The top management in these organizations do not have the much needed motivation to ensure its effective implementation. Many have remained skeptical about the workability of the principle of total quality management practices in improving public service delivery. This situation has adversely affected the job performance level of the employees in these organizations.

This paper examines total quality management training and development practices and performance in Rivers State University. The paper is guide by a single hypothesis which

was derived from the question implied by the paper. The paper is thus approached in five interrelated parts as follows:

- Part 1: Introduction
- Part 2: Theoretical foundations and conceptual explanations
- Part 3: Method
- Part 4: Data Presentation and Analysis
- Part 5: Conclusion/Recommendations

Analytical Foundations

Goal-Setting Theory

This theory was propounded by Edwin Locke (1968), it is a psychological theory that posits that specific challenging goals motivate people to achieve more than they would if they had no goals or only vague general goals. According to the theory, there are five key elements that must be present for goals to be effective; they must be specific, challenging, achievable, relevant and time-bound. According to Onah (2015), effective goal-setting principles are:

Clarity: A clear, measurable goal is more achievable than one that is poorly defined. In other words, be specific! The most effective goals have a specific timeline for completion.

Challenge: The goal must have a decent level of difficulty in order to motivate you to strive toward the goal.

Commitment: Put deliberate effort into meeting this goal. Share your goal with someone else in order to increase your accountability to meet that goal.

Feedback: Set up a method to receive information on your progress toward a goal. If losing 30 pounds in four months turns out to be too hard, it is better to adjust the difficulty of your goal mid-way through the timeline than to give up entirely.

Task complexity: If a goal is especially complex, make sure you give yourself enough time to overcome the learning curve involved in completing the task. In other words, if a goal is really tough, make sure you give yourself some padding to give you the best chance at succeeding.

Locke (cited in Onah, 2015) listed certain important features of goal-setting theory as follows:

The willingness to work towards attainment of goal is main source of job motivation. Clear, particular and difficult goals are greater motivating factors than easy, general and vague goals.

Specific and clear goals lead to greater output and better performance. Unambiguous, measurable and clear goals accompanied by a deadline for completion avoids misunderstanding.

Goals should be **realistic and challenging**. This gives an individual a feeling of pride and triumph when he attains them, and sets him up for attainment of next goal.

The more challenging the goal, the greater is the reward generally and the more is the passion for achieving it.

Better and appropriate feedback of results directs the employee behaviour and contributes to higher performance than absence of feedback.

Feedback is a means of gaining reputation, making clarifications and regulating goal difficulties. It helps employees to work with more involvement and leads to greater job satisfaction.

The theory is not without some limitations. They are as follows

At times, the organizational goals are in conflict with the managerial goals. Goal conflict has a detrimental effect on the performance if it motivates incompatible action drift.

Very difficult and complex goals stimulate riskier behaviour.

If the employee lacks skills and competencies to perform actions essential for goal, then the goal-setting can fail and lead to undermining of performance.

There is no evidence to prove that goal-setting improves job satisfaction.

According to Onah (2015:303-304) the theory suggests that employees can be motivated by goals that are specific and challenging but achievable. Setting goals that are challenging will impel people to focus their attention in the right place and apply more efforts or inputs towards their job in other words, motivate them towards higher performance. To Locke and Lathan (cited in Onah2015:303) it is useful for people to set and strive for goals, however the goal-setting process is useful only if people understand and accept the goals. The theory is a technique used to raise incentives for employees to complete work quickly and effectively. It also leads to better performance by increasing motivation and the efforts, but also through increasing and improving the feedback quality.

By implication, meeting the goal of student's satisfaction in quality service is one of the most critical goal attainments facing the staff of the Rivers State University (RSU). Due to the fact that the staff of the institution have accepted and understood the goal of ensuring quality standard in the delivery of their services, frantic efforts have been exerted in realizing this specific difficult task. As a result, higher level of job performance is recorded among staff.

Despite how challenging and difficult it is to provide quality service to the students in recent times the staffers of the Rivers State University (RSU) are rather motivated and greatly spurred to higher job performance. Their goal-based orientation of giving their students quality and standard functional education has remained a sine-quo-non to improvement in the job performance of the workers.

Conceptual Explanations

As a concept that has been in existence for many decades, quality has attracted varied definition from social scientists overtime. For instance in the late nineteenth century, it is ascribed to the routine inspection of products conducted to make sure that the agreed production standard is adhered to by the production industries. However, as organizations came to recognize the impact of quality, the concept became widened from the initial technical and inspection focus to organization-wide focus.

Quality has to do with the level of utility expected by the consumer from products and services. In the words of Smith (2000), there now emerged the new thinking of quality

denoted by the “big Q” from the old thinking denoted by the “little q”. According to him, the old thinking was narrow-minded focused only on products control and led by inspectors and experts alone. The new thinking however is strategic and for everyone in the organization, which is all about improvement. Quality in education has to do with the creation of an enabling atmosphere where collaboration among the relevant stakeholders (government, community and parents) is fostered in a bid to facilitate the attainment of the required educational competencies adequate for the present and future need of the nation (Arcaro, 2005).

Fuzi (2011) observed that different definitions of quality led to confusion in the field of quality. Powel (1995) in a similar vein opined that the attribution of the term ‘quality’ to education is ambiguously notorious as varied stakeholders attribute different meaning to it. Nevertheless, one of the ingredients required to compete is the attainment of the best standard often referred to as ‘quality’ both at home and at the international market (Harvey, 1995).

Shiba, Graham and Walden (1993) define quality as a concept that must conform to the following parameters:

Fitness to standard - conformance to the specification

Fitness to use - conformance to the expected use

Fitness to cost - conformance to the expected use and the expected price.

Fitness to latent requirements - conformance to unexpected needs.

Crosby (1979) while contributing to the definition of the term simply presents quality as adherence to acceptable standard, while Deming (1986) one of the earliest apostles of quality related it to the extent to which conformity in standard, predictability and dependability is jointly achieved at the minimum cost that is affordable to the average consumer and Juran (1989) captured it as fitness for use of purpose.

Still on what quality connotes, Anil Kumar, Poornima, Abraham and Jayashree (2006) viewed quality from a broader perspective to include all features of a product which satisfy customer needs. To them, before any product can be adjudged to be qualitative, it must possess the following attributes: reliability, durability, suitability and above all customer satisfaction.

Even though, the word quality can be concluded to have no single universal definition but one common ground in all the various definitions is that the end user interest is of paramount importance, hence it is highly imperative that customer satisfaction must stand out as one of the primary objectives of any organizations.

Quality Dimensions in the University Education

Quality as observed from the perspective of Arora (2010) is an integral part of human

activity, which is a sustained and continuous positive progress in the capacity of a service or product. Quality dimensions in education can be classified into:

Fitness of purpose: this requires that the reason for demanding the service or product in the first place be adequately fulfilled. As regards educational sector therefore, the mandate remains the turning out of seasoned capable hands to foster development not just in the country concerned but also all over the world. More or less, it encompasses the realization of the vision and mission of the institution.

Value of money: basically, in every investment there must be return and services rendered must at least equate the financial value expended by the service or product consumer. When translated to the operation of higher educational institutions in Nigeria therefore, the periodic sought of accountability depicts the process of ensuring that government investment in the schools reflects on the services delivered to the student in terms of teaching, contribution to national development through research and community service. Other stakeholders in the education sector such as parents, students and the school community also require equivalent value for financial resources committed in the sector.

Transformation: this is the process of enhancing or empowering students to acquire new skill or knowledge.

Excellence: as an embodiment of education itself, school experience is highly cherished and thus, enormous finance is committed to ensuring that conducive learning environment is student and staff alike. While presenting a six-criterion framework for understanding quality dimensions, Owlia & Aspinwall (1996) indicated the following for adoption in the university system.

Table 1: Quality Dimensions in Higher Education

Dimensions	Features
Tangible	Adequate facilities Unfettered access Conducive and charming learning atmosphere Supporting Hygiene facilities like (accommodation, extra-curricular enhancing facilities etc.)
Competency	Adequate and seasoned Academic staff Adequate technical knowhow with supporting qualifications Effective communication skill in addition to possessing prerequisite Experiences
Attitudinal prowess	Adequate attention to the needs of the students

	Capability to render assistance when required services Emotional commitment to the aspirations of the students
Curriculum	Adequacy of course content with job performance after school and effective Communication skills Engaged scholarship among diverse fields Adequate technical skills
Knowledge Transfer	Presentation efficiency Organized and conciseness Consistency and objectivity of test tools Effective Feedback mechanism
Consistency and Reliability	Truthfulness Rewarding originality Effective conflict management skills

Source: Sudha, T. (2013)

Concept of Total Quality Management, TQM

TQM like any other social science concepts has been subjected to definitional dilemma in view of the perspective diversity that has characterized the style of social science commentators. For instance, Boaden (1997) opined that an attempt at defining TQM is similar to targeting a moving object. However, a common thread in the definitions of TQM revolves around the fact that it is a set of laid down strategies that moderate management approach to running an organization. Through it, the realization of the pre-set objectives are facilitated. Fuzi (2011) is of the view that most of the definitions can be classified as follows:

The matching of the specified criteria upheld as standard gauge that a product or service is expected to meet. This focuses on the capacity of the product or service to match consumer expectation in terms of utility.

To properly establish the above, Ross (1995) for instance examine TQM from philosophical perspective of the management for a sustained improvement in the performance of a product or service to meet and even surpass the expectations of the consumers. This he insisted can be made possible by the employees that must have displayed a high level of innovation, commitment, team work in a deliberate move to beat competitors.

Similarly, Dale, Wu, Zain, Williams and Vander (2001) define TQM as an encompassing concept housing every ideas relating to product and service quality. Oakland (1993) on the other hand examined TQM from the competition perspective when he described it as the deliberate attempt to surpass colleagues in the same business through product uniqueness achievable through product design, flexibility and cost.

In line with this perspective, though in a broader way, Shiba *et al* (1993) sees the concept as emerging system of remaining relevant in the ever-dynamic market environment. Still on what TQM connotes, Dahlgaard, Kristensen & Kanji (1994), described quality as a corporate strategy aimed at achieving an increased satisfaction of the consumers through product differentiation made possible by the employees in the organization. Johnson (2013) advanced a quantitative approach to the definition of TQM when he related it to the concerted effort engineered into a product or service with the intention of addressing the aspiration of the consumers through the commitment of the organizational employees.

In a broader sense, Weihrich, Cannice and Koontz, (2008) view TQM as a long-term commitment to the sustained upgrade of customers' utility in a product or service made possible by the employees. To Shiba *et al.*, (1993), Dean and Bowen (1994), Vuppalapati, Ahire and Gupta (1995) and Robins and Coulter (2009), TQM can be defined as a philosophy of management directed at improving the satisfaction derivable from a product or service in line with the expectation of the consumers.

Steingrad and Fitzgibbons (1993) while subscribing to the notion that TQM is a concise set of activities and process used to reduce production hitches noted that the essence of the concepts is to ensure that effectiveness and efficiency both in the production and use of the product or service is achieved. Juran (1989), one of the earliest apostle of TQM related the concept in a simple way as "fitness for use" or purpose. To him, quality can best be defined from customer's perspective. He equally highlighted quality planning, improvement and control as the idea behind the concept of Quality trilogy.

Ishikawa (1985) another quality expert argued that quality management is characterized by the strategic goal that is the long-term goals of the organization that are focused on customer's preferences such as tastes, likes and even applications. He explained that the goal of every industry is to reap their investments immediately, though, this may be possible in some cases, but however, quality initiative may take a little longer time to pay back. Deming (1994) while trying to define TQM advocated that the issue of cost should also be paramount, and to that, he explained quality from a trust angle which translates to the extent to which consumers can rely and depend on the product or service in facilitating a certain level of utility with minimal cost.

Evolution of Total Quality Management (TQM)

In the year 1949, the committee of scholars, government officials, engineers and other seasoned researchers formed by the Union of Japanese Scientists and Engineers (UJSE) to address the dwindling economy of Japan aftermath WWII signals the evolution of the idea

of TQM (Powel, 1995). This committee was commissioned to champion a considerable improvement in the quality of lives of the Japanese through product and service standardization. With the influence of Deming and Juran, the committee created a curriculum on statistical quality control for Japanese engineers (Walton, 1986). In the early 60s, with the support of 'quality experts' abroad explanation was given to the term. Quality thus assumed an encompassing status that revolves around all organizational activity rather than its previous limitation to products and services inspections.

In each department therefore, the need to maintain a specified production standard thus became the order of the day. Sequel to this, departments became responsible for their actions to the extent that the production cost of inferior products are borne by those found wanting in this regards. Without much stress, all sections of the organization became awake to their responsibility of enshrining quality into their practices and operation. By the 80s, news of the new waves in Japan reached the Americans who observed that a number of products from Japan has significantly surpass those produce in the US in terms of quality specification. In fear that Japan may take over world markets, American firms began to upgrade their specifications to meet with global best practices asset by Japan (Hayes & Abernathy, 1980). In this quality supremacy battle with Japan, the US designed a four-stage mechanism of quality control as follows; The quality control mechanism wherein;

Operation
Inspection
Statistics and
Total Quality Control

Garvin (1988) argued that up to 1900 Quality Control was mainly restricted to the skilled artisans and craftsmen. At this phase, the tag of Quality Control in Operation is attached (Feigenbaum, 1993). He went further to explain that some of the features of this era (Quality Control in Operation) are that quality controls were performed mainly on products in the manufacturing sector without putting in place any third party to monitor the process. In other words, it is the machines operator that performs the dual roles as machine operator and at the same time quality control monitoring.

The second stage in the quality control process is the Quality Control Inspection phase that according to Garvin (1988) was singled out by Fredrick Taylor in the early 1900's as a special assignment for the higher level managers in a bid to effectively run their business. He however argued that managers were able to accomplish such task due to the relativity in the size of the level of production that was small. The mass production that was required for Post-World War II in the words of Feigenbaum 1983 rendered the inspection quality control approach to production ineffective.

In line with Garvin (1988) and Suganthi and Samuel (2012), it is argued that the revolution of TQM began with Inspection, then progress to Quality Control, Quality Assurance and then to Total Quality Management.

According to Suganthi & Samuel (2012) the main focus of each of the above stages is:

Identification of outliers

Rectifying/salvaging

The approach of end of pipe and

Justifying the End with the Means

Quality Control (QC)

Processing of performance data

Planning of Quality specifications

Search for appropriate statistical tools

Instruments for quality control design

Quality Assurance (QA)

Quality manuals

Certification of System

Quality costs

Documentation

Total Quality Management (TQM)

Suganthi and Samuel (2012) explained that inspection was one of the main tools used to check quality by the department saddled for that responsibility after the final stage of the production process, inspection will be conducted to check for any item or product that do not conform with specifications and such item is removed and rework or thrown away when its beyond repairs. This again will translate into additional cost for the organization and that invariably contradicts the profit maximization objective of an organization.

As a way forward, the authors argued that organization introduced quality control methodology by collecting data and relying on statistical techniques in analyzing quality control process. This obviously served to an extent but nevertheless, it has its own challenges. Overcoming those hurdles led to the introduction of Quality assurance where documentation was given priority, certification procedure was adopted and organizations that excel in quality products were awarded certificate by international bodies such as International Standards Organization (ISO). A similar body was introduced in Nigeria, Standard Organization of Nigeria (SON) to award certificate to organizations that comply with ISO9000.

The last on the hierarchy of quality system is TQM as with it, customer focus is the target of every organization in line with the popular saying that customer is the king. In TQM, every member of the organization is involved and motivated to aspire to a common vision.

Quality Control

Quality Control (QC) is the practice of control activities to achieve the production of quality goods and services. It can also be viewed as the process of directing, regulating, checking

and monitoring work activities to achieve manufacturing quality objectives.

In the words of Feigenbaum (1983), QC is the procedure for meeting the quality goal, his explanation is based on the PDCA management cycle while Ishikawa (1985), emphasized more on the economical aspect of quality control.

According to Ishikawa (1985) from whichever perspective quality control is being viewed, the fundamental issue is that it must have to be economical and the focus must be on customer satisfaction. From Ishikawa definition of quality, it can be deduced that the following are very crucial:

Consumers' expectation predict the quality standard

Comprehensibility in the definition of Quality

The price must be taken seriously when evaluating the quality of such product or service.

In conclusion to this therefore, Ozek & Asaka (1990) view QC as a clear description of a job in terms of its requirements and specification with a view to planning effectively how the desired job objectives will be achieved efficiently.

Core Values of TQM

TQM has become an irrepensible management technique tool attracting wide attention from organizational experts especially in the production sector. It has become an important and pivot tool used worldwide by renowned companies over the years to improve on their quality status.

However, reducing TQM to a few numbers of key principles in the words of Jacqueline (2010) portends some inherent dangers. Nevertheless, concentrating on a number of TQM will make it friendlier for understanding and application. The whole idea of TQM rests directly on three cardinal principles of consumer centered; rapid and sustained improvement in the product and teamwork (Dean & Bowen, 2008 and Hill & Wilkinson, 2009). Mostly, TQM core values shall be discussed as presented by Yang (1997).

Concept of Performance

Performance measurement, both in terms of overall organization performance and performance of processes, is crucial to the achievement of effectiveness and efficiency in an organization. In its entirety, organizational performance entails the combination of individual and group performances in comparison with the pre-set organizational targets. This overall performance is arrived at by ensuring that routine activities are correctly done, proper monitoring is enforced while necessary adjustment required to maintain the expected goal path is ensured.

On the other hand, performance of processes comprises the expected outcome or contribution of an input to overall organizational goals and objectives as against its actual outcome or contribution (Oyebanji, 2012). In the context of this research, attention was mainly on performance processes, which reflects the major objective of the study which was examine the impact the impact of TQM practices on the performance of academic staff in the Nigerian Universities.

Employee Performance

The principal resource that any organization can boast of remains the employees. Often times, is referred to as people at work, organizational manpower or the human resource. Regardless which name it bears, human resource remains a multi-faceted concepts that has received the concerted attention of organizational scholars. To the industrial psychologists especially from the macro perspective, it refers to the innovative ability or talent obtainable from people towards the creation of a good or service. At the micro or individual level, it entails the overall capability or the inherent effort possessed by an employee which is required for production purposes (Mopelola & Samuel, 2011).

In furtherance to the above, Okebukola (2011) noted that most organizational problems are more of social interaction than technical knowhow. This he buttressed by submitting that the success of any organization depends on the capability of its human resource.

Given the fact that the setting up of every organization is based on a set of pre-conceived ideals, it is pertinent to engage resources such as money, materials, machines order to achieve these objectives. Even though, each and every one of these resources are important, the human resource is the most important (Oyebanji, 2012). As important as this resource is, so as the evaluation of its performance to meet the organizational goals.

Academic Staff Performance

Academic staff performance, as opposed to general employee performance, are those measures of performance specifically designed to monitor the extent to which academic staff are meeting their individual target and contributing to the attainment of the goals and objectives of the educational institution. Generally, three (3) major dimensions of performance of academic staff are frequently used in the literature, these are: teaching performance, research performance and community services performance (Adeboye, 20003).

Teaching Performance

As pointed out by Barr (1961), a generally acceptable medium of measuring teaching effectiveness and efficiency is still elusive despite the amount of effort invested by scholars. However, contemporary studies have a kind of uniformity of patterns in their submissions on the various tools of teaching performance evaluation. This cannot be confused for a general agreement among them; rather, they were just areas of intersection in their conclusions. These areas were:

- Personal attributes of the teacher
- The teacher's skills and performance, and
- The learning outcome.

While commenting on the three tools above, Barr (1961) pointed out that in reality, neither of the tools could guarantee the best result, instead a combination of them usually produce an appreciative result. Even with these tools, Byrne (1962) noted that further group of certain criteria must be observed as he adopted in his works. His suggestions can be summarized into the following headings:

Product criteria: This refers to the observed improvement in the performance of the students. However, this improvement must be directly linkable to the effort of the teacher for it to count. For instance, performance improvement can be noticed from the result of the conducted tests and examinations. Other are as to seek such improvement can be in the produced reports from researches by the students or the skills displayed in certain area of knowledge. Nevertheless, this criterion alone cannot be effective in the determination of the teacher's performance because numerous other forces apart from school contributes to the performance of the students. It will therefore amount to gross misconduct to base all improvements noticed from the students solely on the effort of their teachers and schools.

Process criteria: This follows the maxim that "the means is as important as the end". Apart from the teaching output, the teaching process is equally important. The influence of the teaching process on the performance improvement on the students therefore deserves some attention. Like the earlier criterion, this cannot be equally adopted in isolation of the other criteria, as the disparity in the students' performance may not be solely attributable to the adopted process.

Presage criteria: Unlike the earlier criteria, this focused more on the innate abilities of the tutor. Examples of these innate features are manners, gestures, intellectual prowess etc. Classic studies related to tutor's assessment have majorly relied on this criterion. Instead of considering other arrays of influencers apart from the personal attributes of the teacher, they explained all improvement observed through this criterion alone aside few other studies that adopted a combination of the product, process and prestige criteria. All of the criteria are important in the effective evaluation of a teacher especially when appreciating the positive additions in the performance of the students. Nevertheless, there stricted adoption of a singular criterion will record a number of defects. Recognizing this, recent studies has placed their investigation on a more complex set of values that can guarantee more robust and reliable result rather than the one sided view observed in the classical literature available (Byrne, 1962).

Method

Survey design was adopted. The study did not deliberately manipulate the influence of any variable on the sample.

Through the staff statistics released by the office of the Registrar of the University, a population of one thousand three hundred and twelve (1312) non-teaching staff and seven hundred (700) academic staff given the total staff of two thousand and twelve (2012), was identified as the population of the study.

The sample size for the study was determined through the application of Taro Yameni's formula cited in Mbah, Mgbemena and Ejike (2015) as follows:

$$n = \frac{N}{1 + N(e)^2}$$

Where, n is the sample size sought.

N is the population size (2100)

e is the level of significance of 0.05 (5% confidence intervals) and

1 is constant.

The sample size of the population can be computed as follows;

$$n = \frac{2100}{1 + 2100(0.05)^2}$$
$$n = \frac{90}{1 + 2100(0.0025)}$$
$$n = \frac{2100}{1 + 4.25}$$
$$n = \frac{2100}{5.25}$$
$$n = 400$$

$n = 400$ desired sample size.

The convenience sampling method cited by Mbah, Mgbemena and Ejike (2015) was employed. According to them, the sampling units that could easily be accessed and conveniently located were to be selected. This therefore implies that inconveniences sampling the respondents that the paper can easily collect data from without difficulties are taken to be the source of primary data.

Total quality management practices appraisal questionnaire (TQMPAQ) was employed to reflect such options as strongly agree (4) agree (3) disagree (2) and strongly disagree (1) popularly known as four point likert scale to elicit needed information from the respondents.

Descriptive statistics such as Percentage in demographic information and Chi- square were used for analysis. In respect of Chi- square by calculation were used for the hypothesis analysis.

Data Presentation

Distribution and Retrieved of Questionnaires

Table 2

	Observation/Frequency	Percentage (%)
Number retrieved	370	92.50
Number not retrieved	30	7.50
Total Number distributed	400	100%

Source: Field Work, 2024

Table 2 shows that 370 (92.50) for number retrieved and 30(7.50) for number not retrieved given a total of 400 (100%).

Table 3: Sex

	Observation/Frequency	Percentage(%)
Male	260	70.27
Female	110	29.73
Total	370	100%

Source: Field Work, 2024

Table 3 shows that 260 (70.27) for males and 110(29.73) for females given a total of 370(100%). This indicates that the sample population of the males are more than the females.

Table 4: Academic level distribution

	Frequency	Percentage (%)
O/Level& GCE	65	17.57
NCE/OND	75	20.27
HND/1 ST Degree	102	27.58
Masters & Above	128	34.58
Total	370	100%

Source: Field Work, 2024

Table 4 shows 65 (17.57%) for O/Level& GCE, 75(20.27%) for NCE/OND, 102(27.58%) for HND/1STDegree and 128 (34.58%) for Masters & above given a total of 370 (100%).

Table 5: Staff Category

	Observation/Frequency	Percentage(%)
Academic Staff	105	28.28
Non Academic Staff	265	71.62
Total	370	100%

Source: Field Work, 2024

Table 5 shows that 105 (28.28) for academic staff and 265(71.62) for non- academic staff given a total of 370(100%).This indicates that the sample population of the males are more than the females.

Analysis of Data

Does TQM customer focus strategy have significant positive effects on the service delivery in RSU?

Table 6: Customer Focus Strategy

	Observation/Frequency	Percentage(%)	Remark
Strongly Agree	212	57.29	1st
Agree	107	28.92	2nd
Disagree	21	5.68	4th
Strongly Disagree	30	8.11	3rd
Total	370	100%	

Source: Field Work, 2024

Table 6 shows that212 (57.29%) for strongly agree,107(28.92%) for agree, 21(5.68%) for disagree and 30(8.11%) for strongly disagree given a total of 370 (100%).

Table 7: Testing of Hypotheses: H_0 ; “TQM training and development strategy has no positive significant effects on the performance in RSU”

S/N	Cell	f_o	f_e	$f_o - f_e$	$(f_o - f_e)^2$	$\frac{(f_o - f_e)^2}{f_e}$	Result (χ^2)
1	χ^2_{31}	233	216.50	233-216.50	$(16.5)^2$	$\frac{272.25}{216.5}$	1.2575
2	χ^2_{32}	127	102.75	127-102.75	$(24.25)^2$	$\frac{588.0625}{102.75}$	5.7232
3	χ^2_{33}	10	28.25	10-28.25	$(-18.25)^2$	$\frac{333.0625}{28.25}$	11.7898
4	χ^2_{34}	0.0	22.50	0.0 -22.50	$(-22.50)^2$	$\frac{506.25}{22.50}$	22.5000
Total							$\Sigma(\chi^2) = 41.2705$

Decision rule for H_{03} .

The confidential level is 95% with the degree of freedom of $4-1 = 3$, to get the tabulated Chi- squared which is $\chi^2_{3;0.05} = 7.815$

Thus;

The calculated Chi- squared value (χ^2)= 41.2705 > the tabulated $\chi^2_{3;0.05} = 7.815$

Thus, we reject the hypotheses H_{03} “TQM training and development strategy has no positive significant effects on the performance in RSU” and accept the alternative “TQM training and development strategy has positive significant effects on the performance in RSU”

Conclusion/Recommendations

There is a significant relationship between total quality management strategy of training and development practice and performance. This implies that total quality training given to the staff of Rivers state university contributes significantly to their level of job performance.

In the hypothesis, we concluded that total quality management of employment involvement has positive significant impact on organizational performance in RSU.

Total quality management customer satisfaction should be encouraged in public sector organizations for the mutual benefits of both the organizations and the customers.

Relevant and continuous quality management training and development should be pursued by the management of public service institutions as to realize the expected level of job performance of their staff.

Staff of all categories should be carried along in policy formulation and implantation, as such; staff should be made to be involved in the overall running of the school.

The management of the university should do more in implementing total quality management policies in order to continue to render quality services.

References

- Abdulaziz, K., (2014). TQM a case for Joint Implementation. *International Journal of Operations & Production Management* 15(5), 84-94
- Adeboye, T. (2003). Disruption, violence and productivity in Nigerian universities. *Nigerian Journal of Educational Administration and planning* 4(1): 21–25.
- Adeola, M. O. (2007). Education Quality Management as Panacea for Sustainable School Quality Reforms in Nigeria. *European Journal of Educational Studies*,4(2).
- Adeoti, J. O. (2003). The Impact of TQM on Banks performance in Nigeria. *Advances in Management: A Publication of Department of Business Administration, University of Ilorin* (pp.79-85) Vol. 3, No1
- Adeoti, J. O. (2007). Total Quality Management Application in Selected Hospitals in Kwara State. Ph.D Thesis
- Adetunji, A. T. (2017). Nigeria University quality, why the hero falls: a review of University academia and where things went wrong, *International Journal of Management and Social Sciences Research*, 5(3) pp32-41
- Afebabalola (2013, Nov.28). Funding of Education in Nigeria. *Nigerian Tribune* pp 7.
- Ajadi, T.O.(2010). Private Universities in Nigeria-the Challenges Ahead. *American Journal of Scientific Research*, 7, 15-24
- Ajayi, I. A. & Ekundayo O. H. T. (2010). *Contemporary Issues in Educational Management*, Lagos, Bolabay.
- Ajayi, K. (2007). Emergent Issues in teacher education and professionalization of teaching in Nigeria. *African Journal of Historical Science in Education* 3(1):22-28
- Ajayi, K. (2004). *Minimum Standard and Accountability in Nigerian Educational System*, Port-Harcourt, Mercury International Publisher.
- Akinyemi, G. M.,& Abiodun, N. Z. (2013). Quality Administration and Management in Higher Education in Nigeria. Implication for Human Resources Development.
- Al-Damen, R. (2017). The Impact of Total Quality Management on organizational Performance: Case of Jordan Oil Company. *International Journal of Business and Social Science*, 8(1),192-2002
- Andy F. (2009). *Discovering Statistics Using SPSS*. Sage Publications Ltd., London.
- Anil, K. S., Poornima, S. C., Abraham M. K. & Jayashree, K. (2006). *Entrepreneurship Development*. New Delhi, New Age International Publishers.
- Arcarco, J. (2005). *Quality in Education: an Implementation Handbook*, Delary Beach, St Lucie Press.
- Babbar, S. (1995). Apply Total Quality Management to Educational Institutions. *International Journal of Public Sector Management*, 8(7),35-55
- Babbie, E. (2004). *The practice of social research*. Belmont, CA:Wadsworth Publishing Company.

- Barbara, A., Cecilia, S., & Corrado, G. (2017). A systematic literature review on total quality management critical success factors and the identification of new avenues of research. *The TQM Journal*, 29(1),184-213
- Barnett, V., and Lewis T. (1994). *Outliers in Statistical Data*. 3rd editon. J. Wiley & Sons, XVII.582pp.
- Becket, N. & Brookes, M. (2008). Quality Management in Higher Education: a Review of International Issues and Practice. *International Journal of Quality Standards*, 1(1),85-121
- Becket, N. & Brookes, M. (2013). Evaluating Quality Management in University Department, Quality Assurance in Education, *TQM Magazine*. 9(5),72-80
- Blaxter, L., Hughes, G. & Tight, M. (1996). *How to research*, Buckingham, Open University Press.
- Boaden, R. J. (1997). *What is total quality management?*, New Delhi, New Age International (P) Limited Publishers.
- Bogoro, S. (2020, January, 24) Tertiary Education Trust Fund (TETFund) suspended sponsorship of conference attendance for Nigerian lecturers. *This Day newspaper*.Pp7–8
- Bou-Llusar, P. A. Owlia, M. S., Aspinwall, E. M., & Oyebanji, K. K. (2009). Intensive Retraining Programme for graduates of Universities for better Quality and Standard. A keynote Address at the First Oyo State Education Summit, Ibadan, Oyo State, July 10, 2006.
- Brew, A. (2001).Research and teaching: changing relationships in a changing context. *Studies in Higher Education*,24(3),291 – 301.
- Buchheit, S., Collins, A. B., & Collins, D. L. (2001). Intra-Institutional Factors that Influence Accounting Research Productivity. *Journal of Applied BusinessResearch(JABR)*,17(2).<https://doi.org/10.19030/jabr.v17i2.2070>.
- Burke, K., Fender, B., & Taylor, S. (2007). Walking the tight rope: The impact of teaching and service on scholarly productivity for accountants. *Academic Business World International Conference, Nashville, Tennessee, USA*,1-13.
- Calvomora, D., Leal, J., & Roldan, M. (2005).*Total Quality Management*. New Delhi: New Age International Publishers.
- Chow, C. W., & Harrison, P. (1998). Factors contributing to success in research and publications: insights of ‘influential’ accounting authors. *Journal Accounting Education*, 16(3 –4),463-472.
- Coombs, P. H. (1970). *World educational crises: A system approach*. New York: Oxford university press.
- Creswell, J. W. (1985). *Faculty Research Performance : Lessons from the Sciences and the Social Sciences*. ASHE-ERIC Higher Education Report No. 4. Washington, DC: George Washington University.
- Crosby, P. (1979). *Quality is free*, London, McGrawhill.

- Crosby, P. (1984). *Quality without Tears. The art of hassle-free management*. New York, McGraw hill.
- Cruise O'Brien, R. & Voss, C. (2007). In search of quality, operations Management Paper 92/02, London Business School Working Paper.
- Dahlgard, J. J., Kristensen, K. & Kanji, G. K. (1999). *Fundamentals of Total Quality Management*, London, Chapman and Hall.
- Dahlgard, J. J., Kristensen, K. & Kanji, G. K. (1994). *The Quality Journey, a Journey without end*, Arbingdon, Carfax Publishing Company.
- Dahlgard, J.J., Kristensen, K., Kanji, G.K. (1998), *Fundamentals of total quality management*, Nelson Thornes, UK.
- Dale, G. B., Boaden, R. J., Wildox, M. & McQuarter, R. E. (1997). Sustaining Total Quality Management, what are the key issues. *The TQM Magazine*. 9(5),372 -380.
- Dale, G. B., Wu, P. Y., Zain, M., Williams, A. R. T., & Vander, W. T. (2001). Total Quality Management and quality: An exploratory study of contribution. *Total Quality Management Review Journal*, 19(3), 392-418
- Fakokunde, T. O. (2010). *Quality Control and Improvement Among Fast Food Retail Outlets in South Western, Nigeria* Ph.D thesis.
- Feigenbaum, A. V. (1961). *Total Quality Control*. McGraw-Hill, London.
- Feigenbaum, A.V. (1993). *Total Quality Control*, New York, McGraw hill Books Company.
- Fuzi, A. (2011). *TQM Implementation and its Impact on Organisational Performance in Developing Countries (A case study on Libya)* University of Wallongong.
- Galgano, A. (1994). *Companywide Quality Management*, Portland, Productivity Press.
- Gandhi, M. M. (2015). Total Quality Management in higher education in India. *International Journal of Organizational Behaviour and Management Perspectives*, 3(4),1200-1211
- Garvin, D. A. (1988). *Managing quality: The Strategic and Competitive edge*, New York, The free press.
- Graham, B. Y. (2013). *Total Quality Management*, New Delhi, Tata McGraw-Hill Publishing Company Limited.
- Guest, D. & Peccei, R. (1994). The Impact of Employers involvement on organisational commitment and “them and us” Attitudes *Industrial Relations Journal*, 24(3), 191-200.
- Hair, J.F., Black, W.C., Babin, B. J. & Anderson, R.E. (2010) *Multivariate Data Analysis*. 7th Edition, Pearson, New York.
- Hamburger, Y. A., McKenna, K. Y. A., & Tal, S. A. (2008). Empowerment by the internet computer in Human Behaviour. *TQ Magazine*, 13(7),88-93.
- Harris, R. (2012). Alien or Ally? TQM Academic Quality and the New Public Management. *Quality Assurance in Education*, 2(3),33-39

- Harvey, H. A. (1995) *Success Training Practice: A Manager's Guide to Personnel Development*, Oxford UK: Blackwell Business Publishers
- Harvey, L. (1995). The Quality Agenda; Quality in Higher Education. *International Journal of Quality Standard*, 1(1):5-12.
- Hassan, A., & Thamizhmanii, I. (2010). Quality Management in Higher Education, A Review of International Issues and Practices. *International Journal of Quality Standards* 1(11),90-102
- Hassan, I. & Ibrahim O. (2013) Impact of Quality Assurance on technical vocational education and training in Nigeria. *Afro Asian Journal of Social Sciences*, 5(5),1-25
- Hayes, R. & W. Abernathy, W. (1980). Managing Our Way to Economic Decline. *Harvard Business review*, 67-77
- Hoang, E. A, Lemay, G. Larsen, P. & Johnson, D. M., Robins, S. P. & Goutler, M. et al (2009). Service Quality in Higher Education. *Total Quality Management Magazine*, 20(2)139-152.
- Johnson, A. L. (2013). Quality Management in Higher Education. *International Journal of Business and Management*, 7(10),85-90.
- Juran, A. (1989). *Quality Control Handbook*, New York, McGraw hill.
- Karia, P. Hasmi, D. & Asaari, A (2006). Evaluating research performance of Turkish universities, Unpublished Ph.D Thesis, Middle East Technical University, Ankara, Turkey.
- Kearney, A. T. (2011). *Total Quality: Time to take off the rose tinted spectacles, are port in association with Total Quality Management Magazine*. Kempston: IFS Publications.
- Kennedy, A. F., & Scherfer, L. (2006). Innovations achieving balance among empowerment accountability and control, advances in interdisciplinary studies of work team. *Total Quality Management Review Journal*, 22(17),202-205.
- Khanna, V. K., Vrat P., Sahay B. S., & Shankar, R. (2009). *TQM: Planning, design and implementation*. New Delhi, New age international limited.
- Kinlaw, D. C. (1992). *Continuous improvement and measurement for total quality based approach.*, San Diego, Pfeiffer and Company.
- Kothari, C. R. (2012). *Research Methodology: methods and techniques* (2ed). New Delhi, New age international limited.
- Kotler, P. (1997). *Marketing management analysis, planning and control*. (9ed), New Jersey, Prentice Hall.
- Kotler, P., & Keller K. L. (2006). *Marketing management* (12ed) New Jersey, Pearson Education, Inc.
- Kpolovie, P. J. & Obilor, I. E. (2013). Nigeria universities bag indecorous ranks in world rankings of universities. *Universal Journal of Education and General Studies*, 2(1),303-323

- Krejcie, R. V., & Morgan, D. W. (1970). Determining Sample Size for Research Activities. *Educational and Psychological Measurement*, 30,607-610.
- Mac-Donald, J., & Piggot, J. (1990). *Global Quality: The new management Marching ton, M.* (2001). "Employees involvement at work". Human resourcemanagement:Acriticaltext2nd edition, London Thomson Learning.
- McArdle, L., Rowlinson, M., & Forester, P., (2000). *Making Quality Critical, New Perspective on Organisational Charge*. London: Routledge.
- Nosakhare, J.O. (2000). Organisational approach to Total Quality Management in Nigeria. Ph.D thesis
- Nwogu, N.A. (1991). The concept of minimum standard in education, Second edition of Nathan Ejiogun memorial lecture, Nsuka University of Nigeria.
- Oakland, J. S. (1993). *Total Quality Management. The route to improving performance.* (2ed), Butterworth-Heinemann Ltd Oxford.
- Obeidat, B.Y., Hashem, L., Alansari, L., Tarhini, A., & Al-salti, Z. (2016) The effect of knowledge management uses on total quality management practices: A theoretical perspectives. *Journal of Management and strategy*,7(4),18.
- Obisanya A, Bolaji, S. & Hassan, K. (2019). Total Quality Management and Service Delivery in Selected Local Government in Nigeria.
- Ochuba, V.O. (2011). Strategies for improving the Quality of Education in Nigerian Universities. A publication of the Nigerian Association for Education Administration and Planning.
- Oderinde, U.K.(2004). A Review on an Employee Empowerment in TQM Practice. *Journal of Achievement in Materials and Manufacturing Engineering*, 39, 87-93.
- Odiba, A. I. (2004). The place of teacher education in manpower development. Nigerian educational forum. *Journal of the institute of education*, Ahmadu Bello University Zaria. (2),437-446.
- Odugbemi, D. K. (2013). Education Quality in Nigeria. *Nigerian Tribune*, p. 8.
- Ogunu, M. A. (2013). The development of university education in Nigeria: A statistical analysis: *Global Advanced Research Journal of Educational Research and Review*, 2(5),105-110.
- Okebukola, P. A. (2011). Nigerian Universities and World Rankings: Issues, Strategies and forward planning. A Paper Presented at The 2011 Conference of Association of Vice-Chancellors of Nigerian Universities, Covenant University, Ota, Ogun State. June27-30, 2011.
- Onah, I. A., (2015). The unresolved issues of quality assurance in Nigerian universities. *Journal of Sociology and Education in Africa*, 6(1).
- Oyebanji, K. K. (2012). *Total Quality Management*. Ibadan, Nelson Clemmy Press.
- Ozeki, K. & Asaka, T. (1990). *Handbook of quality tools, the Japanese approach*. Cambridge, Productivity Press.

- Powel, T. C. (1995). Total quality management as competitive advantage: a review and empirical study” *Strategic Management Journal*, 16(7),15-37
- Ross, J. E. (1995). *Total Quality Management text, cases and readings*, Delray Beach, F. L, Lucie Press.
- Salami, C. & Akpobire, O. (2013). Application of Total Quality Management to the Nigerian Education System. *Global Advanced Research Journal of Educational*, 10(3).
- Sathishkumar, E. & Karthikeyan, H. (2014). The effects of total quality management practices on performance and there a sons of and the barriers to TQM practices in Turkey. *Advances in Decision Sciences*.
- Sekaran, U. (2003) *Research methods for business: a skill-building approach*. 4th Edition, John Wiley & Sons, New York.
- Shiba, G. M., Graham, K. E. & Walden, G. K. (1993). Who gains from EFA-slate business of education or private higher education business in developing nation. A study to understand the policy impact in Bangladesh. *African Journal of business management*. 4(5)770-789.
- Sudha, T. (2013). Total quality management in higher education institutions. *International Journal of Social Science and Interdisciplinary Research*, 2(6)
- Suganthi, L. & Samuel, A. A. (2012). *Total quality management*, New Delhi PHI. Learning Private Ltd.
- Tabachnic, B. G., & Fidell, L. S. (2007). *Using multivariate statistics* (5th ed.). Boston; Pearson Education Inc.
- Tari, O. O., Molina, T. T., & Castejon, O. E. (2007). Customer relationship management approach and student satisfaction in higher education marketing. *Journal of Competitiveness* 6(3), 49-62 <https://doi.org/10.7441/joc.2014.03.04>
- Tekneci, P. D. (2014). Evaluating research performance of Turkish universities, Unpublished Ph.D Thesis, Middle East Technical University, Ankara, Turkey.
- Tenner, A. R. & Detoro, I. J. (1992). *Total quality management: three steps to continuous improvement*, New Jersey, Addison- Wesley Publishing Company Inc.
- Topar, K. K. (2007). Sustaining total quality management, what are the key issues, *TQM Magazine* 9(5), 372-375
- Uma, S. (2007). *Research methods for business: A Skill Building Approach*, Wiley India Edition, p294-295.
- Ume, T. A. (1979). Centralization of university coordination in Nigeria. *Environmental Analysis, African Journal of Educational Research* 2(2),41-56
- Umoh SM (2002). *Human behaviour in organizations and administrative theory and practice*.Vol.2, Enugu, Nigeria Martins Concepts.
- Verardi, V., & Croux, C. (2008). *Robust Regression in Stata* (2008). Available at SSRN: <https://ssrn.com/abstract=1369144>
- Walton, M. (1986). *The deming management method*, New York, pedigree publishing Ltd.

- Webb, J. (2007). Quality Management and the management of quality in A, Wilkinson and H. Willmot (Eds). *Making Quality Critical: New perspective in organizational charge*. London:Routledge,105 –126
- Weihlich, H. Cannice, M. V. & Koontz, H. (2008). *Management. A global and Entrepreneurial perspective* (12ed) New Delhi, Tata McGraw Hill publishing company Ltd.
- Wilkinson, A., Snape, E. & Allen, P. (2005). Total customer service, the TQM magazine October, 291–294.
- Wills, D., Ridley, G. & Mitev, H. (2013). Research productivity of accounting academics in changing and challenging times. *Journal of Accounting & Organizational Change*, Vol. 9 No. 1, pp.4-25. <https://doi.org/10.1108/18325911311307186>
- Witcher, J. (1994). *SPSS survival manual: A step by step guide to data analysis using SPSS windows* (4thed.). England: McGraw Hill Open University Press.
- Yong, C. C. & Wilkinson, E. (2001). *Quality is the best strategy in competition*, Taiwan, Apex International Management Consulting Co.