REVIEW OF QUALITY CONTROL PRACTICES IN NIGERIAN INDUSTRIES

BY

A. A. UMAR
Dept. of Mechanical Engineering,
Bayero University, Kano,
Nigeria

AND

J. C NWACHUKWU
Dept. of Production Engineering,
University of Benin,
Nigeria

ABSTRACT

The paper reviews quality control practices and development in Nigerian industries. Quality factors such as specification, training, as well as new factors such as quality circles, total quality were investigated and the level of their adoption in the Nigerian industries was evaluated. The results of the study shows that Nigerian industries are yet to adopt new quality management techniques such as Total Quality Management, Total Quality Control and Quality Circles. Quality control practice in the industries has not changed much from what it use to be in the nineteen eighties despite global competition.

SIGNIFICANCE

It is realistic to say that the rapid development in quality management will continue in the global scene, yet it is virtually elusive in the developing countries that depend on importation of manufactured goods from developed countries. Nigerian manufacturing industries were bedeviled by so many problems which include the production of inferior quality and expensive products, prevalence of foreign competitors with high quality products and rapid innovations, exhaustively maintained and poorly operated machinery, low level technology, high production costs due to wastage in form of defectives and scraps, poor management techniques, etc. Despite the problems stated above, it was necessary for the industries to remain afloat for both the owners of the business as well as the nation. The significance of the work therefore is to review the quality control practices in Nigerian industries to find out the reasons for such poor performance and proffer ways of improving the quality practices.

KEYWORDS: Quality Control, Quality Circles, Total Quality Management, Total Quality Control, Quality Related Costs.

1.0 INTRODUCTION

Development in the field of quality control over the past 50 years has been well recognized. This can be seen from the role quality of goods and services play in the global market in terms of competitiveness. Recent advances in quality control led to the branding of its practice prior to 1950 as traditional quality control. However, this does not in any way relegate it to the backstage since the modern methods are based on the principles of the traditional method. Thus, the traditional form of quality control, its elements and principles, the innovations introduced that changed it to Total Quality Control and Total Quality Management have been briefly discussed in the paper.

The research work has the major objective of reviewing quality control practices and techniques in industries in Nigeria based on an earlier study by Nwachukwu (1985) and also investigate the practice of some new quality control parameters in the industries. The work covers four industrial groups including textiles, foods and beverages, metal and component manufacturing industries, and automobile assembly plants.

2.0 BACKGROUND

2.1 QUALITY CONTROL

Over the years, different concepts have been developed to enable the determination of quality built into products. Notable among these include:- Statistics, Probability; and Computer methods. In statistical determination of quality of products, factors such as control charts for variables, frequency distribution, measure of central tendency, measures of dispersion, the normal distribution curves, etc. are used. The fundamentals of probability such as discrete probability distribution, continuous probability distribution, and central charts for attribute are used in ascertaining quality of process. With the advent of computing, the evaluation of quality was made even simpler in the sense that the hitherto long and tedious statistical and probability calculations with their attendant approximations are taken care of by the computer.

2.1.1 Quality Characteristics

Quality characteristics have been grouped into *Structural*, *Sensory, Time Oriented, Commercial,* and *Ethical* (Fogerty et al. 1989). These characteristics determine the real and perceived quality of goods and or services.

2.1.2 Total Quality Control (TQC)

The Japanese evolved this concept based on quality principles attributed to W. E Deming (Schonberger, 1982). The basic precept was that the responsibility for quality rests with the maker of a component or part. It operated under the assumption that it is cheaper to commit time and money to prevent defects than waste it in rework, scrap, and replacement.

TQC is a philosophy of zero defects, which assigns quality responsibility at source of production. It is achieved through training and using established statistical techniques to identify and anticipate quality failure. Total Quality Control departs from Quality Control (QC) in the following ways. Statistical process control and preventive maintenance anticipate production failure. The versatility of TQC, therefore, makes it possible to expect near or total eradication of defective works in firms operating it.

2.1.3 Total Quality Management (TQM)

TQM is the management aspect of TQC and it has been defined as the mutual co-operation of everyone in an organization and associated business processes to produce goods and services, which meet the needs and expectations of customers (Feigenbaum, 1983). It has also been described as disciplined approach to business, based upon a fundamental belief in the need for continuous and company wide improvement.

TQM is mostly referred to as a process because in today's markets, customers' requirements are becoming increasingly more rigorous. Their expectation of product/service in terms of conformance, reliability, serviceability, durability, adaptability, performance features, appearance, environment, user-friendliness and safety are ever increasing. It cannot therefore be said that TQM have been achieved.

3.0 METHODOLOGY

3.1 Population.

The exact number of functional manufacturing industries in Nigeria could not be ascertain by the Corporate Affairs Commission, however, they run into thousand according to the Kano Zonal office of the commission.

It was reliably gathered from the Manufacturers Organization of Nigeria (MAN) that no fewer than 60% of the industries shut down in the last decade. The remaining number running mostly operates below installed capacity. Industries in the food, textile, components manufacturing and assembly plants were found to constitute about sixty percent of those operating and these were the groups that the research concentrated on.

3.1.1 Sample

Due to the constraints discussed above, a sample of 50 industries was targeted, however, by the end of the period for data collection, useful data was gathered from twelve industries which included four textile companies, four food companies, two metal components manufacturing companies and two assembly plants, between the periods 1998 to 2000.

3.2 Data Collection

The research involved exploratory investigation and verification exercises to map-out industries for the study. Secondary data collection was from sources which included MAN, Standard Organization of Nigeria (SON),

National Agency for Food and Drugs Administration and Control (NAFDAC), Corporate Affairs Commission (CAC), periodicals, etc.

Collection of primary data involved identification of the elements to be measured, formulation of measurements format and verifying the information with research contacts in the industry as well as drawing data collection forms and the collection and recording of the data from the industries with the help of the contacts and research assistants.

4.0 RESULTS

4.1 Data Analysis

Nine Quality Control parameters were investigated during the survey. Six of the nine items were based on a previous study in 1985. The last three were new concepts in quality management. Some of the responses are given in Tables 1 and 2.

Table 1: Responses on Some Training Related Factors in Industries.

S/NO	Description	YES	NO
1	The industry has quality control department/section.	100	0
2	Quality control experience is a prerequisite for employment.	83	17
3	New employees are given Quality control orientation.	75	25
4	QC information is dessiminated in the industry.	92	8
5	QC information include TQC.	92	8
7	The company has facilities to operate TQC	58	42
8	The company has QC Circles	42	58
9	The company has standard specifications for it`s products	100	0
10	The company operate with formal QC tools.	100	0
11	The company recieves feedback from customers	100	0
12	The freqeuncy of quality training in the company is adequate	58	42
13	The material of the training is adequate	58	42
14	The present state of QC in the industry is adequate	67	33
15	The company quality information source is adequate	67	33
17	The QC dissemination medium of the company is adequate	67	33
18	The average duration of QC training is adequate	58	42
19	On-the -job training is the best type of quality training	100	0
20	Products of the company carries the NIS mark	33	67

Table 2: Percentage of Responses on Quality Related Issues

S/No	Information	Labor	Materials	Machines	Products
1.	What best improves Quality in the Company	25		75	
2.	What hampers quality most in the company	33	29	38	
3.	What gives an impression of quality in the company		25	50	25

4.1.1 The Organization for Quality Control.

All the industries investigated have either a full fledge quality control department or a quality control section under the production department. The organization of quality control in the food and beverage, and textile industries was good. The two industrial groups have advance quality control tools and systems.

The metal components manufacturing industries have quality control sections under the production departments.

The assembly plants have full-fledged quality control departments.

The findings indicated tremendous improvement in quality organization compared to what it was in 1985. The management of quality control in seventy percent of the industries rests with the quality control and assurance manager. Technical and production managers were responsible for quality in the remaining 30% of the industries.

The managers take directives from general managers. The study indicated that only forty five percent of the general managers were technically trained in quality control.

4.1.2 Specifications.

The Standards Organization of Nigeria and other organizations responsible for standardization urged that all registered industries in the country have products and operations specifications. The study found that while all food and beverages industries have such, only about fifty percent adhere strictly to them. None of the metal components manufacturing industries have specified standards outside the environmental protection standards. The assembly plants standards were mostly specified by their parent companies abroad.

Thirty three percent of the respondents indicated that their company products carry the NIS mark, the sign of high quality given by the Standard Organization of Nigeria.

4.1.3 Operations of Quality Control.

All the respondents indicated that they have formal quality control procedures. The food and textile industries have strict quality control procedures. Ten percent of the respondents indicated that SON visits them regularly to test line samples.

None of the metal components manufacturing companies have well laid down procedures on quality control. The assembly plants have formal quality procedures that are in strict adherence to those of their parent plants.

Sixty percent of the respondents feel that NAFDAC and SON need to do more to improve quality in the production sector. Forty percent of respondents feel that government should give the organizations free hand to prosecute companies producing below standard quality products.

4.1.4 Statistical Quality Control.

All the respondents indicated that they use statistical quality control procedures in checking in-coming raw materials, process control and final inspection of outgoing products. This shows that all the respondents go through the three inspection processes.

On what improves quality in their industries, twenty five percent attributed such to a well trained labor force, whereas seventy five percent attributed it to the state of their production machinery. Twenty nine percent of respondents attributed their quality problems to low quality raw materials while twenty nine percent think that poor state of their machines was responsible for their quality problems. On the question of how a visitor to the respondents industry will perceive their quality state, twenty five percent indicated the high efficiency of their labor force while fifty and twenty five percent indicated the level of technology of their production machines and the quality of their products respectively.

4.1.5 Feedback from Customers.

All respondents indicated that they normally receive feedback from their customers. It was however observed that most of the industries operate with a limited number of customers who were secondary consumers. As a result of near monopoly enjoyed by some of the companies, most of the distributors do not normally collect data on vendor/customer relationship; thus, the feedback claimed by the industries may not be precise.

4.1.6 Training.

Seventy five percent of the respondents indicated giving their staff quality control training when engaged. Eighty three percent of the respondents also indicated quality control experience is a prerequisite for employment. All the respondents claim giving employee quality control training, however, only fifty eight percent think that the frequency, duration and materials for such training were adequate.

All the respondents indicated that on-the-job training as the best type of quality control training. The number of training courses per year ranges from three to ten in the textiles and garment industry, three to thirteen in the food and beverage industry, and two to twelve times for metal component manufacturers and the assembly plants.

4.1.7 Quality Circles.

These are groups of workers whose main interest is quality improvement in the industry. Forty two percent of the industries claimed to have full-fledged quality circles. However, during a follow-up only one of such a circle was seen, and its members indicated that the circle was newly introduced as a step towards the introduction of TQM in the company.

4.1.8 Quality Information.

Information dissemination is a vital tool and it is through information that programs and procedures can be passed from the management to the line worker.

About ninety two percent of the respondents claimed to have a medium of disseminating quality information but only about sixty seven percent agree that the information and medium were adequate.

4.1.9 Total Quality Control.

None of the respondents claimed to be operating full TQC, however, fifty eight percent feel they have adequate facilities to do such. Ninety two percent of the respondents also claimed to have adequate information on TQC. This shows that the Nigerian industries are yet to adopt the new quality management techniques that have been operating for a long time now in the developed economies.

5.0 CONCLUSIONS AND RECOMMENDATIONS

The following conclusions and recommendations can be made regarding quality control practices. It is evident from the findings of the research that each of the industries has either a quality control department or section. This is a good development going by an earlier study, which, showed that only 50% of industries in Nigeria have this important department (Nwachukwu, 1985). With this outcome therefore the expected improvement in quality of goods in the industries must have improved tremendously then they were before. However, there still is the need to further equip and maintain these departments/sections so that they function very well.

The inadequacy of replacement parts and the exhaustively maintained machines found in most of the industries could hardly produce goods that can compete in the international market. The research found that the excessive cost of parts and components was what led to the high maintenance cost and the attendant production of poor quality products. Most of the industries indicated that for them to acquire new machinery, a cheap source of financing have to be available to them, and this is not forthcoming. Likewise inflation with continuous depreciation in the value of the Nigerian currency has contributed to this problem. It is therefore recommended that government agencies, international financing institutions, and the fiscal and financial policies of the Nigerian Government will have to support the industries.

The perceived decline in the quality of education in Nigeria was echoed seriously by most industries. The complaint by the industries that they spend a lot in training and re-training suggests seriously that the vital aspect of re-engineering the education sector should be given due attention. Quality control improvement can only be achieved when there are properly educated personnel in industry. It is recommended therefore, that the education sector in the country be given all the necessary incentives for it to meet the yearnings in the industries.

It was also found from the survey of the industries that they all have standards for their products, which is also a good development. SON and NAFDAC are performing fairly well in trying to enforce standards in the industries. Most multinational industries operate standards of their parent companies, therefore, the problems of having a unified standard from one industry to the other or from one industrial group to another may exist. The survey shows that some of the quality problems in the industries were raw materials related. They complain about the poor quality of locally sourced raw materials. This has led some of them into primary raw materials production despite the attendant problems associated with such tasks. It is recommended therefore that efforts should be geared towards developing the primary industrial sector whose products will serve as inputs to secondary and tertiary industries.

Another important factor that was observed was the insensitivity of consumers in Nigeria with respect to quality. The industries claim to be receiving feed back from consumers on the quality of their products. However interviews conducted during the survey showed that only few complain of poor quality. This shows that the average Nigerian consumer is only concerned with acquisition at cheap price. Thus the manufacturer can produce any quality he wishes and sale it in the market without friction. To help alleviate this problem, it is recommended that industrialists and non-governmental establishments should sensitize the populace based on the belief that consumer complains triggers improvement in quality.

It was also observed in the survey that some industries have only sections under the production department as quality control units. This relegates quality to the background in the production equation whereas it was supposed to be as important as the production department. It is recommended that institutions empowered to enforce quality should make it mandatory for each industry to have a well established quality control department.

Despite the amount of information that was available on new developments in the field of quality management, most industries are yet to realize that they were suppose to be part of the trend. New techniques in quality improvement such as quality circles, total quality control and total quality management are being talk about in the industries. The research found that only about ten percent of the industries have anything to do with quality circles. It can be

concluded therefore that despite the availability of information, new quality management techniques have not been adopted here.

Finally, it can be said that there was improvement in the quality control practices in Nigerian Industries. However, the level is still very low on global basis. The industrialist, government and financial agencies will have to provide incentives to change the quality formula in the industrial sector. This can be done by making available finances at low interest rates, improving education standards and revisiting all fiscal policies that make it difficult for industries to acquire new plants and equipment.

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