

# A Survey Of Quality Management Practices In The Kenyan Small And Medium Manufacturing Industries

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**Abstract:** This paper is to explore the concept of Quality Management Practices (QMPs) and the extent of its implementation in the Kenyan small and medium manufacturing industries (SMMIs). The respondents of this survey consisted of 125 SMMIs in Nairobi and its environs selected through convenience sampling. Nairobi was chosen because it is the capital city of Kenya and where most of the SMMIs are located. Personal visits and interviews were made to Plant managers, Quality managers and factory supervisors and they were requested to fill in questionnaires. According to most of the responses received, SMMIs practice QMPs in one way or another but have very poor implementation levels. The paper concludes that further research is needed to validate and explain the findings; the role QMPs may play and what contributes to poor implementation levels and adoption rate in the operations of SMMIs in the manufacturing sector.

**Keywords:** QMPs, SMMIs, Manufacturing, Kenya

## 1 INTRODUCTION

In this era of competitiveness, it becomes very hard for an organization to survive. Customers' needs become increasingly difficult to meet. They demand for faster response, better value for money, products or services, more product varieties, and expect lower prices, reliable delivery, and product integrity [1]. Many industries have awakened due to this phenomenon to become aware of the need to prioritize quality as the competitive marketing strategy in global market [1]. Quality management practices (QMPs) have become a management philosophy and a way of an industry's life that helps in managing organizations to improve its overall effectiveness and performance towards achieving world-class status for the past two decades [2]. Successful implementation of TQM brings wide benefits and contributions to an industry. The ultimate contributions include cultivating attitude of right first time, achieving zero defects, acquiring effective and efficient business solutions, attaining business excellence, delighting customers and suppliers and many more[3].

The QMPs implementation journey is tough and full of challenges. It requires a full understanding of each activity and involves each individual at every level. It needs a cultural and organizational change to achieve continuing and continual improvement of quality [1]. A number of studies revealed that a large percentage of companies found their TQM efforts failed to live up to their expectations [4]. In Malaysia, TQM implementation is still problematic for many organizations [4]. Hilma [4] found that the core problem of the TQM implementation in Malaysian automotive suppliers was lack of management leadership and commitment to TQM. According to Hansson and Klefsjo [5] many of the failures of TQM are related to bad implementation strategies and unsystematic processes. Screenivasan, et al. [6] indicated that there were many employees who did not have enough idea in the functioning of TQM and they were also found to be lack of incentives to consistently provide quality goods and services. Because of the wide variation in TQM results, identification of factor in TQM implementation is important in order to develop TQM to its full extent.

### 1.1 Objective of Study

#### 1.1.1 Main Objective

To identify the most important factors in implementing Quality Management Practices among Small and Medium manufacturing industries.

#### 1.1.2 Specific Objectives

1. To contribute to beginner industries those are trying to implement QMPs in their industries.
2. To help industries to know their current status in implementing QMPs.
3. To assist the industries to implement a successful QMPs.

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## 2 LITERATURE REVIEW

### 2.1 Total Quality Management

Total quality is a much broader concept that includes not just the result aspects but also the quality of people and the quality of processes [1]. Dale & Cooper [7] defined TQM as the mutual co-operation of everyone in an organization and associated business processes to produce products and services which meet the needs and expectations of customers. It is both a philosophy and a set of guiding principles for managing an organization, based on a fundamental belief in the need for continuous and company-wide improvement [7]. Successful TQM implementation can only come from radically changing of the culture in the organization and transformation in the organization's processes, strategic priorities, and beliefs among others [8].

### 2.2 Small and Medium Manufacturing Industries

Small and medium manufacturing industries (SMMIs) in Kenya have attracted some research but investigations about them are still relatively limited in scope and not integrated in nature. SMMIs represent an important part of the Kenyan industrial sector. Notwithstanding their economic importance, research on SMMIs is still limited and neglected. Despite the tremendous increase in knowledge in the areas of management such as finance, marketing, human resource, operation/production, and strategic management, not much of these management disciplines have been utilized by researchers in investigating SMMIs. Small and medium businesses are usually constrained by their size, their lack of technical expertise, of managerial time, and of financial resources and their human resource limitation [9]. Introduction of TQM in SMMIs had helped to sharpen SMMIs' market focus, to become more efficient, to harness their human resources better, and to improve their competitiveness. TQM implementation leads to better product quality and that SMMIs can implement it as effectively as larger industries. There is a general awareness of the importance of SMMIs for a country's economic growth, industrial development, and employment generation [10].

## 3 METHODOLOGY

### 3.1 Sampling Method and Procedure

The lists of small and medium manufacturing industries were obtained from Kenya Association of Manufacturers, Directory of Industrial Training and Kenya Industrial Research and Development Institute directories. From the sampling frame, the total population of SMMIs in Nairobi and its environs were 125.

### 3.2 Survey Instrument

Survey was conducted for a period of two and a half months. Within this period, questionnaires were distributed and collected from the sample through a face-to-face interview. In order to get better respondent rate, follow-up calls were made, to industries which insisted to be left with the questionnaire, to enquire for their help. At the end of the day, 52 questionnaires were received. The questionnaire was developed based on previous studies, mainly from the questionnaire that was developed by Saraph et al [11]. Out

of 18 different factors developed by the researchers, 10 were found to be outstanding:

F1:	Top management support
F2:	Organisation for quality
F3:	Employee training
F4:	Employee participation
F5:	Customer focus
F6:	Quality system improvement
F7:	Information and analysis
F8:	Supplier quality management
F9:	Continuous support
F10:	Statistical quality technique use

The questionnaire was divided into two sections. The first section was to investigate the general information of the industry that participated in the study. The second part of the questionnaire was to determine the importance of each factor perceived by the industry based on 10 factors and 42 variables that were identified. Five point Likert scale was used to measure the importance of factors. The data collected was analysed by using SPSS software. Reliability test was conducted for measuring the internal consistency of instruments. Descriptive statistics test was used to find the most important factors. The mean score of industries with different sizes was compared irrespective of the industrial sector. The rank of the factors is based on mean scores which were computed from the total scores of variables that were allocated by each industry.

## 4 RESEARCH FINDINGS

The purpose of this study is to identify the most important factor of quality management practices that managers had to implement for successful QMPs implementation among the small and medium manufacturing industries. The research found that, the mean level of importance for all factors is low with a range of 2.79. The mean score obtained ranged from lowest 1.92 to highest 4.71. The most important factor is top management support (4.71), this is followed by the second and third highest factors, organization for quality (4.13) and employee participation (3.97) respectively. On the other hand, the two least important factors among these industries are supplier quality management (2.19) and statistical quality technique use (1.92). The results are shown in Table 1. This research was expanded to look deeper into perception on importance of factors among industries with different profile based on their industry's size and nature of industry.

### 4.1 Medium versus Small

Perception of medium and small industries on the importance of each item of quality management practice is different. Medium manufacturing industries have a higher implementation rate of all quality management practices

than small manufacturing industries. Both medium and small manufacturing industries emphasized more on top management support with a mean score of (4.88) and (4.63) respectively. The results are in Table2.

#### 4.2 Food processing versus Plastic transforming

Plastic transforming industries are leadership focused (4.75) while food processing industries are employee participation focused (4.10), when mean differences are compared. The results are shown in Table3. The rational reason to explain this is the difference in their industry nature. Plastic transforming industries need to have employees who have organizational objectives at their figure tips, involved in quality and have responsibility of tasks they perform. On the other hand, food processing industries need to have direction from the top management since it's the one actively involved in quality, provide the necessary resources in time, consider the customers' needs, and disseminate quality objectives to employees. It can also be driven to the nature of their products which have a shorter shelf life.

### 5 DISCUSSIONS AND CONCLUSION

The results from this research found that top management support, organization for quality and employee participation are the highest factors and the lowest are statistical quality technique use and supplier quality management. Many research results have revealed that top management commitment and leadership, education and training are the most important elements in a successful implementation of TQM [11]. However in this research, education and training has poor implementation rate lower than organization for quality. The research shows, there is enough evidence that there should raise some concerns on statistical quality technique use. In case of this work, statistical quality technique use gave the lowest practice (1.92) from the ten concepts. Hence, it could be concluded that small manufacturing industries must develop on statistical quality technique use and supplier quality management to achieve a higher extent in quality management practices. Perhaps the knowledge found in this research is useful and contributes to quality management practices research. The results can be guideline for beginner industries who would like to practice QMPs program. It also could be self-assessments checklist for the existing QMPs practicing industries to evaluate their QMPs implementation programs and identify problem areas that should be improved. With these, perhaps more industries will be able to attain a successful implementation of Quality Management Practices. Though some owner managers may be familiar with quality management practices and its advantages and therefore would want to implement them, their employees may not know what they are and therefore communication is very important in this regard. It is only through the implementation and practice of quality management that industries will see the need to produce quality products. There is therefore the need for the creation of an entity solely responsible for quality and quality standards. Its responsibility should be assisting industries in the implementation and practice of quality management and the production of quality products. The Government of Kenya together with stakeholders has already instituted a national quality award where quality criteria are set for industries.

These criteria seems to benefit Large industries especially those who are ISO certified and give a low deal to small and medium manufacturing industries. This paper has presented the results of a survey conducted in Kenyan small and medium manufacturing industries, with the prime purpose of investigating the status and level of quality management practices in these industries. From the results presented and discussed, the level of quality management practices implementation among these industries has been far below expectations. Although some of these results may not be directly comparable, they have undoubtedly provided some indications on the extent of achievements Kenyan SMMs in their journey towards business excellence.

### 6 DIRECTION FOR FUTURE RESEARCH AND LIMITATIONS

Future research should focus on evaluating quality management practices in specific industrial sectors. Further studies should be carried out to compare the degree of performance of quality practices in regard to relationships they possess. Also in future, this study could be developed to test the effect of quality management practices on organizational performance (financial and non-financial measurement), where the operational performance variables could be used as moderating variable.

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**Table 1: Overall Results of Factors**

Factor	Description	Mean	Rank
F1	Top management support	4.71	1
F2	Organisation for quality	4.13	2
F4	Employee participation	3.97	3
F6	Quality system improvement	3.88	4
F7	Information and analysis	3.85	5
F9	Continuous support	3.65	6
F5	Customer focus	2.90	7
F3	Employee training	2.49	8
F8	Supplier quality management	2.19	9
F10	Statistical quality technique use	1.92	10

**Table 2: Perception on Importance of Factors among Medium and Small industries**

Factor	Description	Company Size		Mean Difference
		Medium (Mean)	Small (Mean)	
F1	Top management support	4.88	4.63	0.25
F2	Organisation for quality	4.47	3.96	0.51
F3	Employee training	2.87	2.31	0.56 NS
F4	Employee participation	4.06	3.93	0.13
F5	Customer focus	3.21	2.76	0.45 NS
F6	Quality system improvement	4.08	3.79	0.29
F7	Information and analysis	4.15	3.69	0.46
F8	Supplier quality management	2.69	1.96	0.73 NS
F9	Continuous support	4.00	3.48	0.52
F10	Statistical quality technique use	2.51	1.61	0.90 NS

NS: Non Significant. At least one of the means is less than cut-off of 3.00

**Table 3: Comparison of Mean Importance of Food Processing versus Plastic Transforming Industries**

Factor	Description	Company Size		Mean Difference
		Food (Mean)	Plastic(Mean)	
F1	Top management support	4.66	4.75	-0.09
F2	Organisation for quality	4.16	4.10	0.06
F3	Employee training	2.72	2.31	0.41 NS
F4	Employee participation	4.10	3.87	0.23
F5	Customer focus	3.10	2.75	0.35 NS
F6	Quality system improvement	3.97	3.82	0.15
F7	Information and analysis	3.97	3.76	0.21
F8	Supplier quality management	2.16	2.21	-0.05 NS
F9	Continuous support	3.75	3.57	0.27
F10	Statistical quality technique use	2.03	1.83	0.20 NS

NS: Non Significant. At least one of the means is less than cut-off of 3.00