

Total Quality Management (TQM); A Means of Better Work Output in Nigerian Manufacturing Industries

Ajayi, Paul Olusegun

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Abstract

The study inquiries into the role total quality management plays in facilitate an organization output. It suggests that the management of an organization is determined by TQM and its application is complex and gives an assurance of good products and services. The study revealed that human, material resources and busines processes ensure complete customer satisfaction at every stage, internally and externally. The combination of TQM and effective leadership, results in an organisation doing the right things at the right time. For methodological purpose, the study employed expository and content analytics approach to extrapolate the relationship between TQM and the work output in manufacturing industries. It concludes that total quality management and service delivery in manufacturing industries in Nigeria shares common attributes and would be able to contribute successfully to the achievement of the organization aims.

Index terms— total quality management, quality assurance, manufacturing industries, organisation output.

1 Introduction

otal Quality Management (TQM) is a philosophy and a set of guiding principles that represent the foundation of an excellent organisation and to ensure survival of manufacturing organisations in the competitive economy of today. Total Quality Management is a technique that underscores the continuous improvement of product and service quality to satisfy customers and enhance productivity. The emergence of Total Quality Management has been one of the most significant developments in the world of management practice. The focus on the development of Total Quality Management (TQM) system appears to have begun around 1980 in response to Global competition and stiff rivalry in the manufacturing subsectors. (Easton and Jarrell, 1998). In the last three decades, Total Quality Management has become pervasive and widely accepted in manufacturing, services, government, healthcare and banking subsectors of the developed economies ??Fotoponlam and Psomas,2009; ??reng et al (2008), Kaplan et al ??2010). Al-swadi et al ??2012) and ??emtime (2003) assert that continuous attention has been given to TQM in the industrialised countries but researchers investigated quality practices in the developing countries in the last ten years.

According to Moballegghi and Moghaddam (2011), there is a growing awareness that a welldesigned and well executed Total Quality Management process is one of the most effective routes to increase product and service quality, productivity and profitability. However, many manufacturing organisations are still mired in "quality confusion". This scenario is a common phenomenon in Nigeria. Quality of products has been identified as one of the critical determinants affecting the performance of most organizations in Nigeria. In response to the poor quality and substandard products in wide circulation alongside the attendant adverse effect on the lives of the citizens and the economy, Nigerian government established the legal and the institutional framework to curb the ugly trend and menace in the country. The Government of Nigeria set up regulatory agencies such as Standard Organisation of Nigeria (SON), National Agency for Food, Drug and Administration Control (NAFDAC), Nigerian Drug and Law Enforcement Agency (NDLEA) and Consumer Protection Council to safeguard the unsuspecting public against unethical practices and improve the quality of goods and services produced by business organizations. Consequently, the study is to ascertain as to whether product quality

improvement policy drives by the government and the adherence of manufacturing firms to TQM practices have impacted on the industrial performance in Nigeria.

Consequently, the manufacturing organizational management interest in quality is not new but using quality as a key element in the battle for competitive advantages is of recent date. Oakland (1989) claims that after the industrial revolution, and the computer revolution in the beginning of the 1980's, we are now in the midst of a quality revolution, to this respect, surveys conducted by various organizations have revealed an increase in quality movements. These include the movement best known as total quality management; this has been widely acknowledged as a major innovation in management theory. The approach to or the philosophy of total quality management is, however, obvious.

2 II.

Meaning and Nature of Total Quality Management

TQM is a theory which emphasises the understanding of variation; the importance of measurement; the role of internal and external customers and suppliers and the involvement of employees at all levels of an organisation in pursuit of continuous improvement (Chang 2006 :1094). Owen and Dean (2014:396) underscore this stating that "TQM has evolved from having a narrow focus on statistical process control to encompass a variety of technical and behavioural methods for improving organisational performance". While TQM is widely practiced in organisations, there is little agreement on what it actually means, despite assertions that clear definitions are important (Boaden 2017:19). This view is also shared by Davis and Goetsch (1995:19) who note that "TQM is not just a single concept, but a number of related concepts which create a comprehensive and different approach to managing organisations.

This view is further reinforced by Conti's (2013:7) observation that "a glance at all programme of countless total quality conferences all over the world shows that the term covers a variety of concepts, some are similar but not identical, while others may be quite divergent". It should be noted that many researchers from a variety of backgrounds and disciplines have investigated TQM, and have couched their own definitions and perspectives. Hence, it is important to recognise that many quality experts did not actually use the term TQM in their definition, although their work has subsequently been recognised as being relevant and sometimes quoted as referring to TQM (Boaden 2017:157). Therefore, it is important to probe the various definitions from which TQM is understood in order to fully appreciate the roles it plays in organisations. Oyne et al. (2002:10) define TQM as "a unique approach to improving organisational effectiveness, and a strategy for improving performance that takes into account of how people and organisation actually operate". Whereas Boaden (1997:161) defines TQM as a "management philosophy that embracing all activities through which the needs and expectations of the customer and the community and the objectives of the organisation, are satisfied in the most efficient and costeffective way by maximising the potential of all employees in a continuing drive for improvement".

The adjective 'total' is used to indicate company wide application, thus TQM convey more successfully the basic message of a quality system embracing the entire organisation and everyone in the organisation (Conti 1993:8). The use of the word 'total', when coupled with the term quality management, provides recognition of the fact that TQM is not an activity or even philosophy that can be confined to certain organisational processes. TQM therefore, implies the mutual co-operation of everyone in the organisation and associated business processes is needed to produce product or service which meet and hopefully exceed the needs and expectations of customers. TQM is a theory that promotes a set of dimensions for managing organisation (Dale in Doran and Rees 2001:855). In agreement with this assertion, Hutchins (1992:6) also defines TQM as "embracing not only the quality of a specific product or service, but everything an organisation does, might or should do to determine the opinion not only of its immediate customer or end-users, but its reputation in the community at large".

According to Pheng and Teo (2004:8) TQM is a way of thinking about the goals, process and the people to ensure that the right things are done right the first time by improving effectiveness and flexibility in the whole organisation. Develin and Hand (2013:3) define TQM as "a system behaviour which embraces everyone within an organisation and which determines their relationships with the customers, suppliers, competitors, society and the environment". In describing TQM as a system of behaviour Develin and Hand distinguish between the end results and the means of achieving them. The end results might be continuously improving levels of quality, delivered at reduced cost, thus increasing levels of customer satisfaction. However, one should always bear in mind that any system of behaviour has shared beliefs and values, and common purpose. Oakland in Teo and Pheng (2004:8) observed that TQM is essentially a way of planning, organising, and understanding each activity that depends on each individual at each level. However, TQM cannot be viewed as a unified concept rather it can be seen as to encompass a range of prescriptions as to the type of management process that should be put in place, and the types of techniques that should be used to improve work process and outcomes (Higgins, James & Roper 2004:251). nantharaman et al. (2001:344) defines TQM as "an approach for continuously improving the quality of every aspect of organisational life and, it is a neverending process of improvement for individuals, groups of people, and the whole organization". However, Costing in Dahlgaard (1999:473) further notes that "current definitions, and processes related to TQM can be interpreted as an interplay of three fields and approaches". That means efficiency concerns rooted in process analysis, related to such traditions as process engineering, operational management, operations research and statistical process control; issues which are related

to human relations schools of management and the field of organizational behaviour and organizational dynamics and issues which are related to the field of strategic management.

There has been a movement away from the belief that managing quality solely means conformance to specification and requirements (Godfrey, Stephens & Wadsworth 2002:89). From the above definitions of quality, it is clear that good quality also means meeting and even exceeding the needs and expectations of customers. On the one hand, TQM allows organisations to obtain a high degree of differentiation, satisfying customer needs and strengthening brand image, and on the other, to reduce cost by preventing mistakes and time wasting and allowing improvements in the organisation processes (Claver et al. 2003:91).

According to Godfrey et al. (2002:88), in 1997 the JUSE announced a formal change from the term "total quality control" to "total quality management" in order to give themselves an opportunity to revisit the origin of quality control and rebuild the concept to meet the challenges in business management. In JUSE's view, TQM is a management approach that strives in any business environment for the following: The generic term of "total quality management" will therefore be used to mean a vast collection of philosophies, concepts, methods and techniques that are being used throughout the world to manage quality. It means having right features, correct documentation, error-free invoices, on-time delivery and no failures.

Therefore, TQM requires a complete turnaround in organizational culture and management approach as compared to the traditional way of top management giving orders and employees obeying them. The first and probably most significant movement to promote particular managerial policies was the Scientific Management movement which spread in the USA in the first decade of this century. Fathered by F.W. Taylor, this movement promulgated the rationalisation and bureaucratisation of work processes that become a distinguishing element of the mass production techniques (Palmer & Saunders 1992:70).

Despite these similarities, TQM has some fundamental differences from these three approaches. First the role of management is seen differently. Taylor sees this role as defining precisely each step of the worker's job. Scientific study of each job allows precise determination of the capability of the worker and no deviation from predefined method is allowable. The Human Relations approach in contrast focus on the individual needs of the worker. MBO systems give a false atmosphere of objectivity by focusing only on the aspects of the business that are measurable. As a result they lose the reality of human interaction and teamwork that is at the centre of TQM. The TQM approach is different because it is concerned with variations in process and systems, rather than with variations in individual behaviour (Palmer & Saunders 1992:71). It also sees the major role of managers to be the continuous improvement of processes rather than the management of employees. (Ammond (2001:669) sums it by stating that TQM is "the application of quantitative methods and human resources to improve materials supplied to an organisation, all the processes within an organisation, and the degree to which the needs of a customer are met, now and in the future".

TQM may be distinguished from both Quality Control (QC) and Quality Assurance (QA). QC places an emphasis on final inspection by separate QC department and so removes the responsibility for quality from the manager of the process. QA maintains the responsibility with the manager, giving QA department more training and auditing role. TQM takes the notion that quality is an aspect of general management, further arguing that QA is needed in all units of the organisation and not only in production (Palmer & Saunders 1992:67). Therefore, one could conclude by defining TQM as a management approach for continuously improving the quality of every aspect or organisational activities, leadership, planning, human resources, processes, systems, culture, and communication through which the needs and expectations of the organisation, employees, customers, and the community at large are satisfied or exceeded.

3 III.

4 Total Quality Management and Industrial Performance

Industrial performance has several meanings dependent upon the perspective and discipline from which the scholar articulates this concept. Industrial performance is conceived as industrial output or productivity. Telsang (2007) asserts that productivity is the quantitative relationship between what is produced and what is used as a resource to produce them. Economists determine productivity from Gross National Product (GNP). It means the ratio of output to input. Managers consider productivity as cost cutting and speed up in production; accountants consider productivity from financial ratios and budgetary variances while engineers consider productivity with respect to output per hour, capacity utilization, and manpower efficiency. In the context of this study, productivity is the ratio of outputs to inputs at periodic intervals. Industrial performance means the value of annual output of brewery firms.

Total quality management is world-class productivity and value addition in order to deliver customer delight (Telsang 2007). Total Quality Management perspective of productivity considers both the qualitative and quantitative facets of relationship between inputs and outputs. The application of total quality management results in improved quality product with increased output, sales volume and customer satisfaction.

There is empirical evidence that lends credence to the relationship between Total Quality Management and Industrial Performance. Hendrick and Singal (1997) investigated the relationship between quality of product and financial performance by comparing the financial performance of firms that have won quality awards against a control group of non-winners. Their result showed that quality award winners outperformed the control firms

on a series of operating-income based measures. Similarly, Jarrell and Easton (1998) examined the impact of Total Quality Management on the performance of 108 firms that began total quality management implementation between 1981 and 1991. The results showed that the improvement of performance was consistently stronger for firms with more advanced total quality management system. In another related study, Garvin (1991) conducted a study on the impact of total quality management practices and organizational performance. The study found a strong relationship between total quality management practices and organizational performance measured in terms of productivity, profitability and customer relations. The findings of the previous studies clearly demonstrated the significance of quality products and services through application total quality management to meet customer desires and increase industrial productivity (Greegh, 2012; Olaopa, 2015; Bamigboye, 2015; Omoaare, 2017; Kalomopalam, 2018; Craige, 2019).

Performance measurement is an integral part of all management processes and traditionally has involved management accountants through the use of budgetary control and the development of financial indicators such as return on investment. However, it has been claimed that conventional aggregate financial accounting indicators are inappropriate in TQM settings (Drucker, 1990). Several authors have claimed that an important part of ensuring that TQM leads to sustained improvements in organizational profitability is that direct quantitative measures of manufacturing are used to assess the effectiveness of managers' efforts to manage the development and implementation of TQM programmes (Armitage, 1990; Vollmann, 1990; Hall, et al., 2001). With the growing awareness that quality of final products and services is a strategic competitive variable, companies have recognized also that the concept of high quality must be applied to production processes to generate quality products and minimize costs. TQM has evolved as a philosophy that emphasizes the need to provide customers with highly valued products and to do so by improvements in efficiency by way of eliminating waste, reducing lead times at all stages of the production process, reducing costs, developing people, and improving continuously (Harmon & Peterson, 2020).

While TQM provides a potential for organizations to enhance their competitiveness there is evidence that many organizations have been disappointed in the extent to which TQM has been associated with sustained improvements in organizational profitability (Wilson, 1992). Performance management systems are a cornerstone of human resource (HR) management practices and are the basis for developing a systems approach to organization management. In theory, a performance management system links organizational and employee goals through a goal-setting process, and subsequently links employee goal achievements to a variety of HR management decisions through a performance measurement process.

IV.

5 Theoretical Underpinning

The theory we employed to extrapolate the effect of total quality management on the manufacturing organizations in this study is Deming's Management Theory. The proponent of this theory is William Edwards Deming. Deming was born in 1900, and earned a Ph.D. in mathematics and physics from Yale university in 1928 (Koehler & Pankowski 1996:16). He was first introduced to the basic's tenants of traditional management principles in the late 1920s, as a summer employee at Western electric Hawthorne plant in Chicago (Hunt 2003:62).

According to Evans and Lindsay (2008:94) Deming argued that "a product or service possesses quality if it helps somebody and enjoys a good and sustainable market". Deming's philosophy emphasised the role of management in that, most of the opportunities for quality improvement require management action, and very few opportunities lie at the operator level (Montgomery 2005:16). This view led to his often-quoted dictum that: "Over 85% of quality problems can be solved only by management" (Farnum 2004:32).

Deming firmly believed in the systematic nature of institutions, and a need to reduce variations in institutional processes. In his view, variation is a chief culprit of poor quality. To accomplish reduction in variations, he advocated a never-ending circle of product/service design, manufacture/service delivery, tests, sales, followed by market survey and then redesign and improvement. Such a meticulous programme achieves the desired goals of improved quality, customer satisfaction, higher productivity, and lower total cost in the run (Mitra 1998:44.) Deming's theory is that quality improves productivity and competitive position. He defines quality in terms of design, quality of conformance. He advocates measurement of quality by direct statistical measures of performance against specification (Dale & Plunkett 1990:8-9). His application of statistical control techniques at the American National Bureau of the Census led to a six-fold productivity improvement in some processes and his approaches were hailed by engineers after they were published in 1943 (Morgan & Murgatroyd 1994:37). This is a clear indication that improvements in quality lead to lower costs because they result in less rework, fewer mistakes, fewer delays and snags, and better use of time and materials. Lower cost in turn leads to productivity improvements.

V.

6 Conclusion

This study has shown that there is a relationship between successful implementation of total quality management and the service delivery in manufacturing industries. It has also shown the human resource implications of total

quality management. It has reflected the fact that the implementation of total quality management, based on the underlying assumption that employees and managers will be forced to practice continuous improvements.

The various roles which high quality standard and customer satisfaction could assume in the implementation of total quality management were presented. In this connection, various elements were brought up each of which would have a bearing on the role of the human resource management in the implementation in manufacturing industries.

Overall, it would seem that total quality management and service delivery in manufacturing industries in Nigeria have quite a lot in common and would be able to contribute successfully to the accomplishment of the organization aims. ¹

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