

**STRATEGIC QUALITY MANAGEMENT IMPLEMENTATION PRACTICES BY
HORTICULTURAL INDUSTRY IN KENYA: THE CASE OF POLLEN LTD**

BY

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award of a degree of Master of Business and Administration (MBA) School of Business,
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DECLARATION

This research project is my original work and has not been submitted for a degree in this or any other University for examination.

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This research project report has been submitted with my approval as University supervisor.

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Zipporah Kiruthu

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List of Abbreviations

QMS=Quality Management System

QM=Quality Management

SQM=Strategic Quality Management

NAKT= Nederlandse Algemene Kwaliteitsdienst Tuinbouw

GSPP=Good Seed Plant Practices

ISO=International Organization for Standardization

UON=University of Nairobi

TQM=Total Quality Management

EFQM= European Foundation for Quality Management

UK=United Kingdom

SME= Small and Medium Enterprises

SPSS=Statistical Package for Social Sciences

HCDA= Horticulture Development Authority

KWS=Kenya Wildlife Services

B.O.G=Board of Governors

Abstract

The horticulture sector has become one of the biggest foreign exchange earners for the Kenyan economy and provides numerous Kenyans with much needed employment and income. However consumer demands on quality aspects and production methods are getting more stringent every day. To remain competitive in the global market will require horticultural industry in Kenya to embrace total quality in all its operations. Appreciation and understanding of the strategic quality management principles is pertinent towards understanding quality management of the horticultural industry. Most of the literature nevertheless, has touched on strategic quality management principles and QMS in the Kenyan context narrowly. The objectives of the study was to find out the extent of Quality Management System implementation and the SQM principles practiced in the horticultural industry in Kenya as well as ascertain the benefits and challenges faced when implementing QMS. Pollen Ltd was used as a case study using descriptive research design. The findings will be used by the stakeholders in the horticultural industry for managerial purposes and to improve on strategic quality management in the farms. It will also add into the existing literature on quality management and form base for further research. The targeted population was fifty three respondents of Pollen Ltd comprising of managers and supervisors. Data was collected from both primary and secondary sources. The results showed that Pollen Ltd to a very great extent applies QMS which is valid to its purpose and SQM principles to a very great extent. Respondents cited customer satisfaction as the major benefit and a lot of documentation as the top most challenge in implementing QMS. The study recommended further research on the effects of quality management on the employees' performance in the horticultural industry in Kenya. Further research should also be done on the influence of QMS on the performance of horticultural industry in Kenya

CHAPTER ONE: INTRODUCTION

1.1: Background

1.1.1: The Role of Horticulture in the Kenyan Economy

Horticulture is an important subsector of Kenyan agriculture, the mainstay of the country's economy in achieving food security, income and employment generation, foreign exchange earnings, raw material for agro-processing, and poverty alleviation. The subsector directly and indirectly employs over six million Kenyans. Kenya is a major exporter of horticultural produce mainly to the EU. In 2009, Kenya exported 350,474,113 kg of horticulture produce valued at KES 71.6 billion. The main horticultural enterprises being flowers, vegetables, fruits, nuts and medicinal and aromatic plants (National Horticulture Policy, 2009).

Market demands on particular quality specifications, arising out of increased consumer awareness, plays a role in determining quality for producers targeting those markets. Competition among farms in meeting these specifications is thus getting stiff and becoming global. It is imperative therefore for the horticultural farms to embrace total quality for them to remain competitive (National Horticulture Policy, 2009).

1.1.2: Defining Quality and Strategy

Aktu(2003) defines quality as: "Conformance to a set of customer requirements that if met, results in a product or service that is fit for its intended use". Wieleetal., (2003) presents a slightly different perspective with emphasis on the artistic and energetic properties of quality: "Quality is what surprises and delights the customer". Pycraft etal., (2000) and Stamatis (2000) try to reconcile some of these different views in their definition of quality: "Quality is consistent conformance to customers' expectations". With reference to Pycraft and Stamatis's definition of

quality, the use of the word 'conformance' implies that there is a need to meet a clear specification. Dervitsiotis (2003) takes a more systematic approach to quality and specifically the customer with the following definition: "Quality is meeting or exceeding the needs and expectations of the business stakeholders". Stakeholders are those individuals and groups with a stake in business, including customers, shareholders, employees, suppliers and communities (Dervitsiotis, 2003).

Quinn (1996) defines strategy as a pattern or plan that aligns goals, policies and actions into a cohesive whole. A good strategy enhances outcomes through marshaling of resources, unique posturing, leverage off competencies, and an awareness of environment and cognizance of intelligent opponents. Strategy is about survival in business, on the battleground, during a game or through life in general. It is about doing things differently (Mintzberg & Quinn, 1996).

Total quality calls for an organizational commitment to meeting or exceeding customer expectations (Besterfield et al., 2003). Effectively developed and executed strategy should marshal the organization's resources to a unique posture that can take advantage of internal resources (Ohmae, 2005).

1.1.3: Quality Management Theories

Deming (1986) emphasized the importance of identification and measurement of customer requirements, creation of supplier partnership, use of functional teams to identify and solve quality problems, enhancement of employee skills, participation of employees, and pursuit of continuous improvement. Juran (1950), considered quality management as three basic processes known as Juran trilogy: Quality control, quality improvement, and quality planning. Crosby (1979), identified a number of important principles and practices for a successful quality

improvement program, which include, management participation, management responsibility for quality, employee recognition, education, reduction of the cost of quality, emphasis on prevention rather than inspection, doing things right the first time, and zero defects.

Feigenbaum (1991), claimed that effective quality management consists of four main stages, described as follows: Setting quality standards, appraising conformance to these standards, acting when standards are not met, planning for improvement in these standards. Ishikawa (1985) argued that quality management extends beyond the product and encompasses after-sales service, the quality of management, the quality of individuals and the firm itself. He claimed that the success of a firm is highly dependent on treating quality improvement as a never-ending quest.

1.1.4: Quality Management and Strategic Quality Management

Quality management (QM) has been widely viewed as a management paradigm that enables firms to gain a competitive advantage (Yeung et al., 2006). It presents a strategic option and an integrated management philosophy for organizations, which allows them to reach their objectives effectively and efficiently, and to achieve sustainable competitive advantage (Goldberg and Cole, 2002). Organizations have not found it so easy to implement the quality management practices and to achieve the expected benefits (Kirk, 2000). Brown (2000) concluded that there are still organizations where, despite this criticism, the quality management philosophy continues to be a central focus of the business and a mechanism for contributing to better performances.

Different terms like strategic quality management, total quality improvement, and total quality leadership are actually examples showing the different emphasis placed on particular aspects of what is generally called quality management. Strategic quality management is defined as a

systematic approach for setting and meeting quality goals throughout the company. Total quality management is part of strategic quality management (Sangeeta and Banwe, 2004).

1.1.5: Total Quality Management Philosophy

Djerdjour and Patel (2000), define TQM as a management philosophy which seeks continuous improvement in the quality of all processes, people, products and services of an institution.

Continuous improvement can be achieved through internal and external quality improvements.

Pun (2002), defines TQM as an integrated management philosophy and set of practices that emphasize continuous improvement, meeting customers' requirements, reducing rework, long range thinking, increased employees involvement and team work, process redesign, competitive benchmarking, team based problem solving, constant measurement of results and closer relationship with suppliers.

According to Motwani (2001), the philosophy of TQM could be visualized as constructing a house with top management commitment being the foundation or base. On top of a solid foundation, four pillars are constructed that include process management, quality measurement and control, employee training, and customer focus. Prajogo and Sohal (2003) investigated the relationship between TQM and organizational performance by exploring six TQM practices.

These practices are divided into two groups: mechanistic elements and organic elements.

Mechanistic elements include customer focus, process management, strategic planning, information and analysis, while the organic elements are leadership and people management.

The mechanistic elements (customer focus, process management, and so forth) could be considered the hard aspect and the organic elements (that is, leadership and people management) represent the soft aspect. Youngless (2000), argued that rather than trying to inspect the quality

of products and services after they have been completed, TQM instills a philosophy of doing the job correctly the first time.

1.1. Context of the Study: Pollen Ltd Kenya.

The study was based in Pollen limited one of the horticultural farms in Kenya situated in Ruiru, thirty kilometers (30 km) North of Nairobi, Kenya. The total workforce ranges between five hundred (500) and eight hundred (800) depending on the seasons and fifty three management staffs. Pollen Ltd produces cuttings and hybrid seed for 100% export. Pollen Ltd is preferred because of several reasons which make the farm a good case to study on quality management practices in the horticultural Industry in Kenya. First, the company subscribes to three international certification bodies (NAKT, GSPP, and ISO) which are demanded by the customers. Certification is based on reference materials such as codes of practice, standards and check lists. The flower department is NAKT (Nederlandse Algemene Kwaliteitsdienst Tuinbouw - Netherlands Inspection services for Horticulture) accredited and has a quality management system in place. NAKT promotes and monitors the quality of produce, processes and chains in horticulture. The main focus is on propagating material, of national and international origin.

Seed department is GSPP (Good Seed Plant Practices) accredited which requires clear organizational structure and supporting quality management, defined procedures, protocols and working methods, quality manager, personnel qualifications and training, systematic risk analysis in order to identify risks and associated control measures, internal audit, corrective actions, procedures and management review, product traceability, customer relationship, technical requirements. The requirements are derived from ISO 9001:2008 standard.

Secondly, Pollen produces more than one product with different assortments for export. The flower side produces rooted and un-rooted cuttings and seed department produces hybrid tomato seeds. Cuttings and seeds produced are for 100% export to the European markets.

1.2: Research Problem.

Owing to stiff competition in the horticultural industry and with stringent quality demands from customers, quality is seen more than ever as the key differentiator in the global market.

Horticultural farms are now required to subscribe to quality standards which are demanded by customers for their products to remain competitive in the market. One question relates to whether the horticultural industry implements quality management system and what are the strategic quality management practices being practiced in the horticultural farms? Most of past literature on this subject in the Kenyan context has touched on factors influencing QMS narrowly and on strategic quality management principles. As a result, most of the factors that account for not establishing the system have not been clearly understood. According to Julian et al., (2001), quality management system provides guidance on how to set the procedures that will guide in the production of the quality products. Appreciation and understanding of the quality management system in the horticultural industry and the extent of implementation is pertinent in quality management of the farm and delivery of quality products. Most of the quality management studies have been done in developed countries and few have been done in developing countries especially in Kenya. Existing literature indicates that several research studies have been carried out in the areas of quality Management.

A study of the Turkish large scale firms in determining the principles affecting perceptions of strategic management implementation explains the differences between SQM implementing and

not implementing firms according to their perceptions of SQM implementation (Temur et al., 2009).

An empirical study of TQM practices in Japanese-owned manufacturers in China showed that TQM practices influence overall company performance significantly in Japanese-owned manufacturers. The research found that most of Japanese-owned manufacturers in China have implemented quality management and that TQM practices have contributed to their operations (Masahiro and Yoshida, 2004).

Ngware et al., (2006), examined the extent of total quality management use in secondary schools in Kenya. From the study majority of schools are not committed to strategic quality planning, though they do promote human resource development initiatives. Magutu et al., (2010), studied TQM practices application at the University of Nairobi. The results showed that the University of Nairobi to a very great extent has ensured that quality management policy is appropriate to its purpose; and it provides the framework for establishing and reviewing quality objectives.

A study on the role of quality in growth of small and medium enterprises in Kenya (Gakure et al., 2010), noted that there existed reluctance among SMEs in Kenya to adopt quality. Further, research on effects of total quality management implementation on business performance at Kenya Wildlife Services (KWS) revealed that, KWS is customer oriented and that it practices TQM to a very large extent (Karani & Bichanga, 2012).

Recent study on “Total quality and competitive advantage of firms in the horticultural industry in Kenya” revealed several insights about the horticultural industry in Kenya (Awino et al., 2012).

The study showed that horticultural sector has not viewed that customer is the reason for an

organization's existence. In the study, the major challenge that the respondents cited in total quality management implementation was high financial costs and treating certification as an end. He further cited that horticultural industry in Kenya is learning to implement total quality management. Leadership among the total quality management principles studied scored poorly despite being the basis of total quality management.

None of these studies have explored the strategic quality management practices in horticulture industry as a case study and the extent of implementing quality management system. Different horticultural farms have different strategies and subscribes to different standards and different levels of QMS implementation. Strategic quality management is very specific to the farm and this study was seeking to answer the following three research questions;

What is the extent of implementing quality management system in Pollen Ltd?

What are the strategic quality management principles at Pollen Ltd?

What are the benefits and challenges of implementing quality management system at Pollen Ltd?

1.3: Objectives of the Study

- i. To find out the extent of quality management system implementation at Pollen Ltd.
- ii. To establish strategic quality management practices at Pollen Ltd.
- iii. To find out the benefits and challenges of implementing quality management System at Pollen Ltd.

1.4: Value of the study

It is expected that the study will be useful to horticultural farms in Kenya to improve in strategic quality management practices and to understand the barriers and benefits in implementing SQM.

The findings will be used by the stakeholders in the horticultural industry for managerial purposes and to improve on strategic quality management. Through the insights that will be revealed in this study, horticultural farms will broaden their knowledge on their weaknesses and strengths in terms of quality management which will enhance their competitiveness.

The finding of the study will add in the existing literature on strategic quality management in academic institutions. Furthermore, the findings of the research will enable the academicians in broadening of syllabus with respect to quality management in the organizations.

Future research will be based on the issues that will be raised. Other researchers will derive their research gaps from this study and form bases of other studies.

CHAPTER TWO: LITERATURE REVIEW

2.1: Introduction

The chapter provides information from studies in areas related to the research problem. In this section strategic quality management principles will be discussed and their effects on performance of the organization. The chapter will also examine what various scholars and authors have said about the concept of strategic quality management practices and quality management systems. Moreover studies of quality management systems in Kenyan industries and the recent study on the horticultural industry in Kenya will be covered.

2.2: Strategic Quality Management Principles

Strategic quality management factors, as they have been detected in recent studies are: leadership, strategic quality planning, employee management and involvement, supplier management, customer focus, process management, continuous improvement, information and analysis and knowledge and education. Factors such as top management commitment and leadership, people management, policy and strategy, partnership and resources management and management of processes, are generally considered as the initial inputs to the implementation of total quality management. European Foundation for Quality Management (1999), called these factors enablers.

Leadership and Top Management Commitment: The increased awareness of senior executives, who have recognized that quality is an important strategic issue, is reflected as an important focus for all levels of the organization (Oakland, 2000). This requires defining and implementing several quality factors which include top management commitment and involvement, employee empowerment and culture. These factors are known by some writers as the soft aspects of

management, while the hard aspects include factors such as improvement tools and techniques and systems (Oakland, 2000). Promoting organizational commitment is achieved as a result of top management commitment.

Quality Policy and Strategy: The integration of quality in the strategy of the organization represents the establishment of a quality mission, the development of a quality policy and the implementation of quality goals in the organization. The aim of these activities is to make the quality aspect an integral part of the overall strategy of the organization. The strategic function of quality represents the awareness of quality as an aspect that is of strategic importance to the organization, and the influence of customer satisfaction on the strategic position of the organization in its environment (Calingo, 1996).

Strategic Planning Management: Curkovic et al., (2000) in his study show that there is indeed a strong relationship between strategic planning in TQM with environmentally responsible manufacturing. Feng et al., (2006) in his comparative study found that there is significant impact on strategic planning in TQM practice with organizational performance.

Employee Management: The revised (April 1999) EFQM model of excellence emphasizes on the consideration of culture and employee motivation in terms of delivering organizational outcomes. Middle management have a particular role to play, since they must not only grasp the principles of strategic quality management but they must go on to explain them to the people for whom they are responsible, and ensure that their commitment is communicated (Oakland, 2000).

Training and Education: Training underpins quality management and determines the effectiveness of the quality initiatives undertaken. Deros et al., (2006) noted that human resource

development is one of the critical success factors in benchmarking practice which will drive in improving business and management process.

Rewards and Recognition: According to Oakland (2000), total quality is user-driven. Kemp et al., (1997) consider the recognition procedure as basic to increasing the involvement of all employees in the operation of the business.

Teamwork: One of the most publicized aspects of the Japanese approach to quality has been the quality circles or kaizen teams'. Reviewing the literature reveals that teamwork is a critical factor in quality management (Oakland, 2000).

Communication: Effective communication for quality is important for the success of any quality initiative and is critical from the beginning of a change effort. Every element of the change must be talked about, presented and discussed, across levels of the organization (Rao et al., 1996)

Supplier Management: Supplier quality management is an important aspect of strategic quality management since materials and purchased parts are often a major source of quality problems. Many authors advocate that companies must establish supply chain partnerships to motivate suppliers to provide materials needed to meet customer expectations. Effective supplier quality management is facilitated by a corporative relationship with suppliers (Thiagarajan et al., 2001).

Organizational Structure: One of the responsibilities of senior management at the early stage of initiating strategic quality management program is the set-up of a quality organizational structure. Such structure is needed to create a framework, which will enable quality improvement to develop and flourish (Oakland, 2000).

Customer Satisfaction: Nilsson et al., (2001) indicate that customer satisfactions have a greater impact on business results through quality practices. This was supported by Lee et al., (2003) argument that customer satisfaction positively related to process improvement.

Quality Assurance: Lin et al., (2005) noted that quality assurance is significantly related with supplier selection strategy where it could improve the management supply chain networks performance.

2.2: Leadership, Customer Satisfaction and TQM

An empirical study on “Top management leadership, employee empowerment, job satisfaction and customer satisfaction” found that there exist a relationship between top management leadership, employee empowerment (i.e. delegation of decision-making authority) and employee job satisfaction. The study also found that employee involvement or participation in TQM is facilitated by employee satisfaction with communication at lower levels, availability of job requirement information, enhanced promotion and development opportunities and availability of information about the organization’s values, vision and strategies. There is an ongoing debate about merit of TQM because not every organization has realized the associated benefits .This may not be due to the failure of TQM as a management philosophy but to its half-hearted implementation (Ugboro and Obeng, 2000).

The study revealed that some organizations are willing to implement only those aspects of TQM supported by the existing organizational culture and are not willing to undertake the total cultural transformation that TQM requires. The study noted that most employees did not feel that they had been given sufficient authority to reject or accept the quality of their own work. Secondly, most did not agree that they were involved in the definition of the organization’s total quality

mission and objectives. These views if widely held can undermine the effectiveness of TQM efforts in these organizations. The fact that an organization claims to have a TQM program does not necessarily mean that TQM is fully and well implemented(Ugboro and Obeng, 2000).

2.3: Extent of Practicing TQM

Investigation was done on the extent to which secondary schools practiced aspects of total quality management. A sample of 300 teachers in a residential session during a school holiday provided their perceptions on the practice of TQM in their schools. Data were collected using a questionnaire. It revealed that Board of Governors and chairpersons in secondary schools are not providing the necessary leadership that would promote TQM practices necessary for schools' continuous improvement. However, some head teachers are providing the required leadership with a considerable number of school managements empowering their employees. The majority of schools are not committed to strategic quality planning, though they do promote human resource development initiatives. School management is expected to provide leadership that promotes TQM practices in order to achieve set objectives. Empowered employees participate in decision-making and are capable of increasing the quality of learning. Strategic quality planning is important for the provision of quality services while human resource development is necessary in schools to motivate and realize the maximum potential from employees (Ngware et al., 2006).

A research on “The Quality Management Practices in Kenyan Educational Institutions: The Case of the University of Nairobi” revealed several insights based on the three specific objectives of the study. The University of Nairobi to a very great extent has ensured that the Quality Management Policy is appropriate to its purpose; and it provides the framework for establishing and reviewing quality objectives. The institution has defined its processes to ensure its

academic/educational products meet the Commission of Higher Education regulatory requirements; it has implemented actions necessary to achieve planned results and continual improvement of their educational processes; and lastly communicated the importance of meeting customer as well as statutory and regulatory requirements. And to some great extent defined its processes to ensure its academic/educational products meet customer requirements. University of Nairobi has to a very great extent established quality objectives including those needed to meet requirements for product at each (relevant) function and level; documented its objectives including those requirements needed for products with measurable quality objectives; and lastly the QMS planning is performed to meet the quality objectives and requirements. A proper documentation of every process aspect of an entity is very important. This is because it acts as a center of reference and corrections can be easily made in case of any diversion from norms (Magutu et al., 2010).

The University of Nairobi has to a very great extent made use of a quality manual which is well documented. The University has ensured the effective planning, operation and control of its processes and lastly documented all the procedures required by these international standards. In addition the University to a very great extent takes a corrective action to ensure conformity of the product, when planned results are not achieved; measures and monitors processes to demonstrate the processes ability to achieve planned results; it also conducts internal audits at planned intervals to determine whether the QMS conforms to the requirements of the ISO 9001:2000.

The university of Nairobi has to a very great extent faced with following major challenges in the implementation of its quality management system: failure to define the TQM Challenge in University of Nairobi Academic function; the impact and validity of distance learning; and lastly there is poor utilization of faculty (Magutuet al.,2010).

2.4: Effects of TQM on Business Performance

An empirical study of TQM practices in Japanese-owned manufacturers in China was carried out. In this study, 200 companies out of the 1000 were chosen by random sampling .A total of 52 usable questionnaires were received and the overall response rate was 26 percent. The survey results showed that TQM practices influence overall company performance significantly in Japanese-owned manufacturers in China. This implied that TQM is an effective method to improve business performance regardless of where the company might be operating as long as the TQM practices are implemented appropriately, (Masahiro and Yoshida, 2004).

The research found that most of Japanese-owned manufacturers in China have implemented quality management and that TQM practices have contributed to their operations. The study concluded that: TQM practices of employee involvement and customer's satisfaction in Japanese-owned manufacturers in China significantly related to internal performance such as cost reduction and increasing profit. Secondly, the strategy related to external performance such as increasing market share and competitiveness. Thirdly, both quality information and process control related to external performance such as reducing rework, warranty cost and scrap (Masahiro and Yoshida, 2004).

A study on “Effects of Total Quality Management implementation on Business performance in service institutions” the case of Kenya Wildlife revealed that KWS practice TQM to a great extent .Customer focus was found to be a driving factor that influences the need to adopt TQM this cannot be achieved without the participation of the entire employees. The findings on customer focus in TQM implementation implies that KWS are customer oriented and that it practices TQM to a very large extent. From the findings, it is revealed that employee

involvement in the implementation of TQM is a major factor that most firms should put in to consideration since they are the determinants for failure or success of an organization. The findings also revealed that KWS practice five TQM tools to a great extent. This implies that KWS has made use of quality tools to a great extent. The study finding revealed that KWS practices continual improvement through continual improvement policy, performance appraisal schemes, and research schemes for innovative solution and improvement programs. This clearly shows that continual improvement is highly being practiced in the organization (Karani&Bichanga, 2012)

From the findings, KWS selects its suppliers based on quality, thus it can be concluded that KWS practices supplier quality management as required by quality management system. The study findings revealed that TQM on customer satisfaction is practiced to a moderate extent with a mean representation of 3. KWS establishes and understand current and future customer needs to a moderate extent, it also balance the needs and expectations of all interested parties to a moderate extent, measures customer satisfaction and rectifies where necessary to a moderate extent and respond to customer complains to a moderate extent (Karani&Bichanga, 2012).

2.5: Total Quality and Competitive Advantage of Firms

A study on “Total Quality Management (TQM) and Sustainable Competitive Advantage at Fisher &Paykel Appliances Ltd's Dunedin plant” revealed that, competitive advantage lies in the innovative capacity, and that it is their core values. The study was an exploratory case study using primary data from interviews with the plant quality facilitator and HR Manager, and

additional data from secondary sources. The study also examined the stronger sustainability of competitive advantage from resource combinations.

The study finds that Fisher & Paykel's core competence is its ability to design, manufacture, and get to market, innovative, stylish, and superior quality products more quickly than competitors, and support the products with care and integrity inspired quality service. It is the F&P way – their TQM system and culture – that facilitates this core competence, and consequently, appears to generate sustainable competitive advantage.

The holistic quality system (the F&P Way), strategic quality management planning, process control and management, and care in the team environment are identified as core combinations that appear to support Fisher & Paykel's sustainable competitive advantage (Elliott, 2004).

2.6: Role of Quality in Growth of Business in Kenya

While investigating the role of quality in growth of SMEs in Kenya the authors of the study observed that today's business environment, small and medium enterprises (SMEs) cannot afford to ignore the strategic implications of quality for its competitive position. They further observed that most SMEs lose between 5%-15% of sales revenue as a result of the lack of attention to quality. The results of the study showed that; majority (72%) of the manufacturing SMEs had adopted quality or are implementing quality initiatives; forty five (45%) percent of the SMEs adopting quality are in the agro- based sub sector. Overall, the SMEs level of quality initiative's implementation is below average (mean = 3.49). The results, however noted that there existed reluctance among SMEs in Kenya to adopt quality relationship with quality. The study recommends that SMEs must know what quality management is and what comprises quality management if they are to implement them in their firms (Mokamba et al., 2010).

2.7: Factors Affecting SQM Implementation:

A study of the Turkish Large Scale Firms “Determining the Principles Affecting Perceptions of Strategic Management Implementation” explains the differences between SQM implementing and not implementing firms according to their perceptions of SQM implementation. The results support that, firms practicing SQM consider the principles of ‘process improvement’, ‘assessment of competitiveness’ and ‘strategic integration’ more significant .On the other hand, importance put on the principle of ‘customer satisfaction’ does not provide any difference between implementers and not implementers of SQM. The reason for this is probably that customer satisfaction is considered as a very important principle for all of the firms. The results of analyses also indicate that ‘process improvement’ has the highest impact on distinguishing the firms according to SQM implementation perceptions. Studying the reasons of this perceptual error and finding out their root causes may be one way of raising awareness for implementing SQM in the Turkish firms. Another way to provide insight may be researching how implementing the mostly used SQM principles would help companies improve their performance and indicate how successful they are (Temur et al., 2009).

2.8: Study on Kenya’s Horticultural Industry

A study on “Total quality and Competitive Advantage of firms in the horticultural industry in Kenya “revealed some insights about the industry. The population of the study consisted of all companies registered with the Horticulture Development Authority (HCDA) as of 30th June 2010 as exporters of horticulture and designated as - active companies. This study focused on the effect of total quality on Kenya’s horticultural industry and the aspects of total quality and competitive advantage. The study aimed at understanding the exact effect of total quality on an organization’s competitive advantage. In particular, the study aimed at establishing whether there

were significant relationships between implementation of total quality and competitive advantage in the various firms in the horticultural industry in Kenya (Awino et al., 2012). Among the key findings of the study was a confirmation that total quality has a strong and positive impact on competitive advantage. In the Kenyan context, it was discovered that the level of implementation of total quality is low. However, those implementing total quality are deriving benefits similar to those in developed countries.

It was demonstrated that most of the certified companies do not understand the philosophy behind quality management and, therefore, cannot implement it effectively. The research, finally, recommended the appreciation and understanding of the total quality philosophy or any quality management system before embarking on implementation.

2.9: Knowledge Gap

There is no case study that has been carried out on strategic quality management practices in the horticultural farms in Kenya and the level of quality management system implementation in the horticultural industry in Kenya.

Most of past literature on this subject in the Kenyan context has touched on factors influence of QMS narrowly and as a result, most of the factors that account for not establishing the system have not been clearly understood.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1: Introduction

This chapter covers the research design and describes the population of the study. Data collection method is explained and the instrument of data collection. The chapter also covers the type of data collected and how the respondents were to complete the instrument. Finally data analysis in line with the objectives of the study is described.

3.2: Research Design

Descriptive research design using the case study of Pollen Ltd was employed. Kombo and Tromp (2006), recommended the use of this design when investigating peoples' attitudes and views as they are, without manipulating the variables. In addition Mugenda and Mugenda (2003) assert that descriptive survey design helps a researcher to gather, summarize, present and interpret information for the purpose of clarification. Kathori (2004) says that "Case study is a form of qualitative analysis where a careful and complete observation of individual or situation or an institution is done. Efforts are made to study each and every aspect of concerned unit in minute details and from cases data generalization and inferences can be drawn. A case study allows researchers to understand the nature and complexity of process that is taking place and answer the 'how' and 'why' questions (Mugenda and Mugenda, 2003).

3.3: Population of the Study

The targeted population included senior managers, middle managers and supervisors (Management representatives) that constituted Pollen Ltd management team as of July 2013 and designated as permanent employees. The total number was fifty three and as such the census approach to the research was applied. Kombo and Tromp (2006) assert that the use of this

technique lies in selecting information rich respondents for in-depth analysis of the issues being discussed.

3.4: Data Collection

Data was collected from both primary and secondary sources. Primary data was collected through administration of a structured questionnaire while secondary data was collected from official documents, files, procedures, protocols, memos, observations, audit schedules and reports. The Self-administered questionnaire had three sections; Section one was general information about the respondents, in section two the respondents were asked to indicate the extent of their agreement or disagreement, and satisfaction or dissatisfaction with statements along a five-point Likert scale. In section three the respondents were asked to list out on importance basis out of ten the benefits they have experienced when they implemented quality management systems. Further, they were asked to state the main challenges, again on an importance level basis that they thought were the main causes of not effectively implementing quality management system. Pilot study was done with some management staffs at Pollen Ltd. The outcome of the pilot study was deliberated with the respondents and modifications made to the questionnaires in order to serve the purpose of the study effectively. This was to help clarify and remove questions that were ambiguous or not clear. Borg and Gall (1989) assert that content validity of an instrument is improved through expert judgment and as such the researcher sought assistance of the university supervisor to find out whether the instruments measured what they intended to measure.

3.5: Data Analysis

Responses were tabulated and analyzed using Statistical Package for Social Sciences (SPSS) application software. The responses were coded using numbers that represent the strength or degree of respondent assessment, agreement, perception or opinion as the case may be related to the question item with: Very great extent assigned (5); Great extent (4); Some extent (3) low extent (2); and Very Low extent (1).

The method of analysis used was descriptive statistics such as the means and standard deviations. Any mean score of above 3.5 was considered as high as this would be equivalent to a minimum of 70% quality management system implementation.

Data on quality management system was analyzed qualitatively using secondary data and through ranking of means to find out the extent of QMS implementation at Pollen Ltd.

On strategic quality management principles, data was analyzed through aggregate ranking of means to find out which principles were being practiced at Pollen Ltd. Individual variables on SQM practices were also analyzed through ranking of means.

On both quality management system and strategic quality management principles, standard deviation was used as a measure of variability, measuring the spread of the data set and the relationship of the mean to the rest of the data. Data points which were close to the mean, indicated that the responses were fairly uniform, hence small standard deviation. Conversely, data points which were far from the mean, indicated that there was a wide variance in the responses, hence the standard deviation was large. Where the data values were equal, then the standard deviation was zero.

On benefits and challenges, data was analyzed by ranking the mean scores out of 10 to find out the benefits and challenges faced by Pollen Ltd when implementing quality management system.

CHAPTER FOUR: DATA PRESENTATION AND INTERPRETATIONS

4.1 Introduction

This chapter presents the findings of the study, presentations of major findings and interpretations. For the purpose of demonstrating the relationship among the various variables, the data is presented in the form of tables, graphs, percentages, means and standard deviations where applicable. Statistical Package for Social Science program was used for data analysis.

4.1.1 Response Rate

The study targeted a sample size of 53 respondents from which 50 filled in and returned the questionnaires giving a response rate of 94.3%. This response rate was excellent and representative and conforms to Mugenda and Mugenda (1999) stipulation that a response rate of 50% is adequate for analysis and reporting; a rate of 60% is good and a response rate of 70% and over is excellent.

4.1.1 General Information

The analysis shows that among the respondents, 10% were at the level of top management, 60% were at the medium level management and 30% were management representative. It also shows that 56% of the respondents were from cuttings department, 34% from seed department and 10% work in both seeds and cuttings departments. In terms of the length of employment with the firm, 2% of the respondents were less than 6 months in the organization, 12% were 6 months to 1 yr in the organization, 28% were 1- 2 years, 40% were 2-5 years., 17% were 5-10 years and 3% were over 10 years in the organization.

4.2 Quality Management System Implementation

Table 1.1: Quality Management System Implementation

Item	Mean	Std. Deviation
Pollen applies quality policy in its operations.	4.9200	0.27405
There is quality manual in line with objectives	4.9200	0.34047
Quality policy is understood by all employees.	4.8800	0.32826
QMS is in place which is updated accordingly.	4.8800	0.43519
Documents are reviewed periodically & controlled.	4.5400	0.57888
Quality objectives are adhered to by all employees.	4.6800	0.76772
QMS is planned to meet the quality objectives.	4.9000	0.30305
The company conducts suppliers' evaluation per year.	4.9000	0.36422
Quality manager responsible for quality issues	4.9000	0.36422
Product Traceability procedure is in place	4.9000	0.36422
Customer complains handling procedure is in place.	4.9000	0.36422
Employees are trained periodically to improve skills.	4.8800	0.43519
The company has communication procedure.	4.5000	0.76265
Internal audit are planned and implemented.	4.9600	0.19795
Employees are aware of customers' expectations.	4.8000	0.45175
Staffs are sufficiently informed about their responsibilities	4.7600	0.47638
The audits are aimed at satisfying the customers.	4.9000	0.36422
The company has audit structure and procedure.	4.9800	0.14142
Corrective measures are taken to ensure conformity.	4.8600	0.40457

Equipment and machines are serviced and calibrated.	4.9200	0.34047
Records of training and contents are clearly documented.	4.8400	0.5095
The organization has a detailed organizational structure.	4.9600	0.19795
Succession management in place and tasks substitution.	4.9600	0.28284
Aggregate mean score	4.853913	0.393451739

The study sought to find out the extent of quality management system implementation at Pollen ltd a horticultural farm. According to the findings on the individual variables, the respondents indicated that the company has an audit structure and procedure to a very great extent as shown by a mean score of 4.9800. The respondents indicated that internal audit was planned and implemented, that the organization has a detailed organizational structure and that succession management is in place and tasks substitution planned to a very great extent. The respondents indicated that pollen Ltd applies quality policy in its operations, and that there is quality manual which is in line with objectives. Equipment and machines are serviced and calibrated to a very great extent as indicated by a mean score of 4.9200 respectively. Pollen ltd.'s QMS is planned to meet the quality objectives, the company conducts suppliers' evaluation every year, and the quality manager is responsible for quality issues. Product traceability and customer complains handling procedure is in place. Audits are aimed at satisfying the customer to a very great extent as indicated by a mean score of 4.9000 respectively. The respondents also indicated that quality policy is understood by all employees and that QMS is in place which is updated accordingly. Employees are trained periodically to improve skills to a very great extent as indicated by a mean score of 4.8800. In addition, respondents indicated that corrective measures were taken to ensure conformity. Records of training and contents are clearly documented, and that employees are

aware of customers' expectations, staffs are sufficiently informed about their responsibilities, quality objectives are adhered to by all employees and that documents are reviewed periodically and controlled. The company has a communication procedure to a very great extent. On the aggregate mean score of all the variables tested, it was revealed that Pollen Ltd has a quality management system which is implemented to a very great extent as shown by the mean of 4.853913.

4.3 Strategic Quality Management Practices

4.3.1 Practices Relating to Support of Human Resource Development

Table 1.2: Practices Relating to Support of Human Resource Development

Item	Mean	Std. Deviation
Extent to which quality related training is given to employees	4.5400	0.64555
Extent to which training in the basic statistical techniques is provided	4.7800	0.46467
Availability of resource for employee training in the company	4.7000	0.54398
Extent to which employee involvement programs are implemented	4.6000	0.67006
Effectiveness of employee involvement	4.4600	0.76158
Extent to which nonsupervisory employees participate in quality decision	4.3600	0.77618
Extent to which employees are held responsible for output of their process	4.4600	0.81341
Extent to which quality awareness building among employees is ongoing	4.4600	0.73429
Aggregate mean score	4.5450	0.676215

With regard to the practices relating to support of human resource development, the respondents indicated on individual tested variables that training in the basic statistical techniques was provided, availability of resources for employee training in the company, employee involvement programs are implemented and that quality related training was given to employees to a very great extent as shown by a mean score of 4.7800, 4.7000, 4.6000 and 4.5400 respectively. The respondents also indicated that effectiveness of employee involvement, and holding employees responsible for output of their process was ongoing to a great extent and that there was quality awareness building among employees. The respondents also indicated that nonsupervisory employees participated in quality decision to a great extent as shown by a mean score of 4.3600.

From the results, support of human resource development as a strategic quality management principle is being practiced to a very great extent as shown by aggregate mean of 4.545

4.3.2 Practices relating to Quality Assurance

Table 1.3: Practices relating to Quality Assurance

Item	Mean	Std. Deviation
Extent to which new product is design is reviewed before production	4.2600	0.80331
Clarity of product specification	4.4800	0.61412
Clarity of product procedures	4.5600	0.61146
Extent to which processes are reviewed	4.2200	0.70826
Amount of preventive equipment maintenance	4.4400	0.67491
Amount of inspection for final quality	4.3600	0.80204

Amount of review for in process quality	4.3400	0.84781
Clarity of work process instructions given to employees	4.4400	0.7329
Aggregate mean score	4.3875	0.72435125

With regard to the practices relating to quality assurance, the respondents indicated that clarity of product procedures is done to a very large extent as shown by a mean score of 4.5600. The respondents also indicated that clarity of product specification, amount of preventive equipment maintenance, clarity of work process instructions given to employees, amount of inspection for final quality, amount of review for process quality, extent to which new product was designed and reviewed before production processes are applied to a very large extent as shown by a mean score of 4.4800, 4.4400, 4.3600, 4.3400, 4.2600 respectively.

On aggregate mean for the tested variables the result shows that Pollen Ltd practices quality assurance to a very great extent (mean of 4.387).

4.3.3 Practices relating to participation and partnership

Table 1.4: Practices relating to participation and partnership

Item	Mean	Std. Deviation
The company communicates its quality strategies to suppliers	4.5600	0.67491
The organization works closer with suppliers.	4.6400	0.56279
The company rewards and recognizes quality of work	4.6400	0.48487
The company trains and reinforces its employees.	4.5000	0.58029
Suppliers are aware of quality specifications	4.4200	0.8352

Aggregate mean score	4.5520	0.627612
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With regard to the practices relating to participation and partnership, the respondents indicated that the organization worked closely with suppliers, the company rewards and recognizes quality of work to a very great extent as indicated by a mean of 4.6400 respectively. The respondents also indicated that the company communicates its quality strategies to suppliers and the company trains and reinforces its employees to a very great extent. Furthermore suppliers are aware of quality specifications to a very great extent as indicated by a mean of 4.4200.

On aggregate score for the tested variables on participation and partnership, the results show that pollen Ltd practices the SQM principle to a very great extent (mean of 4.55).

4.3.4 Practices Relating to Customer Focus

Table 1.5: Practices Relating to Customer Focus

Item	Mean	Std. Deviation
Complaints and problems are resolved promptly and efficiently	4.000	1.277750
Customer requirements are communicated throughout the business	5.000	0.000000
Customer relationships are evaluated and improved.	4.900	0.303050
Future expectations and requirements of customer are planned for.	4.500	0.931310
Extent to which suppliers are selected based on quality rather than price	3.820	0.437530
Extent to which company relies on few dependable suppliers	4.600	0.494870
Extent to which you educate suppliers	4.700	0.462910
The company regularly measure customer satisfaction.	4.340	0.772220
Customers' requirements are used as the basis for quality	4.000	1.277750

Management support activities improving customer satisfaction	5.000	0.000000
Aggregate mean score	4.486	0.595739

The individual variables from the respondents indicated that customer requirements were communicated throughout the business (mean of 5.000), management supported activities improving customer satisfaction to a very large extent as shown by a mean score of 5.0000. The respondents also indicated that customer relationships were evaluated and improved, and that suppliers are educated to a very great extent. The company relied on few dependable suppliers, future expectations and requirements of customer were planned for, and the company regularly measured customer satisfaction to a very great extent. The respondents indicated that complaints and problems were resolved promptly and efficiently and that customers' requirements were used as the basis for quality to a great extent as indicated by a mean score of 4.0000 respectively. The respondents further indicated that suppliers were selected based on quality rather than price to a great extent as indicated by a mean score of 3.8200.

On aggregate mean score for all the variables the results shows that Pollen Ltd to a very great extent practiced customer focused as a strategic quality management principle as shown by the mean of 4.486.

4.3.5 Practices Relating to Fact Based Management

Table 1.6: Practices Relating to Fact Based Management

Item	Mean	Std. Deviation
Strategies are developed based on customers' requirements.	4.800	0.404060

The management sets objectives for all managers	5.000	0.000000
The management sets objectives for all employees	4.800	0.404060
The management communicates its strategy and objectives to staff	4.820	0.388090
The company invest in tools for diagnosing and solving quality problems	3.820	0.437530
Aggregate mean score	4.648	0.326748

According to the findings, the respondents indicated on the individual variables that the management sets objectives for all managers and that the management communicated its strategy and objectives to staff to a very large extent as indicated by a mean of 5.0000 and 4.8200 respectively. The respondents also indicated that strategies were developed based on customers' requirements and that the management sets objectives for all employees to a very large extent as indicated by a mean of 4.8000 respectively. The respondents further indicated that the company invested in tools for diagnosing and solving quality problems to a large extent as indicated by a mean of 3.8200.

The results showed that pollen ltd to a very great extent practiced fact based management as a strategic quality management.

4.3.6 Design Quality, Speed and Prevention Practices

Table 1.7: Design Quality, Speed and Prevention Practices

Item	Mean	Std. Deviation
Extent the company aims at achieving the shortest product time.	5.000	0.0000
Extent the organization plans for new production and introductions.	5.000	0.0000

The organization is designed to meet the demands of the customers.	4.800	0.4041
The organization embraces innovative application of technology.	4.800	0.4041
The organization operations aim at reducing errors/defects.	3.820	0.4375
Aggregate mean score	4.684	0.2491

The respondents indicated that the company aims at achieving the shortest product time (mean of 5.000) and the organization plans for new production and introductions to a very large extent as shown by a mean score of 5.0000. The respondents also indicated that the organization was designed to meet the demands of the customers and that the organization embraced innovative application of technology to a very great extent as shown by a mean score of 4.8000 respectively. The respondents further indicated that the organization operations aimed at reducing errors/defects to a great extent as shown by a mean score of 3.8200.

The data shows that Pollen Ltd practices design quality, speed and prevention as a strategic quality management principle to a very great extent.

4.3.7 Practices Relating to Strategy, Policy and Planning

Table 1.8: Practices Relating to Strategy, Policy and Planning

Item	Mean	Std. Deviation
Extent to which organization's values are evident in its policies and plans.	4.940	0.23990
Extent to which Quality objectives are tied to business objectives.	4.860	0.40457
Extent to which regular reviews done to assess quality objectives.	4.880	0.32826
Identification of key indicators to measure performance.	4.760	0.47638

Extent to which allocation of resources to achieve quality objectives.	4.220	0.41845
All employees contribute to the development of company's goals.	4.400	0.72843
Aggregate mean score	4.677	0.43267

With regard to practices relating to strategy, policy and planning, the respondents indicated that the organization's values were evident in its policies and plans, regular reviews were done to assess quality objectives, quality objectives were tied to business objectives and identification of key indicators to measure performance to a very great extent as shown by a mean score of 4.9400, 4.8800, 4.8600 and 4.7600 respectively. The respondents indicated that all employees contributed to the development of company's goals and extent to which allocation of resources was done to achieve quality objectives to a great extent as shown by a mean score of 4.4000 and 4.2200 respectively.

The data shows the strategic quality management principle of strategy, policy and planning is being practiced at Pollen Ltd to a very great extent (mean of 4.677).

4.3.8 Quality Information and Analysis

Table 1.9: Quality Information and Analysis

Item	Mean	Std. Deviation
Availability of data about quality defects such as error rate, defects rate	4.780	0.41845
Extent to which quality data is available on time	4.800	0.40406
Extent to which quality data is available to management	5.000	0.00000

Extent to which quality data is available to the employees	4.860	0.35051
Extent to which quality data is used in the company	4.380	0.80534
Aggregate mean score	4.764	0.39567

With regard to quality information and analysis, the respondents indicated that the quality data was available to management, quality data was available to the employees, quality data was available on time, availability of data about quality defects such as error rate, defects rate to a very great extent as shown by a mean of 5.0000, 4.8600, 4.8000 and 4.7800 respectively. The respondents also indicated that the extent to which quality data was used in the company to a great extent as shown by a mean of 4.3800.

The result shows that, quality information and analysis is being practiced at Pollen Ltd to a very great extent.

4.3.9 Practices Related to Leadership

Table 1.10: Leadership Practices

Item	Mean	Std. Deviation
Extent to which employees are supported through times of change.	4.660	0.65807
Extent to which Management promotes quality improvement efforts.	5.000	0.00000
Extent to which management participate in giving training in quality	4.580	0.49857
Degree to which Management provides enough resources to achieve quality	4.580	0.73095

Extent to which Quality Goals are communicated to all employees	4.020	0.14142
Extent of Close relationship between functions/departments.	4.860	0.45221
Management spends time on quality issues.	4.800	0.53452
Management plans for employees' training on quality.	4.880	0.32826
Aggregate mean score	4.673	0.41800

The respondents indicated the extent to which management promoted quality improvement efforts, management planned for employees' training on quality, close relationship between functions/departments, extent to which management spends time on quality issues and the extent to which employees were supported through times of change to a very great extent as shown by a mean score of 5.0000, 4.8800, 4.8600, 4.8000 and 4.6600 respectively. The respondents also indicated that the extent to which management participated in giving training in quality and the degree to which management provided enough resources to achieve quality as shown by a mean score of 4.5800 respectively. The respondents further indicated that the extent to which quality goals were communicated to all employees as shown by a mean score of 4.0200.

On aggregate mean score the data shows that Pollen Ltd practices leadership as a strategic quality management principle to a very great extent (mean of 4.673).

4.3.10 Practices Relating to Continuous Improvements

Table 1.11: Practices Relating to Continuous Improvements

Item	Mean	Std. Deviation
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Embraces continuous improvement of its products and processes	3.920	0.66517
We encourage a culture of innovation within the company.	5.000	0.00000
We focus on prevention of problems before they happen.	4.860	0.35051
We have a framework for process management and improvement.	4.860	0.35051
All our processes are continuously improved.	4.020	0.14142
Suppliers work closely with the company to improve processes.	4.740	0.44309
Areas of improvements are identified in the organization.	4.300	0.46291
There is Process improvement department in place	4.740	0.44309
Aggregate mean score	4.555	0.35709

From the findings, the respondents indicated that they encourage a culture of innovation within the company to a very great extent as shown by a mean score of 5.0000. The respondents indicated that they focused on prevention of problems before they happen and that they had a framework for process management and improvement to a very great extent as shown by a mean score of 4.8600 respectively. They also indicated that suppliers worked closely with the company to improve processes and that there was process improvement department in place as shown by a mean score of 4.7400 respectively. They further indicated that areas of improvements were identified in the organization, that all the processes were continuously improved and that the organization embraces continuous improvement of its products and processes to a great extent as shown by a mean score of 4.3000, 4.0200 and 3.9200 respectively.

The result shows that Pollen Ltd practices continuous improvement as a strategic quality management to a very great extent (mean of 4.555).

4.3.11: Aggregate Scores for SQM Principles

Graph 1.1: Summary of SQM Principles

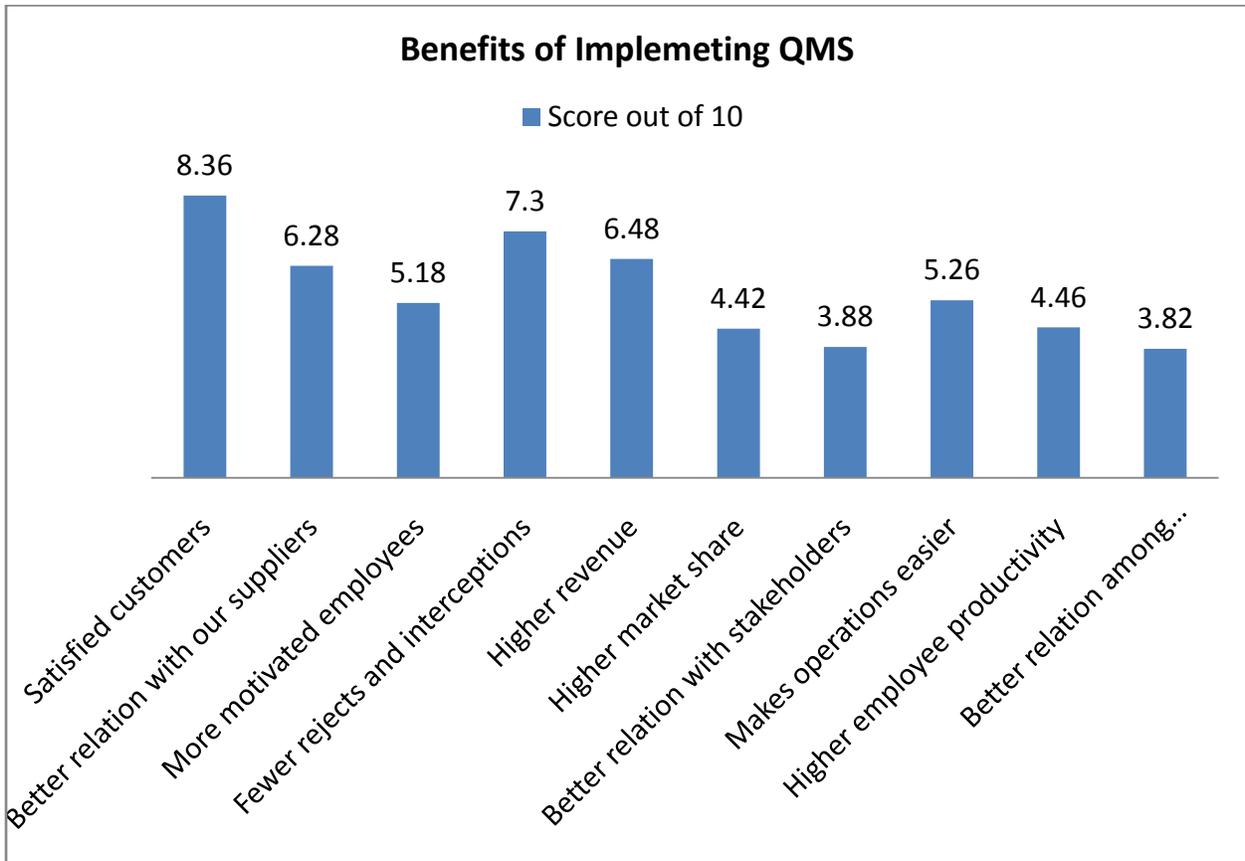


The graph shows the strategic quality management principles as practiced at Pollen Ltd. Quality and information analysis is one of the strategic quality management principles which is being practiced to a very great extent as shown by the mean 4.764 followed by practices relating to leadership. All the principles being tested are being practiced to a very great extent at Pollen Ltd.

4.4 Benefits and Challenges of Implementing Quality Management System

4.4.1 Benefits of implementing quality management system (QMS)

Graph 1.12: Benefits of implementing quality management system (QMS)

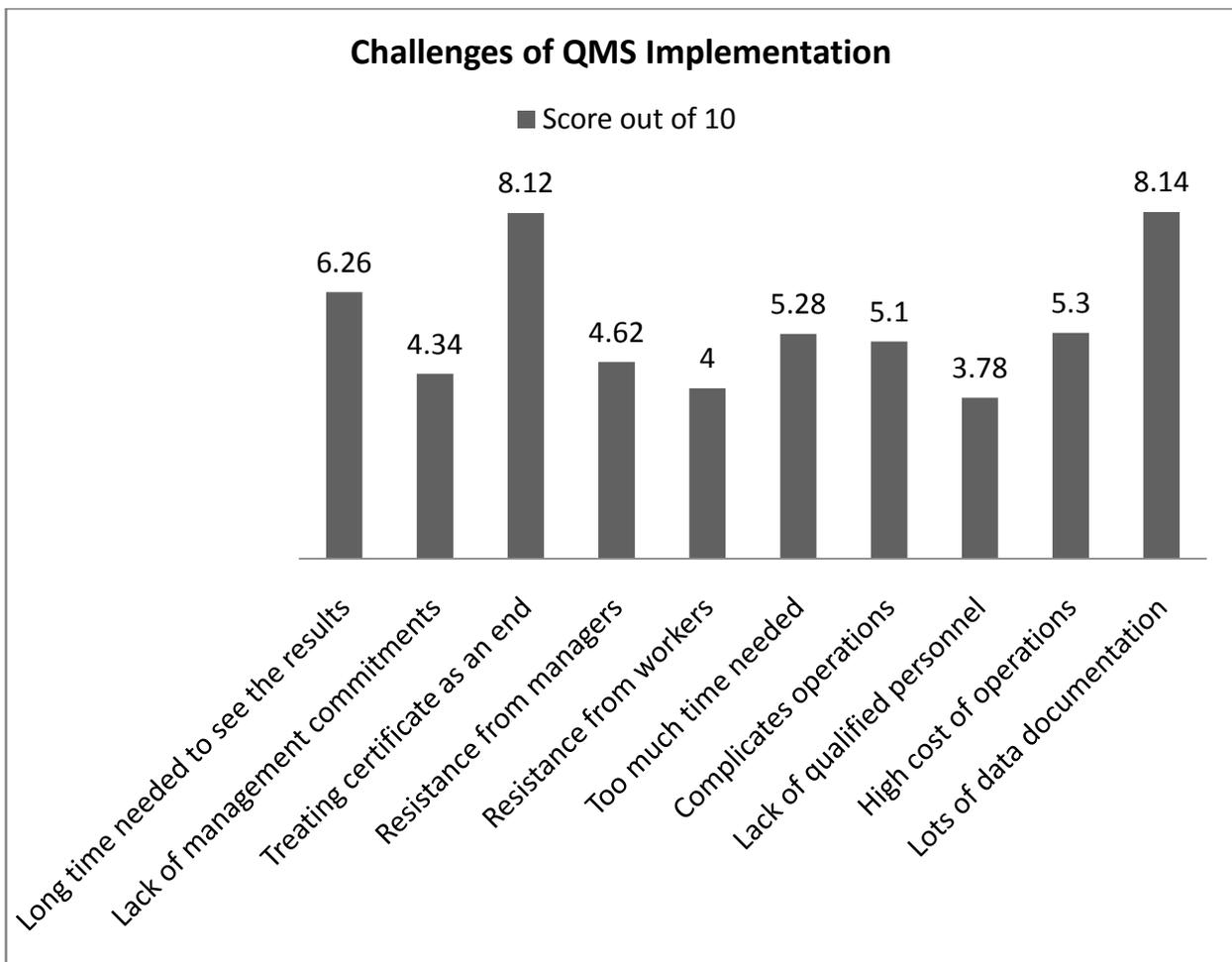


Among the benefits being tested, satisfied customers scored the most (8.36 out of 10) followed by fewer rejects and interceptions (0.73 out of 10). Most of the respondents perceived them as the most important benefits they get when implementing QMS in the company. Better relation among employees (0.382 out of 10) and better relation with stakeholders (0.388 out of 10) scored poorly. Respondents perceived them as the least important benefits they get when they implement QMS at Pollen Ltd. Benefits that scored 50% and above included; Satisfied customers,

fewer rejects and interceptions, higher revenue, better relation with suppliers, makes operations easier and more motivated employees. Benefits that scored less than 50% included: Better relation among employees, better relation with stakeholders, higher market share and higher employee productivity.

4.4.2 Challenges of implementing QMS

Graph 1.13: Challenges of implementing QMS



From the findings, the respondents indicated; lots of data documentation, treating certification as an end, long time needed to see results, high cost of operations, too much time needed,

complicates operations, resistance from managers, lack of management commitments, and resistance from workers and lack of qualified personnel as some of the challenges of implementing QMS in order of importance as shown by the score of 8.140,8.120, 6.260, 5.300, 5.280, 5.100, 4.620,4.340,4.00 and 3.780 respectively. Lots of data documentation scored the highest (8.14) .Treating certification as an end scored 8.120 in terms of challenges faced by Pollen Ltd while implementing QMS. This challenge had been identified in the previous studies as the most challenging while implementing QMS in the horticultural industry in Kenya (Awino et al., 2012).

CHAPTER FIVE: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presented the discussion of key data findings, discussion of the findings, conclusion drawn from the findings highlighted and recommendation made there-to. The conclusions and recommendations drawn were focused on addressing the objectives of this study which was to find out the extent of quality management system implementation at pollen Ltd; establish strategic quality management practices at Pollen ltd and find out the benefits and challenges of implementing quality management System at Pollen ltd.

5.2 Summary and Discussion of Findings

5.2.1 Response rate

The response rate was 94% which according to Mugenda and Mugenda (1999) was excellent, representative and conforms to stipulation that a response rate of 50% is adequate for analysis and reporting; a rate of 60% is good and a response rate of 70% and over is excellent. This response rate was also a show of commitment to sharing information on quality management by the company

Other studies on quality management which showed excellent response rate included; Research on effects of total quality management implementation on business performance at Kenya Wildlife Services Karani&Bichanga (2012)with response rate 90%.A study on Quality Management Practices in Kenyan Educational Institution: The case the University of Nairobi response rate was 60%.In addition a study on the role of quality in growth of small and medium enterprises Gakure et al., (2010)had a response rate of 100%.Somes studies can record low

response, for instance an Empirical Study of TQM Practices in Japanese Owned Manufacturing in China (Masahiro and Yoshida, 2004) received overall response rate of 26 percent.

General information from the respondents was representative as all the management staffs were proportionally included. Most of the respondents were from supervisory category which forms the large proportion of the management staffs. Respondents from cuttings department formed a bigger percentage(56%) while those from seed department were 34%. Those who had worked in the organization between 2-5 years were 40% .The data shows that the study was a very good representation of Pollen Ltd .

5.2.2 Quality Management System Implementation

The study found that Pollen Ltd has an audit structure and procedure; that internal audit is planned and implemented, that the organization has a detailed organizational structure and that succession management is in place and tasks substitution planned. The results are in line with the company's quality management system and certification bodies. Pollen Ltd applies quality policy in its operations, that there is quality manual in line with objectives and that equipment and machines are serviced and calibrated. The study deduced that QMS is planned to meet the quality objectives, that the company conducts suppliers' evaluation per year. In this case supplier's evaluation records were also reviewed. The study also showed that there is a quality manager responsible for quality issues as clearly stipulated in the organogram which was also reviewed. Product traceability procedure and customer complains handling is in place as required by GSPP, ISO and NAKT. Audits at Pollen Ltd are aimed at satisfying the customer. The study established that quality policy is understood by all Pollen employees, and that QMS is updated accordingly. Employees are trained periodically to improve skills, records of training and schedules were

reviewed from Human resource office and they corroborated the findings of the study. The study revealed that corrective measures were taken to ensure conformity, that records of training and contents were clearly documented, that employees are aware of customers' expectations. According to Deros et al., (2006) training underpins quality management and determines the effectiveness of the quality initiatives undertaken. Staffs are sufficiently informed about their responsibilities as also indicated in their job descriptions and that quality objectives are adhered to by all employees. Documents are reviewed periodically and controlled by the quality manager and that the company has a communication procedure in accordance with ISO 9001:2008.

Documenting what the company does and doing what they have documented was the major aim of documentation. The documentation in pollen Ltd consist of prepared quality manual that adequately covered all relevant aspects of the quality system, procedures for describing general instructions and job organization, and detailed work instructions that covered all technical requirements and other relevant data as required by GSPP and ISO.

QMS for pollen ltd includes the organization's quality policy and objectives, management responsibility and authority, procedures and work instructions related to all departments, and all functions. In addition, management has established and maintained documented procedures for appropriate document review and approval, distribution, provision of reference list, and approval of all changes and modifications. Obsolete documents are promptly removed from all points of issue or use or otherwise identified. There is an excellent online document management system which is well controlled. From the findings, Pollen Ltd has adopted quality management system to a very great extent and it was a strategic decision of the organization. The findings are

consistent with ISO 9001:2008, Good Seeds and Plant Practices (GSPP) and NAKT which the organization subscribes to. The three certificates were still valid and displayed in the offices.

These results were supported by secondary data which was reviewed; Audit schedules, audit reports, quality manuals, standard operating procedures, protocols and work instructions were consistent with the findings. Quality Management Systemat Pollen Ltd had demonstrated its ability to consistently provide products that meets customer and applicable statutory and regulatory requirements and aims to enhance customer satisfaction through effective application of the system including processes for continual improvement of the system and assurance of conformity to customer requirements.

Corrective and preventive actions are employed in investigating the root causes of non-conforming products by analyzing the processes and systems, work instructions, service and customer reports, and finding solutions to prevent reoccurrence. Employees and management thoroughly understood the systems and processes involved and corrective actions are implemented effectively to prevent the occurrence of potential future defects or errors.

While investigating quality management practices in Kenyan Education Institution using the case of University of Nairobi, Magutu et al., (2010) revealed that UON's quality management policy is appropriate to its purpose and the university communicated the importance of meeting customers as well as statutory and regulatory requirements. The university to a very great extent made use of quality manual which was well documented and take corrective action to ensure conformity of the product. Pollen ltd like the University of Nairobi has also communicated the need to satisfy customers and meeting statutory & regulatory. Reports from KEPHIS were reviewed which had stated the farm's compliance with the phytosanitary requirements.

Certification and positive audit reports from GSPP, ISO and NAKT were also a confirmation of compliance.

5.2.3 Strategic Quality Management Practices

The study found out that training in the basic statistical techniques was provided, resources are available for employees training in the company, and employee involvement programs were implemented and that quality related training are given to employees.

The study deduced that clarity of product specification, amount of preventive equipment maintenance, clarity of work processes given to employees, amount of inspection for final quality, amount of review for in process quality, extent to which new product was designed before production and processes are reviewed to a very great extent. The findings are in agreement with Juran trilogy: Quality control, quality improvement, and quality planning

The findings revealed that the organization worked closely with suppliers and that the company rewarded and recognized quality of work. It also revealed that customer relationships were evaluated and improved, suppliers are educated, company relied on few dependable suppliers, future expectations and requirements of customer are planned for, and the company regularly measured customer satisfaction to a very great extent. Many authors advocate that companies must establish supply chain partnerships to motivate suppliers to provide materials needed to meet customer expectations. The results are therefore consistent with Thiagarajan et al., (2001) who revealed that effective supplier quality management is facilitated by a corporative relationship with suppliers.

The study revealed that the management set objectives for all managers and that the management communicated its strategy and objectives to staff. Furthermore, the study also revealed that the

company aims at achieving the shortest product time and the organization plans for new production and introductions.

Organization's values were evident in its policies and plans, regular reviews are done to assess quality objectives to a very great extent, quality objectives were tied to business objectives and identification of key indicators to measure performance are applied to a very great extent. The study revealed that quality data was available to management on time and to the employees, availability of data about quality defects such as error rate and defects rate to a very great extent.

The study also found out that the extent to which management promoted quality improvement efforts management planned for employees' training on quality, the extent of close relationship between functions/departments and the extent to which employees were supported through times of change affected QMS implementation.

The study also established that the management focused on prevention of problems before they happen and that they had a framework for process management and improvement.

From the results of the study, strategic quality management factors have been applied at Pollen Ltd to a very great extent. These principles as they have been detected in recent studies are: leadership, strategic quality planning, employee management and involvement, supplier management, customer focus, process management, continuous improvement, fact based management, quality assurance, information and analysis and knowledge and education. Factors such as top management commitment and leadership, people management, policy and strategy, partnership and resources management and management of processes, are generally considered as the initial inputs to the implementation of strategic quality management. According to Temur et al., (2009), firms practicing SQM consider the principles of 'process improvement',

‘assessment of competitiveness’ and ‘strategic integration’ more significant. It is therefore evident that Pollen Ltd is practicing SQM as process improvement was one of the principles being practiced to a very great extent.

Research by Awino et al., (2012) on “Total Quality Management and competitive advantage of firms” had indicated that horticultural industry in Kenya is learning to implement total quality management. In the case of Pollen Ltd the company was found to be on a very good level as far as quality management is concerned. Although the study had also indicated that leadership scored poorly, it was evident that Pollen Ltd as a company practiced leadership to a very great extent.

Ngware et al., (2006) had revealed that B.O.G and chair persons in secondary schools are not providing leadership that would promote total quality management practices for school continuous improvements. In the case of Pollen ltd it was found that leadership is practiced and continuous improvements to a very great extent. Majority of schools according to Ngware et al., (2006) are not committed to strategic quality planning though they do promote human resource development initiatives. For Pollen Ltd it was clear that most of the strategic quality management initiatives including strategic quality planning were practiced to a very great extent. Karani and Bichanga (2012) while focusing on KWS revealed that KWS practices continuous improvements and it is customer focused. Pollen Ltd was also found to be customer focused and embraces continuous improvements. This was supported by Lee et al., (2003) argument that customer satisfaction positively related to process improvement.

5.2.4 Benefits and Challenges of Implementing Quality Management System

From the finding, satisfied customer was one of the most important benefits Pollen had seen when they implement QMS. Fewer rejects and interceptions, higher revenue, better relation with our suppliers, making work easier, more motivated employees, higher productivity and higher market share are other benefits of implementing QMS. The respondents cited better relation with stakeholders and better relation among employees as the least important benefit they had seen when implementing QMS.

Respondents indicated; lots of data documentation, treating certification as an end, long time needed to see results as the most challenges they face while implementing QMS. High cost of operations, too much time needed, complicates operations, resistance from managers and lack of management commitments as other challenges in order of importance. Resistance from workers and lack of qualified personnel were cited as the least challenges of implementing QMS

Awino et al., (2012) in his study indicated that most certified companies do not understand the philosophy behind the quality management and therefore cannot implement it effectively. For pollen ltd understanding of quality management philosophy was found to be on a good level and this could explain why the company is implementing QMS effectively.

5.3 Conclusions

This study concludes that Pollen Ltd has a quality management system which is implemented to a very great extent. When quality system is well maintained with strong emphasis on the maintenance it has great potential for continuous improvement. Quality management system at Pollen Ltd is in line and consistent with the ISO 9001:2008, GSPP standard and Nakt Standard.

Internal quality audit scheduled throughout the year and interdepartmental audit with qualified auditors from each operational department plays a vital role in sustaining the quality system.

The study also concludes that Pollen Ltd has applied strategic quality management practices in its operation. Top management had demonstrated a commitment and a determination to implement a quality management system in the organization. Through management commitment Pollen Ltd has managed to satisfy customers through all its operations.

Satisfied customer is one of the greatest benefits of implementing QMS at Pollen Ltd. This is in line with the organization's policy of "customer satisfaction and stakeholder's confidence". The most challenging part of implementing QMS is a lot of documentation needed and treating certification as an end.

5.4 Recommendations for Further Research

The study recommends research to be done on the influence of QMS on the performance of horticultural industry in Kenya. It is also recommends that a similar study should be conducted on the effect of Quality Management Systems on employee productivity in the horticultural industry in Kenya. In addition the study recommends future research to be carried out on effects of strategic quality management practices on the performance of the horticultural industry in Kenya.

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APPENDIXES

Appendix 1: Letter of Introduction

James Wathiru
P.O Box 1037-00232
Ruiru

Dear Respondent,

I am a student at the University of Nairobi undertaking an MBA course. In partial fulfillment of the course requirement, I am conducting a study on the strategic quality management practices in the Kenyan horticultural farms. With this regard, I request you to spare a few minutes to fill in the questionnaires as diligently as possible. The information in this questionnaire will be strictly confidential and will not be used for any other purpose than for this research. Your assistance in facilitating the same will be highly appreciated.

Thank you.

James Wathiru

Appendix II: General Information

Thank you for your assistance in this project. Please give the following information for statistical purposes.

1. Please indicate department are you working in?

CuttingsSeeds..... Both

2. Please indicate your position in the organization?

Top management..... Middle management

Management representative..... Others (please specify).....

3. You have been working for the current organization for: Please tick the correct duration.

Less than 6 months-----6 months to 1yr-----1year to 2 years-----

2years to 5 years -----5 years to 10 years-----10 years and more-----

Appendix III: Questionnaires

Please respond to the following questions by circling one of the numbers [1] to [5] to the right of the question. The number represents the strength or degree of your assessment, agreement, perception or opinion as the case may be to the question item. Scale: [5] Very great extent [4] Great extent [3] Some extent [2] low extent [1] Very Low extent [X] Unable to respond

1. The following questions relate to Quality management System (QMS) in your company.

- | | | | | | | | | |
|--------------------------|---|--|-----|-----|-----|-----|-----|-----|
| <input type="checkbox"/> | a | The organization has a quality policy in place. | [5] | [4] | [3] | [2] | [1] | [X] |
| | b | Quality policy is understood/communicated to employees. | [5] | [4] | [3] | [2] | [1] | [X] |
| | c | There is quality manual in line with objectives. | [5] | [4] | [3] | [2] | [1] | [X] |
| | d | QMS is in place which is updated accordingly. | [5] | [4] | [3] | [2] | [1] | [X] |
| | e | QMS is planned to meet the quality objectives. | [5] | [4] | [3] | [2] | [1] | [X] |
| | f | Quality objectives are adhered to by all employees. | [5] | [4] | [3] | [2] | [1] | [X] |
| | g | Documents are reviewed periodically & controlled. | [5] | [4] | [3] | [2] | [1] | [X] |
| | h | The company conducts suppliers' evaluation per year. | [5] | [4] | [3] | [2] | [1] | [X] |
| | i | Quality manager is appointed for quality issues. | [5] | [4] | [3] | [2] | [1] | [X] |
| | j | Product Traceability procedure is in place. | [5] | [4] | [3] | [2] | [1] | [X] |
| | k | Customer complains handling procedure is in place. | [5] | [4] | [3] | [2] | [1] | [X] |
| | l | Employees are aware of customers' expectations. | [5] | [4] | [3] | [2] | [1] | [X] |
| | m | The company has a quality communication procedure. | [5] | [4] | [3] | [2] | [1] | [X] |
| | n | Internal audits are planned and implemented annually. | [5] | [4] | [3] | [2] | [1] | [X] |
| | o | Employees are trained periodically to improve skills. | [5] | [4] | [3] | [2] | [1] | [X] |
| | p | Staffs are sufficiently informed about their responsibilities. | [5] | [4] | [3] | [2] | [1] | [X] |
| | q | The audits are aimed at satisfying the customers. | [5] | [4] | [3] | [2] | [1] | [X] |
| | r | The company has audit structure and procedure. | [5] | [4] | [3] | [2] | [1] | [X] |
| | s | Corrective measures are taken to ensure conformity. | [5] | [4] | [3] | [2] | [1] | [X] |
| | t | Equipment and machines are serviced and calibrated. | [5] | [4] | [3] | [2] | [1] | [X] |
| | u | Records of training and contents are clearly documented. | [5] | [4] | [3] | [2] | [1] | [X] |
| | v | The organization has a detailed organizational structure. | [5] | [4] | [3] | [2] | [1] | [X] |
| | w | Succession management is in place. | [5] | [4] | [3] | [2] | [1] | [X] |

2. The following questions relate to Human Resource development in your company.

- | | | | | | | | |
|---|---|-----|-----|-----|-----|-----|-----|
| a | Extent to which quality related training is given to employees. | [5] | [4] | [3] | [2] | [1] | [X] |
| b | Extent to which training in basic quality analysis is given. | [5] | [4] | [3] | [2] | [1] | [X] |
| c | Availability of resources/funds for employee training in the company. | [5] | [4] | [3] | [2] | [1] | [X] |
| d | Extent to which employee involvement programs are implemented. | [5] | [4] | [3] | [2] | [1] | [X] |
| e | Extent of effectiveness of employee involvement. | [5] | [4] | [3] | [2] | [1] | [X] |
| f | Extent to which nonsupervisory employees participate in quality decision. | [5] | [4] | [3] | [2] | [1] | [X] |
| g | Extent to which employees are held responsible for output of their process. | [5] | [4] | [3] | [2] | [1] | [X] |
| h | Extent to which quality awareness building among employees is ongoing. | [5] | [4] | [3] | [2] | [1] | [X] |

3. The following questions relate to quality assurance in your company.



- | | | | | | | | |
|---|---|-----|-----|-----|-----|-----|-----|
| a | Extent to which new product design is reviewed before production | [5] | [4] | [3] | [2] | [1] | [X] |
| b | Clarity of product specification to the employees. | [5] | [4] | [3] | [2] | [1] | [X] |
| c | Clarity of product procedures to the employees. | [5] | [4] | [3] | [2] | [1] | [X] |
| d | Extent to which processes are reviewed to guarantee quality. | [5] | [4] | [3] | [2] | [1] | [X] |
| e | Extent of preventive equipment maintenance. | [5] | [4] | [3] | [2] | [1] | [X] |
| f | Extent of inspection for final quality. | [5] | [4] | [3] | [2] | [1] | [X] |
| g | Extent of review for quality process. | [5] | [4] | [3] | [2] | [1] | [X] |
| h | Extent of clarity of work process instructions given to employees | [5] | [4] | [3] | [2] | [1] | [X] |

4. The following questions relate to supplier participation and partnership in your company.



- | | | | | | | | |
|---|--|-----|-----|-----|-----|-----|-----|
| a | Extent the company communicates its quality strategies to suppliers. | [5] | [4] | [3] | [2] | [1] | [X] |
| b | The organization works closer with suppliers. | [5] | [4] | [3] | [2] | [1] | [X] |
| c | The company rewards and recognizes quality of work. | [5] | [4] | [3] | [2] | [1] | [X] |
| d | The company trains and reinforces its employees. | [5] | [4] | [3] | [2] | [1] | [X] |
| e | Suppliers are aware of quality specifications. | [5] | [4] | [3] | [2] | [1] | [X] |

5. The following questions relate to customer focus practices in your company.

- | | | | | | | | |
|---|--|-----|-----|-----|-----|-----|-----|
| a | Complaints and problems are resolved promptly and efficiently. | [5] | [4] | [3] | [2] | [1] | [X] |
| b | Customer requirements are communicated throughout the business. | [5] | [4] | [3] | [2] | [1] | [X] |
| c | Customer relationships are evaluated and improved. | [5] | [4] | [3] | [2] | [1] | [X] |
| d | Future expectations and requirements of customer are planned for. | [5] | [4] | [3] | [2] | [1] | [X] |
| e | Extent to which suppliers are selected based on quality rather than price. | [5] | [4] | [3] | [2] | [1] | [X] |
| f | Extent to which company relies on few dependable suppliers. | [5] | [4] | [3] | [2] | [1] | [X] |
| g | Extent to which you educate suppliers. | [5] | [4] | [3] | [2] | [1] | [X] |
| h | The company regularly measure customer satisfaction. | [5] | [4] | [3] | [2] | [1] | [X] |
| i | Customers' requirements are used as the basis for quality. | [5] | [4] | [3] | [2] | [1] | [X] |
| j | Management support activities improving customer satisfaction. | [5] | [4] | [3] | [2] | [1] | [X] |

6. The following questions relate to Fact based management practices in your company.

- | | | | | | | | | |
|--------------------------|---|---|-----|-----|-----|-----|-----|-----|
| <input type="checkbox"/> | a | Strategies are developed based on customers' requirements. | [5] | [4] | [3] | [2] | [1] | [X] |
| | b | The management sets objectives for all managers | [5] | [4] | [3] | [2] | [1] | [X] |
| | c | The management sets objectives for all employees | [5] | [4] | [3] | [2] | [1] | [X] |
| | d | The management communicates its strategy and objectives to staff | [5] | [4] | [3] | [2] | [1] | [X] |
| | e | The company invest in tools for diagnosing and solving quality problems | [5] | [4] | [3] | [2] | [1] | [X] |

7. The following questions relate to Design quality, speed and prevention practices in your company.

- | | | | | | | | | |
|--------------------------|---|---|-----|-----|-----|-----|-----|-----|
| <input type="checkbox"/> | a | Extent the company aims at achieving the shortest product time. | [5] | [4] | [3] | [2] | [1] | [X] |
| | b | Extent the organization plans for new production and introductions. | [5] | [4] | [3] | [2] | [1] | [X] |
| | c | The organization is designed to meet the demands of the customers. | [5] | [4] | [3] | [2] | [1] | [X] |
| | d | The organization embraces innovative application of technology. | [5] | [4] | [3] | [2] | [1] | [X] |
| | e | The organization operations aim at reducing errors/defects. | [5] | [4] | [3] | [2] | [1] | [X] |

8. The following questions relate to Strategy, Policy and Planning practices in your company.

- | | | | | | | | |
|---|---|-----|-----|-----|-----|-----|-----|
| a | Extent to which organization's values are evident in its policies. | [5] | [4] | [3] | [2] | [1] | [X] |
| b | Extent to which Quality objectives are tied to business objectives. | [5] | [4] | [3] | [2] | [1] | [X] |
| c | Extent to which regular reviews done to assess quality objectives. | [5] | [4] | [3] | [2] | [1] | [X] |
| d | Identification of key indicators to measure performance. | [5] | [4] | [3] | [2] | [1] | [X] |
| e | Extent to which resources are allocation to achieve quality objectives. | [5] | [4] | [3] | [2] | [1] | [X] |
| f | All employees contribute to the development of company's goals. | [5] | [4] | [3] | [2] | [1] | [X] |

9. The following questions relate to quality information and analysis in your company.

- | | | | | | | | | |
|--------------------------|---|--|-----|-----|-----|-----|-----|-----|
| <input type="checkbox"/> | a | Availability of data about quality defects such as error rate, defects rate. | [5] | [4] | [3] | [2] | [1] | [X] |
| | b | Extent to which quality data is available on time. | [5] | [4] | [3] | [2] | [1] | [X] |
| | c | Extent to which quality data is available to management. | [5] | [4] | [3] | [2] | [1] | [X] |
| | d | Extent to which quality data is available to the employees. | [5] | [4] | [3] | [2] | [1] | [X] |
| | e | Extent to which quality data is used in the company. | [5] | [4] | [3] | [2] | [1] | [X] |

10. The following questions relate to Leadership in your company.

- | | | | | | | | |
|---|--|-----|-----|-----|-----|-----|-----|
| a | Extent to which employees are supported through times of change. | [5] | [4] | [3] | [2] | [1] | [X] |
| b | Extent to which management promotes quality improvement efforts. | [5] | [4] | [3] | [2] | [1] | [X] |
| c | Extent to which management participates in giving training in quality. | [5] | [4] | [3] | [2] | [1] | [X] |
| d | Degree to which management provides enough resources for quality. | [5] | [4] | [3] | [2] | [1] | [X] |
| e | Extent to which quality goals are communicated to all employees. | [5] | [4] | [3] | [2] | [1] | [X] |
| f | Extent of Close relationship between functions/departments. | [5] | [4] | [3] | [2] | [1] | [X] |
| g | Management spends time on quality issues. | [5] | [4] | [3] | [2] | [1] | [X] |
| h | Management plans for employees' training on quality. | [5] | [4] | [3] | [2] | [1] | [X] |

11. The following questions relate to Continuous Improvement in your company

<input type="checkbox"/>	a	Embraces continuous improvement of its products and processes	[5]	[4]	[3]	[2]	[1]	[X]
	b	Encourages a culture of innovation within the company.	[5]	[4]	[3]	[2]	[1]	[X]
	c	Focuses on prevention of problems before they happen.	[5]	[4]	[3]	[2]	[1]	[X]
	d	Have a framework for process management and improvement.	[5]	[4]	[3]	[2]	[1]	[X]
	e	All processes are continuously improved.	[5]	[4]	[3]	[2]	[1]	[X]
	f	Suppliers work closely with the company to improve processes.	[5]	[4]	[3]	[2]	[1]	[X]
	g	Areas of improvements are identified in the organization.	[5]	[4]	[3]	[2]	[1]	[X]
	h	Process improvement department in place to enhance improvements.	[5]	[4]	[3]	[2]	[1]	[X]

Appendix IV: Benefits and Challenges of implementing QMS

I. Benefits of implementing quality management system (QMS)

Kindly list out on importance basis the benefits you have seen when your organization implements quality management systems.

Table 2: Benefits of implementing QMS

Benefits of implementing QMS in the organization	Score
Satisfied customers	
Better relation with our suppliers	
More motivated employees	
Fewer rejects and interceptions	
Higher revenue	
Higher market share	
Better relation with stakeholders	
Makes operations easier	
Higher employee productivity	
Better relation among employees	

I. Challenges of implementing QMS

Kindly state the main challenges, on an importance level basis that you think are the main causes of not effectively implementing quality management system.

Table 3: Challenges of implementing QMS

Challenges of Implementing QMS in the organization	Score
Long time needed to see the results	
Lack of management commitments	
Treating certificate as an end	
Resistance from managers	
Resistance from workers	
Too much time needed	
Complicates operations	
Lack of qualified personnel	
High cost of operations	
Lots of data documentation	