

TOTAL QUALITY MANAGEMENT (TQM) IMPLEMENTATION AND ORGANISATIONAL PERFORMANCE: A STUDY OF THE TELECOMMUNICATION INDUSTRY IN BAYELSA STATE OF NIGERIA

Laguo Livingstone Gilbert
Department of Business Administration,
Faculty of Management Sciences Federal University Otuoke, Bayelsa State

Felix Oluwatayo Oloda
Department of Business Administration,
Faculty of Management Sciences Federal University Otuoke, Bayelsa State

ABSTRACT	KEYWORDS
<p>Purpose - The purpose of this paper is to determine the factors of total quality management (TQM) and to measure their influence on the performance of selected telecommunication companies in Bayelsa State.</p> <p>Design/methodology/approach - Data was collected using a self-administered questionnaire which was distributed to 200 personnel in telecommunication companies in Yenagoa, the capital city of Bayelsa State. Out the 200 questionnaires, a total of 188 questionnaires were returned.</p> <p>Findings - The findings from the study reveal that TQM plays critical role in the improvement of organisational performance. However, the value of top management support, quality data reporting, and process flow management are better appreciated when implementing TQM in the telecommunication organisations under study.</p> <p>Research limitations/implications - a quantitative technique was adopted in the study, the sample is restricted to organisations selected. The data were collected from both top and middle managers in the selected organisations.</p> <p>Originality/value - This study offers insight into practical and reasonable approaches of TQM variables to increase performance in the Nigerian telecommunication sector.</p> <p>Paper type research paper</p>	<p>Total quality management, organisational performance, Nigeria telecommunication sector</p>

Introduction

The implementation of quality processes has become one of the most driving forces of competitive advantages in today contemporary organisations (Okorie 2016; Al-Kayed *et al.* 2020). The identification of organisational improvement and the demand for better quality processes have instigated organisations to realize their readiness to adhere to quality procedures in order to compete successfully in the market. To meet this demanding challenges, organisations would have to invest sufficient resources in adapting and implementing quality management processes. TQM is defined as the holistic management philosophy aiming at continuous improvement in all functions of an organisation in order to produce and deliver products or services in line with customers' needs or requirements by better, cheaper, faster, safer, easier processing than competitors with the participation of all employees under the leadership of top management (Othman *et al.* 2020).

Studies shows that the role of TQM is widely recognized as being a critical determinant in the success and survival of servicing organisations in today's competitive environment (Owuso and Darko, 2017; Androwis *et al.* 2018). TQM is also seen as a source of competitive advantage (Ferdousi *et al.* 2018; Ali *et al.* 2020), innovation (Fernandes and Solimun, 2017), change and new organisational culture (Asplund and Bolander, 2017). This means a decline in customer satisfaction resulting from poor service quality delivery would be a serious cause of organisational failure. On the other hand, consumers are increasingly becoming aware of standards of products and services quality which makes them to develop higher expectations.

Regardless of the application of TQM practices in organisations (El *at al.* 2007; Yunis *et al.* 2013; Mirand *et al.* 2014; Nguyen and Chau 2017; Youssef and Youssef 2018; Jimenez-Jimenez *et al.* 2020; Bhaskar, 2020; Khanam *et al.* 2020), there is lack of methodical evidence regarding the extent to which TQM is applied and implemented in many Nigerian organisations including those in servicing industry. The Nigerian telecommunication sector plays a very crucial role in the development of the economy. These organisations add value to all aspects of business as well as increasing product and services consumption. In view of the fact that the Nigerian telecommunication sector helps to boost Nigerian economy, our study show new data and empirical insights into the relationship between TQM and performance improvement in organisations in the telecommunication sector.

Literature Review

According to Munisu, (2013) quality refers to the ability of a product or service to constantly meet or exceed customer expectations. TQM has been widely accepted as a holistic management philosophy that strives for continuous improvement in all functions of an organisation (Oakland, 2014). Chaudary *et al.* (2015) add that TQM is a set of instruments employed by the firm's management that aim to provide better value to customers by recognizing their observable and hidden needs and improve the efficiency of the procedure that generate the product or service. Garvin (1987) viewed quality in terms of the transcendent, product based, user based, and manufacturing and value-based approaches. Garvin identified eight attributes to measure product quality. On his own part. Juran defined quality as "fitness for use" and focused on a trilogy of quality planning, quality control, and quality improvement (Mitra and Golder 2006). Also, Crosby (1996) in Demirbag *et al.* (2006) define quality as "conformance to requirements or specifications" based on customer needs. In his work, Crosby identified 14 steps for a zero defect quality improvement plan to facilitate performance enhancement.

Deming (1986) view that quality is a predictable degree of uniformity and dependability, at low cost and suited to the market. Deming also identified 14 principles of quality management necessary to improve productivity and performance of organisations. In his study, Ishikawa emphasized the importance of total quality control due it impact on organisational performance. He added to the quality management literature by introducing a cause and effect diagram (*Ishikawa diagram*) used to diagnose perceived quality problems (Mitra, 1987). Similarly, Feigenbaum introduced the concept of organisation-wide total quality control and defined quality as “the total composite product and service characteristics of marketing, engineering, manufacturing and maintenance through which product and service in use will meet the expectations of the consumer” (Mitra, 1987). The concerns of these quality improvement plans are management commitment, strategic approach to a quality system, quality measurement, process improvement, education and training, and eliminating the causes of problems. TQM is mainly concerned with continuous improvement in all work, from high level strategic planning and decision-making, to detailed execution work assignments at the workplace. It stems from the belief that mistakes can be avoided and defects can be prevented. Chiguvi (2016) believes that the application of TQM continuously improving results, in all aspects of work. In kwesie and partners (2009) TQM is an approach to improving competitiveness, effectiveness and flexibility of an organisation for the benefit of customer satisfaction. Kanji and Wallace (2000) confirm that TQM is a culture of organisations committed to customer satisfaction through continuous improvement. However, TQM culture varies from one country to another and between different industries, but has certain essential principles, which can be implemented to secure greater market share, increased profits, and reduced costs. The literature of TQM identifies 12 common aspects: Committed leadership, adoption and communication of TQM, closer customer relationships, benchmarking, increased training, open organisation, employee empowerment, zero defects mentality, flexible manufacturing, process improvement, and measurement.

In the same vein, Saraph *et al.* (1989) developed 78 items related to TQM practices, which were classified into eight critical factors to measure the performance of TQM in an organisations. The study labelled these factors as, Role of divisional top management and quality policy, role of the quality department, training, product and service design, supplier quality management, process management, quality data and reporting, and employee relations. More so, other instruments developed to critically determine quality identified seven quality factors are; quality information, top management support, product design, process management, customer involvement, workforce management, and supplier involvement (Flynn *et al.*, 1994), to measure the impact of TQM practices on quality performance.

In their study, Anderson *et al.* (1994) used variables such as visionary leadership, internal and external cooperation, learning, process management, continuous improvement, employee fulfilment and customer satisfaction to access quality and organisational performance. This has been used to increase continues improvement, reliability, innovative efficiency and business effectiveness. Also, Abdul, (2018) shows that TQM is like a pyramid that represents five distinct components; management commitment, customer supplier chain, quality systems and team work. Accordingly, these are part of the measures Japanese and US manufacturing/servicing firms adopted to enhance their quality processes. Studies noted that same approaches are the primary reason for the success of Japanese manufacturing firms, and are still comprehensively and consistent used by all levels of workers (Nair & Choudhary, 2016). Studies revealed that Germany, UK, France and Italy are some of the European countries that have taken a significant interest in adopting TQM. Also, Rashid and Taibb, (2016) noted

that UK telecommunication and locomotive industries indicate that firms use to have a traditional attitude towards quality management, but an adherence to TQM they are now able to improve customer satisfaction and retention.

However, developing nations such Nigeria is synonymous with poor quality products. Many developing countries that still recognizes the old fashion of manufacturing are still engulfed with producing shoddy products, enhance, have their production function isolated from the quality function.

Most organisations in the developing nations are still limited with the followings:

- ✚ Lack of employee involvement and participation in quality improvement efforts.
- ✚ Lack of management commitment and motivation.
- ✚ Perception that quality is an optional extra and not a necessity for development.
- ✚ Traditional belief that “quality costs money”.
- ✚ Lack of communication and trust between suppliers, dealers, management and trade unions.
- ✚ Unorganized and indifferent customers.
- ✚ Lack of political support.
- ✚ Lack of established quality standards and inadequate test facilities
- ✚ Obsolete technologies.
- ✚ Low level of education.
- ✚ Negligible capital investment in technologies, research and development and employees’ education, etc.
- ✚ Disrespect to the people so far as quality of life is concerned.
- ✚ Undesirable social tensions such as terrorism, violence, religious fundamentalism, etc.

But Lakhe and Monanty (1994) affirm that TQM implementation is a major task which most time follows stages such as:

0. Understanding the organisational system.
1. Developing a strategic plan for the TQM effort.
2. Planning assumptions.
3. Specifying strategic objectives.
4. Specifying tactical objectives.
5. Implementation planning.
6. Project management.
7. Measurement and evaluation.
8. Evaluation, accountability, follow through, ensuring effective implementation.

This aligned with Oakland (1991) 13 steps to TQM which are: (1) Understanding of quality (2) Commitment to quality (3) Policy on quality (4) Organization for quality (5) Measurement cost of quality (6) Planning for quality (7) Design for quality (8) System for quality (9) Control of quality (10) Teamwork for quality (11) Capability for quality (12) Training for quality (13) Implementation of TQM.

On the other hand, the implementation of TQM is not an easy task because it requires a total change in organisational culture, shifting of responsibility to management, and continuous participation of all in the quality improvement process. Based on this Al-Kayed and Al-Tahrawi (2020) point out the barriers in implementation of TQM as lack of participation of managers, overlapping of responsibilities of leadership, limited resources, fear of change, work overloads. Others scholars found other limitations

as; lack of comprehensive quality improvement education, uneven top management support, lack of customer orientation, lack of clarity in measurement systems, scant resources for required investment (Okorie & Humphrey, 2016). This shows that TQM implementation requires concerted effort, and must be driven by top management. Relating TQM Implementation to performance must be communicated effectively by those in charge with such responsibility. Sometimes managers failed to develop plans to would accommodate what they intend to achieve in quality implementation and performance improvement.

Measuring Performance is critical when talking about effective management in organisations. It is not possible to improve on something without measuring it appropriately. Thus, to improve on firm performance, it is important to determine the extent of TQM implementation and measure its impact on performance (Neyestani & Juanzon 2016). Previous studies have measure TQM and different variables and aspects of organisational survival, for example, Mana and Patil (2015) measure financial performance of TQM and non-TQM firms. While some researchers measures TQM from customer perspective retention and commitment, and other measures TQM from internal business viewpoint (Muhammad, 2018). In this study, we investigate top management support and performance, quality data and reporting and performance, process flow management and performance, training for quality and performance. So, we develop a number of hypotheses to investigate the relationship between the implementation of TQM practices and performance in the Nigerian telecommunication sector. Thus, first we examine the relationship between the factors of TQM considered and their impact on both measures of performance equally considered in this study. The table below depict the dimensions considered and their description

Table 1: TQM dimensions

Dimensions	Description
Top management support	Top management commitment is one of the major determinants of successful TQM implementation. Top management has to be the first in applying and stimulating the TQM approach, and they have to accept the maximum responsibility for the product and service offering. Top management also has to provide the necessary leadership to motivate all employees
Quality data and reporting	Quality information has to be readily available and the information should be part of the visible management system. Records about quality indicators have to be kept, including scrap, rework and cost of quality
Process flow management	Housekeeping along the lines of the 5S concept. Statistical and non-statistical improvement instruments should be applied as appropriate. Processes need to be mistake proof. Self-inspection undertaken using clear work instructions. The process has to be maintained under statistical control
Training for quality	Workforce management has to be guided by the principles of: training, empowerment of workers and teamwork. Adequate plans of personnel recruitment and training have to be implemented and workers need the necessary skills to participate in the improvement process
Customer relationship	The needs of customers and consumers and their satisfaction have always to be in the mind of all employees. It is necessary to identify these needs and their level of satisfaction

- H1. There is a positive relationship between top management support and organisational performance
 H2. There is a positive relationship between quality data repeating and organisational performance
 H3. There is a significant relationship between process flow management and organisational performance
 H4. There is a significant between training for quality and organisational performance
 H5. There is a positive relationship between customer relationship and organisational performance

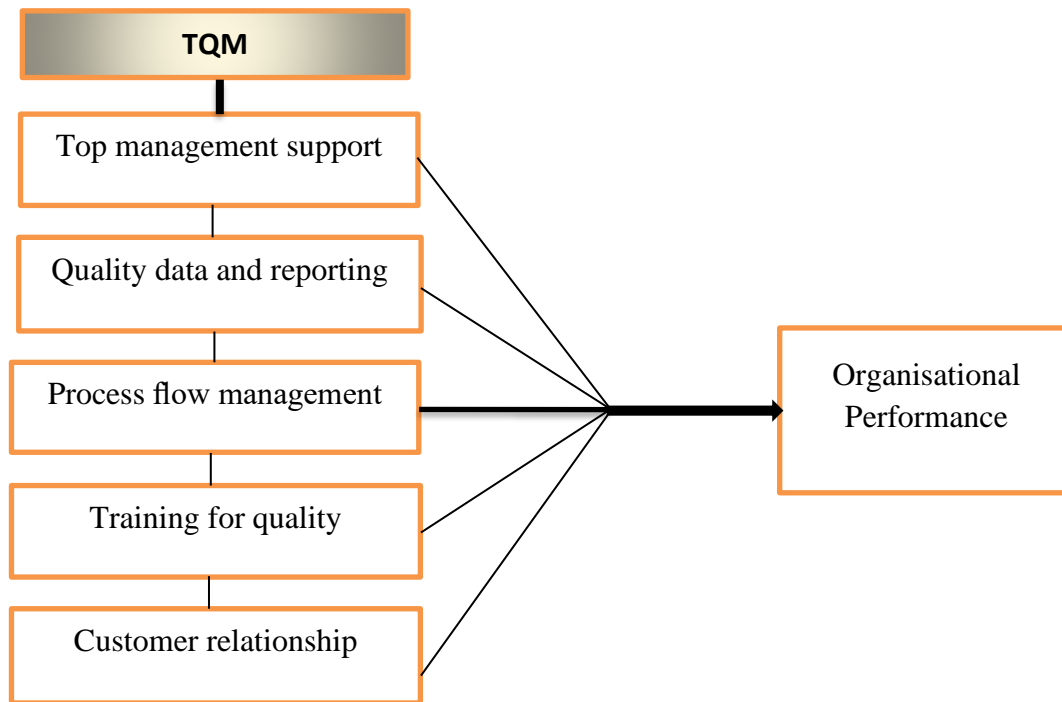


Figure 1: Research Framework for the study

Research Methodology

We adopted a mixed method strategy and surveyed all managerial level and customers of all four telecommunication organisations in Bayelsa State, which are MTN, Globacom, Airtel and 9Mobile. We chose the telecommunication sector for the following reasons: first, the sector is one the growing sectors in Nigeria, secondly, the sector is associated with quality work processes, thirdly, the sector has a strong potential of turning Nigeria into an economic hub in Africa. More so, surveying would enable this study collect data and generalized reliable and valid outcomes (Saunders *et al.* 2009; Sekarau and Bougie, 2010; Bryman and Bell, 2011). So, both quantitative and qualitative data were collected and analyzed in order examine fully the relationship between TQM implementation and organisational performance. The dimensions of TQM identified for the study were measure through questionnaires and personal interviews. The questionnaire development followed the process recommended by (Yin, 2003; Creswell, 2009; Saunders *et al.* 2009), either trialed, modified and then distribution. Therefore, Six-point Likert scales (strongly disagree, disagree, slightly disagree, slightly agree, and strongly agree) were used in formatting the questionnaire. The instruments for the study were adopted from critical TQM construct, Management Skills Profile (MSP) by Personnel Decisions International and

organisational commitment questionnaire (OCQ) Porter and Smith, 1970; Sevy *et al.*, 1985; Hofstede *et al.* 1990), described as unidimensionality of constructs.

Table 2: Analysis

S/N	Scales	Number of Items	Deleted Number	Value of Cronbach's alpha
1	Top management support	10	No	0.839
2	Quality data and reporting	10	No	0.855
3	Process flow management	8	1	0.839
4	Training for quality	10	No	0.839
5	Customer relationship	8	No	0.790

Table 3: Questionnaire Response Rate

S/N	Questionnaire Distribution	No of Quest	Percentage
1	Number of questionnaires distributed	200	100%
2	Number of questionnaires returned	188	94%
3	Number of invalid questionnaires	1	0.5%
4	Number of valid questionnaires	186	93%

Correlation analysis is considered to help to describing the strength and direction of the relationship between variables as a well as provide initial evaluation to see if the variables are related to one another (Field, 2013).

Bivariate correlation analysis of Spearman rho shows a positive relationship between top management support ($r = 0.756$), quality data and reporting ($r = 0.701$), process flow management ($r = 0.802$), training for quality ($r = 0.743$), and customers relationship ($r = 0.827$) with organisational performance. This result is in line with relevant literature which indicates that these TQM variables have relationship with organisational growth, performance and success (Muhammad, 2918; Abu Saa *et al.* 2019). On the other hand, the summary of regression analysis indicated that top management support ($\beta = 0.219$, $p < 0.001$), quality data and reporting ($\beta = -0.357$, $p < 0.001$), process flow management ($\beta = 0.424$, $p < 0.001$), training for quality ($\beta = 0.240$, $p < 0.001$) and customer relationship ($\beta = 0.077$, 0.137) on performance. The regression result indicates that top management and training for quality have the highest impact on organisational performance in the Nigerian Telecommunication sector.

Managerial implications and conclusion

The findings of the study reveal that the TQM have a positive effect on organisational performance especially in organisations in the Nigerian Telecommunication sector. The result indicates that top management support ($\beta = 0.219$, $p < 0.001$) and training for quality ($\beta = 0.240$, $p < 0.001$) have the highest effects on performance, while customer relationship has low effect ($\beta = 0.077$, 0.137), on performance in this study. This shows that TQM strategy provides better services required for increased organisational performance in developing nations such as Nigeria. The result equally shows that the most important variable found in this study were top management support and training for quality. The other variables are important, but this study found top management support and training for quality as the most important variable for this study.

This shows that the characteristics of top management support should be appreciated when adopting TQM to increase performance. This means that organisational leaders must accept quality responsibility, support a long term quality improvement process and monitor all provide a quality feedback performance process. On training for quality, the findings indicated that training of personnel plays significant role in moving organisations forward. It shows that those responsible for quality process implementation should be given advanced training techniques, training in statistical techniques, work skill training, data process and analysis etc., to enable them fit into proper quality workplace. So managers in the telecommunication industry in Nigeria need to understand that values of TQM especially top management support or commitment, and training for quality will help them understand the TQM implementation. The findings equally show that manager in the telecommunication selected for the study have low capacity of quality data processing, process flow management and customer relationship, which is in contrary to the literature which clarified process flow management, quality data and reporting as well customer relationship as core values to be considered when adopting and implementing TQM (Oakland 2014; Okorie, 2016; Al-Kayed et al. 2020).

So, a continue adherence to other values that are non TQM implicated would not contribute to effective TQM implementation, therefore, effective TQM implementation requires an increased level of commitment, adequate quality data and reporting, property flow of management process, provide adequate training that matches the job and ensure required customer relationship.

In conclusion, this study reconnoitered and discovered values of TQM required for performance improvement. The theoretical contribution and practical implications of the study have been highlighted. The study affirmed that staff development from training must persist from time to time, to enable such organisation catch up with modern requirements in the industry. Strategies for customer relations must adequately be considered in order to satisfy targeted customers.

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