PROSPECTS AND PROBLEMS OF TOTAL QUALITY MANAGEMENT ON THE PRODUCTIVITY AND PROFITABILITY OF MANUFACTURING ORGANIZATIONS

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ABSTRACT

This study examined the prospects and problems of Total Quality Management (TQM) on the productivity and profitability of manufacturing organizations. The study investigated how some manufacturing organizations have incorporated the TQM philosophy, the problems encountered and the benefits they derive from TQM system. The study was conducted using case study. The population of the study consisted of 80 Accountants (both male and female) in manufacturing organizations located in urban and rural areas of Anambra state. Nigeria. All subjects of the population were used for the study because the number was manageable. The study utilized a validated 4-point scale questionnaire with reliability co-efficient of 0.83 using split-half method. Mean and standard deviation were used to analyze the data collected in order to answer the research questions, while the null hypotheses generated for the study were tested at 0.05 level of significance using z-test statistics. It was found that, despite the fact that organizations encounter a lot of problems in the application of TQM, there still exist some benefits they derive from it. The study also revealed other reasons why manufacturing organizations engage the activities of TQM. The study further revealed that the opinions of male, female, urban and rural Accountants do not differ significantly on the problems and benefits derived from the application of TQM system in the manufacturing organizations. It was therefore recommended, among others that there should be continuous education and training of all staff on the use of TQM.

Keywords: Accountant, Quality, Management, Productivity, Profitability, Manufacturing Organizations.

INTRODUCTION

Quality as a concept has been defined and described variously in the literature. Many authors and researchers concluded that, the concept is stakeholders' relative because of its slippery nature. On this premise, it was described as beauty that is in the eye of its beholder. However, in the business world today, it has been discovered that quality is the pivot to organizing excellence and ultimate customer satisfaction. Ibijola (2014) citing the British Standard Institution defined quality as the totality of features and characteristics of a product or services that bear on its ability to satisfy stated needs. Consequently, it has become imperative for manufacturing organizations in order to meet up with the current global challenges. The TQM is a management philosophy of a set value and belief that underline everything that an organization does and all its activities, process and resources (including staff).These values and belief according to Akpeyi (2006), remain constant, but the practices and techniques of TQM

evolves and improves overtime. Total Quality Management requires that quality process be extended out of the organization, both to customer and suppliers.

The word quality suggests excellence in every aspect through product design, manufacturing, marketing, and finance among others. Quality is therefore a complex concept that has become one of the most universally appealing of all management theories. Arene in Osadebe (2010) described total quality management (TQM) as a means of applying the quality concepts to the organization structure to facilitate team work, employee empowerment and reduction in cycle time. Anunibe (2009) defined TQM as a way of ridding people lines of wasted effort by bringing everyone into the process of improvement so that result are achieved in less time. The method and techniques used in approaching TQM can be improved so that results are achieved. TQM in an organization serves as a major tool for combating staff competition and keeping abreast in forms of growth and expansion. TQM balances the diverse business issues such as leadership strategies, planning, stake-holders and marketing external customers. It also aligns the financial management and others to achieve a better result.

The utmost satisfaction of customers becomes the primary aim of management within an organization. The organization could achieve this when the entire resources of both human and material are put into quality use. To achieve this, the organization needs to embrace, adopt and take the issue of quality as an essential element. The approach to this need is TQM which according to Epumepu (2014), goes beyond setting standard to ensuring that most individuals involve in the process (management, employees and the customers) remained satisfied. Thus, TQM could be aptly adopted in the implementation of business organization transactions especially the manufacturing organizations. On this premise, the management of quality has become a key issue for all organizations whether industrial, commercial or construction.

Objectives/Principles of Total Quality Management (TQM)

Akpeyi (2006) and Anunibe (2009) highlighted the objectives of TQM to include achieving quality in everything (people, processes, products/services); doing things right first time and every time; and continuously striving for improvement. They further highlighted that the objectives of the TQM is to strengthen the supplier-customer chain, flatten hierarchies and home stable structures, and provide quality leadership and motivation. This will enable all employees to be committed to the total quality process, and use the skills acquired to manage business. When the above culture is instituted in an organization, the organization will be on a winning streak and both employees and the public will invariably perceive and acknowledge the organization as excellent.

Successful implementation of TQM relies on several principles according to Osadebe (2010), these include customer focus, quality definition, measurement, process improvement, standardization, variation reduction, team work, empowerment, open communications, and continuous improvement. The` success of total quality management (TQM) over the long term requires that the organization first identifies who its customers are, both internal and external. Therefore, for an organization to be perceived and acknowledged as a quality organization, it must achieve quality in the three components of people, processes and product/services.

Basic Tools of Total Quality Management

According to Osadebe (2010), some of the basic tools of TQM include; check sheet, fish bone diagram, flow chart, bench making, parent analysis, chart SPC (statistical process control I) and

PDCAC (Plan, Do, Check and Act). For the organization to attain its corporate objectives there is need for it to adhere to these tools towards higher productivity. Akpeyi (2006) observed that higher productivity through TQM is a means for motivating employees. These include team meeting in order to minimize waste of time and energy, effective communication, flow between management and employees, empowerment to enable the employees strive for quality improvement and eliminating internal bottlenecks. The schemes enhance the self-esteem and self-work of teams and the individuals.

Deming (2006) outlined fourteen points which constitutes a theory of management that forces managements to focus on variability in processes and to understand the differences between common and special variations. Deming however believed that to try for quality in everything, an organization requires a change in philosophy. And that issue of quality improvement is a continuous process. Gullen and Halligun (2007) and Juran (2006) argued against the usefulness of Deming's approach. They based their philosophy on the belief that quality must be planned, it does not happen by accident. Osadebe (2009) defined productivity as the ratio output (i.e. the quality of goods and services produced) to input (such as the quantity of labour, capital, energy). Quite often, manufacturers are faced with the problem of the product development or modifications. Therefore the level of productivity will be adversely affected if organizations that render quality customer services are also confronted with the problems of quality which make it difficult for them to achieve a positive growth of productivity. Juran (2006) noted that most quality problems occur because workers are careless and not properly motivated. Juran disagreed with Deming's theory of short cuts to quality. He introduced formula for achieving success so as to establish plans for reaching goals. While Deming (2002) focused on quality required nothing short of a resolution and provides a philosophy for guiding a big change effort, Juran believed that the changes to quality can occur by using the current frame work for organization decision and action.

Statement of Problem

In many cases, where total quality management is practiced, management often show signs of greater commitment of determination to achieve the success. Most organizations that practice TQM seem to have been faced with the danger of going out of business at one point in time or the other, while some were able to survive the crises situation. Probably, this may be due to pressure faced by management to set priorities that will assist to maintain or improve organization's performances.TQM application requires that management should dedicate time, money, labour, and other resources. Since this is the case, total quality management offers conflicts with higher priorities or initiatives. Many employees lack the pre-requisite skills to execute TQM successfully. It was observed that most organizations fail to develop plans that indicate how to make TQM part of the organization, implement the plan, and take all the necessary steps to improve processes of manufacturing and distribution. Also, it appears that these employees' co-operation is not necessarily needed, hence TQM is seen as a culture which requires management to loosen reigns and give employees greater role in managing the organization. Therefore, to make TQM successful, this requires greater involvement by the people doing the work at all level.

Purpose of study

The main purpose of the study is to determine the prospects and problems of TQM on the productivity and profitability of organizations. Specifically the study:

1 Investigated, why the manufacturing organizations are motivated to adopt the TQM system.
2 Ascertained how the manufacturing organizations determine the TQM system.
3 Examined the major problems that prevent manufacturing organizations from adopting TQM.
4 Established the benefits of TQM application towards, productivity of manufacturing organizations.

Research Questions

The following research questions guided the study:
1 Why do the manufacturing organizations embark on the system of TQM?
2 How do manufacturing organizations determine the TQM system?
3 What are the major problems that prevent manufacturing organizations from adopting TQM system?
4 What are the benefits of TQM application towards productivity of manufacturing organizations?

Hypotheses

$H0_1$: There is no significant difference between the mean scores of male and female Accountants on the major problems preventing manufacturing organizations from adopting TQM system.

$H0_2$: There is no significant difference between the mean scores of urban and rural Accountants on the benefits of TQM application towards manufacturing organizations' productivity.

Method

The study was a case study of 80 manufacturing organizations located in urban and rural areas of Anambra state. The population of the study comprises of 80 Accountants (male and female). Data were gathered from various account/finance departments of the manufacturing organizations. There was no sample since the size of the population was manageable. The instrument for data collection was a self-designed 4-point scale structured questionnaire, with Strongly Agree (4), Agree (3), Disagree (2), Strongly disagree (1). The questionnaire was validated by two experts each from the Departments of Educational Management and Accounting, Ekiti State University respectively. The internal consistency of the questionnaire was established through the split half analysis. The result showed a co-efficient of 0.83 which is deemed reliable. The mean and the standard deviation were used to analyse the data collected in order to answer the research questions. For decision, items with a mean range of 3.01to 4.00 were regarded as strongly Agree; 2.01 to 3.00 as Agree; 1.01 to 2.00 as Disagree; and 0.01 to 1.00 as Strongly Disagree. The null hypotheses were tested at 0.05 level of significance using z-test. However, out of the 80 questionnaire administered, 62(78%) completed copies were successfully retrieved and used for the analysis.

Presentation of Results

The data collected were analyzed and the results are presented in the tables below:
Question 1:
Why do the manufacturing organizations embark on the system of TQM?

Table 1: Mean scores and Standard Deviation on why the Manufacturing organizations embark on the system of TQM

S/N	Reasons for Adoption TQM System	Mean	SD	Interpretation
1.	Reduce waste	2.72	0.86	Agree
2.	Increase output	2.63	0.94	Agree
3.	Satisfy customers	3.60	0.33	Strongly Agree
4.	Others/not specified	2.74	0.57	Agree

The results presented in table 1 above shows that, the respondents agreed to reasons why the manufacturing organizations embark on TQM. This is because all the items have a mean interpretation of either agree or strongly agree. Hence, the reasons why manufacturing organizations were motivated to TQM system are rated Agree.

Question 2: How do manufacturing organizations determine the TQM system?

Table 2: Mean Scores and Standard Deviation on how the Manufacturing Organizations determine the TQM System

S/N	Determining the TQM System	Mean	SD	Interpretation
1.	Customers	3.36	0.15	Strongly Agree
2.	Services Rendered	2.81	0.51	Agree
3.	Staff	2.94	0.64	Agree

Data presented in table 2 indicate that among the various ways of determining the TQM system in the manufacturing organization, customers were rated strongly agree which seems to attract the highest responses rate followed by services rendered and staff (agree). Though, all the items have mean scores interpretations of either agree or strongly agree, hence the items: customers, services rendered and staff, are accepted as ways of determining TQM system in manufacturing organizations.

Question 3: What are the major problems that prevent manufacturing organizations from adopting TQM system?

Table 3: Mean scores and Standard Deviation on the Major Problems that Prevent Manufacturing Organizations from Adopting TQM System

S/N	Major Problems	Mean	SD	Interpretation
1	Inadequate fund	3.87	0.24	Strongly Agree
2	Management	3.12	0.20	Strongly Agree
3	Insufficient Raw Materials	3.81	0.51	Strongly Agree
4	Low Profit	3.16	0.52	Strongly Agree
5	Incompetent Employees	3.25	0.36	Strongly Agree

The results presented in table 3 above reveal that all the items have the mean interpretation of strongly agree. Among all items, inadequate fund and insufficient raw materials attracted the highest mean scores of 3.87 and 3.81 respectively. This indicates that the major problems faced by the manufacturing organizations are inadequate fund and insufficient raw materials, when TQM system was adopted.

Question 4: What are the benefits of TQM application towards productivity of manufacturing organizations?

Table 4: Mean Scores and Standard Deviation on the Benefits of TQM Application Towards Productivity of Manufacturing Organizations

S/N	Benefits of TQM	Mean	SD	Interpretation
1	Increased output	3.48	0.22	Strongly Agree
2	Lowering Service Cost	3.51	0.31	Strongly Agree
3	Improved Performance	3.16	0.52	Strongly Agree
4	Reduction in Services	3.63	0.24	Strongly Agree
5	Increased Productivity	3.74	0.16	Strongly Agree
6	Gaining competitive advent	3.87	0.24	Strongly Agree
7	Reduce waste of resources	3.52	0.43	Strongly Agree
8	Reduce manpower services	3.25	0.36	Strongly Agree
9	Improved relationship with employees	3.87	0.24	Strongly Agree

Data presented in table 4 above depicts that all the items have mean interpretation of strongly agreed. This means that all the items were regarded as the benefits of adopting TQM application towards manufacturing organization's productivity.

Hypotheses Testing

$H0_1$: There is no significant difference between the mean scores of male and female Accountants on the major problems preventing manufacturing organizations from adopting TQM system.

Table 5: Z-test Scores of Accountants on Problems of TQM

Accountants	N	Mean	SD	Df	Z-cal	Z-crit	Decision
Male	42	3.39	0.54	60	-1.29	2.00	Accepted
Female	20	3.21	0.50				

The data in table 5 shows that z-cal is less than the z-tab; hence the null hypothesis was accepted. This means that, there was no significant difference in the rating of Accountants in manufacturing organizations on the major problems that prevent manufacturing organizations from adopting TQM system.

$H0_2$: There is no significant difference between the mean scores of urban and rural Accountants on the benefits of TQM application towards productivity of manufacturing organizations.

Table 5: Z-test Scores of Accountants on Benefits of TQM Application

Accountants	N	Mean	SD	df	Z-cal	Z-crit	Decision
Urban	45	3.49	0.34	60	-0.26	2.00	Accepted
Rural	17	3.47	0.32				

In table 6, the z-cal of -0.26 is less than the z-table of 2.00 at 0.05 alpha levels; hence the null hypothesis was accepted. Therefore, the responses of Accountants in urban and rural areas do not differ significantly.

DISCUSSION OF FINDINGS

The study found that the reasons for adopting TQM in manufacturing organizations include waste reduction, increase output and satisfy customers' satisfaction. This finding agrees with the submission of Osadebe (2010) who posited that the tools of TQM enable the identification of areas that show process performance and delivering of a product that meet the customers' standards. Therefore, the effort to reduce significant deviation can lessen waste, shorten lead times, lower cost, or make other improvement possible.

Similarly, the study revealed that the means of determining the TQM system are customers, services rendered and staff. The finding corroborates with the position of Akpeyi (2006) and Hunt (2002) when they noted that attaining quality in process means finance, audit, strategic planning, reception, telephoning customers, the right product or services right, and first time every time. Therefore, for an organization to be perceived and acknowledged as a quality organization it must achieve quality in the three components of people, processes and products/services.

Also, the study revealed inadequate fund, inefficient management, insufficient raw materials, low profit and incompetent employees. This finding is inconsonance with the view of Anunibe (2009) and Osadebe (2010) who both observed that the problem associated with TQM practices; invariably have a dwindling effect on productivity, personnel, lack of raw materials, inadequate fund product development or modifications that do not meet the requirement specifications of a quality product. In such a situation, when the ratio input is higher than what the level of productivity would be this will adversely affect the performance of the organizations. On the other hand, when services are confronted with the problems of cost of quality it is difficult for such an organization to achieve a positive growth of productivity.

Furthermore, the study has identified all the items as the benefits in adopting TQM application towards productivity of manufacturing organizations. This finding conforms to the notion of Dale (1990) who reported that, total quality management balances the diverse elements of business such as strategic, planning, increase better performance and services, and human resources management among others. By focusing on doing things right the first time, organizations will avoid the high cost associated with re-work. Hence, TQM requires many business and technical experts to co-operate in defining and improving processes.

The research hypotheses tested revealed that, the opinions of male and female Accountants did not differ significantly on the major problems that prevent manufacturing organizations from adopting TQM system. Also, there was no significant difference in the mean scores of

urban and rural Accountants on the benefits of TQM application towards manufacturing organizations' productivity. This implies that gender and location of an Accountant is not a barrier on their decision regarding the problems and benefits of TQM system in the manufacturing organizations. Hence accounting principles, standards, rules, regulations, concepts and policies are same globally irrespective of the variables mentioned above.

CONCLUSION

Nigeria in the recent times has been witnessing a significant proliferation of manufacturing organizations. This goes a long way to prove that, the more an organization is able to avoid waste, build a system that emphases prevention rather than engage in the re-work of defective products and correcting mistakes, the higher the productivity and profitability level of an organization will be. Therefore, the TQM has a positive impact on productivity and profitability in its entire ramification.

Total quality management attracted a lot of benefits to the manufacturing organizations in the areas of efficiency, continuous improvement of output, reduction in service and manpower services, reduction of waste of resources, productivity and long term success, and improvement in relationship with employees. Apart from the benefits derived from TQM system, there still exist some challenges such as inadequate fund, quality of the employees, and lack of raw materials among others in the application of TQM system in the manufacturing organizations.

RECOMMENDATIONS

Based on the findings of this study, the following recommendations were made:

1. Manufacturing organizations should execute the Total Quality Management (TQM) process through the use of problems solving group or teams quality improvement departments.
2. The use of fishbone diagram should be adopted by the manufacturing organizations in determining the cause of a problem from manpower, machines, methods and materials, and the reduction of the cause least applicable through a process of elimination.
3. Manufacturing organizations should encourage quality staff engagement process.
4. The adoption of PDCA cycle should be encouraged in the manufacturing organizations in such area as: Plan (requires developing an approach for improving a process), Do (entails executing the approach), Check (determines whether or not an improvement occurs) and Act (improving any problem that occurs).
5. The tools and principles of Total Quality Management (TQM) should be applied from time to time for continuous improvement, thereby creating new and improved processes.
6. There should be a continuous education and training for all staff so that attitudes and working practice would be changed fundamentally.
7. Manufacturing organizations should also focus its attention on satisfying its customers by providing quality: services, product, and cost reduction.
8. Funding should be seriously improved by the manufacturing organizations and other donor agencies as funding is the union of all other factors determining TQM system.

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