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An evaluation of Total Quality Management Practices among Manufacturing Companies in Kumasi

by

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DECLARATION

I hereby declare that this submission is my own work towards the MSc Project Management and that, to the best of my knowledge, it contains no material previously published by another person, nor material which has been accepted for the award of any other degree of the University, except where due acknowledgement has been made in the text.

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ABSTRACT

Customers and consumers have often criticized firms in Kumasi, and Ghana as whole for not meeting quality standards. Both the manufacturing and the service companies are no exception. The need for quality assurance from both the local and international perspective cannot be over-emphasized, as there have been massive attempts by authorities of Ghana to curb the proliferation of fake and non-standardized products onto the Ghanaian market. This study was conducted to evaluate Total Quality Management (TQM) practices in the manufacturing firms in Kumasi. Three (3) objectives were outlined to help in achieving the aim of this study thus: to identify TQM practices implemented in manufacturing companies in Kumasi, to identify the key obstacles to the implementation of TQM in manufacturing companies in Kumasi and to identify strategies to avert the difficulties encountered in the implementation of TQM practices among manufacturing companies in Kumasi. By using the quantitative research method thus through a questionnaire survey, the study adopted the positivist approach in making an objective analysis. A total of one-hundred and forty-four (144) questionnaires were administered and one hundred (100) were retrieved from purchasing officers, maintenance technicians, operators, production managers, leading hands, factory hands and supervisors in the manufacturing firms visited. The analysis of the data gathered was done using descriptive statistics (percentages, frequencies), relative importance index (RII) and mean score ranking. Findings from the study indicated that exactly 12 respondents representing 12% were much aware or had adequate knowledge of the existence of total quality management (TQM) practices whiles 31 respondents had a fairly adequate knowledge of TQM practices in the manufacturing industry. The study revealed that the widely known TQM Practice among respondents was Customer Focus (CF) which had the highest RII of 0.602. A major challenge in the effective implementation of TQM practices was lack of training with a mean value of 4.59 and RII of 0.918. Other equally critical barriers were ineffective internal communication between management and employees, employee resistance as well as lack of strong leadership. Adequate training and experience of managers was therefore seen as the better of all the strategies needed for the successful implementation of TQM practices. It was recommended that firms restructure their organization to include a Quality Department manned by Quality Professionals for proper Quality Management to be practiced and benefits derived.

Keywords: Total Quality Management, Manufacturing industry, Implementation, Challenges and Strategies

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Finally, my acknowledgement cannot be complete without mentioning the tremendous support and admonishing of my family, whose motivation and encouragement sustained me to surmount every difficulty in life including those encountered in this research.

DEDICATION

This research work is dedicated to my mother and siblings Beatrice, Mary and Eugene.

Also to my wife Nancy and son Damien who have been a daily source of inspiration and everyone who has been a blessing to me.

CHAPTER ONE

GENERAL INTRODUCTION

1.1 BACKGROUND TO THE STUDY

The efficiency of the management cycle to plan, implement and make improvements in the project is defined by Deming (1986) as quality. Not only does customers only get satisfaction on the quality of product but then they however boast about it making room for others to especially their friends to patronize. The fitness to use a product in relation to its design, conformance, availability, safety, and field use is defined to as quality by Juran (1988). This concept thus, incorporates the customer's viewpoint. Unlike Deming (1986) who focused on worker pride and satisfaction Juran (1988) on the other hand focused on top-down management and technical methods. A product or service's ability to meet or exceed customer expectations is termed as Quality. (Stevenson, 2011). Quality management has advanced over the years, starting with the process of quality control (QC) whereby product samples are picked and inspected for defects and errors. Succeeding the evolution of quality control (QC) came a new system called quality assurance (QA). Quality Assurance (QA) two major principles they run on which are the principles of 'Fit for Purpose' and 'Right first Time'. Over the years total quality management (TQM) is another concept of quality control. TQM involves continuously improving the production processes and then building closer relationships with clients and team members. Studies on total quality management (TQM) showed a reduction in cost and a better employee satisfaction that ultimately increase client satisfaction (Low & Jasmine 2004).

In this era of globalization, in order to achieve customer satisfaction in the face of increasing competition from around the world, firms have launched Total Quality Management (TQM) programs in an attempt to retain or regain competitiveness. The concept of total quality concept as

a management concept contributes to customer satisfaction and not only the customer-perceived quality (Seyed-Mahmoud, 2002). The organizations drive to provide products and services to the satisfaction of clients must aim at quality at the basis of their efficacy (Zairi, 2002).

Over the past few decades, quality gurus such as Walter Shewhart, W. Edwards Deming, Joseph M. Juran, Philip Crosby, Armand V. Feigenbaum and Kaoru Ishikawa, have contributed in the field of TQM, that have had a great influence across the globe (Zhang, 2000). Their insights provided a good understanding of the TQM philosophy, principles, and practices. After a careful study of their work, it has been found that these quality gurus have different views about TQM, albeit some similarities exist.

However, despite the growing number of firms that have adopted this management technique, few formal tests exist concerning the pattern of adoption as well as the changes that accompany the adoption of TQM. The awareness of quality management among some manufacturing companies is on the increase due to its positive effect on organizations and Ghana is no exception to this increasing phenomenon. A lot of firms have accepted that effective TQM implementation has the benefit of improving their competitive advantage and provide strategic opportunities in the marketplace (Karani and Bichanga, 2012). TQM achievement has therefore become a vital measure of organizational success in both manufacturing and services (Nofal et al., 2005). Krajewski et al. (2007) established that quality is one important strategic weapon that enhances global competition in most organizations.

An effective implementation of TQM practices will ensure the benefits of other additional benefits (Karani and Bichanga, 2012). TQMs relevance in the manufacturing sector has proven its benefits to other institutions which has resulted in the impact of performance of this service organizations because of the invariability of TQM practices deployed (Prajogo, 2005). Service organizations

have followed the adaptation of TQM practices after its great success in manufacturing organizations. For decision on the evaluation of service quality is important to the implementation of TQM in the service sector. This evaluation can be conducted based on flexibility, cost, response time and totality.

1.2 STATEMENT OF THE PROBLEM

In Ghana, not much is known on how TQM influence product quality as very little research has been conducted to assess the influence of TQM on firm productivity and quality of products. Customers and consumers have often criticized firms in Kumasi, and Ghana as whole for not meeting quality standards. Both the manufacturing and the service companies encounter these criticisms (Fening et al., 2008). Both local and international agencies cannot over-emphasized their quest to deal with the poor or low standard products the proliferation of fake and non-standardized products onto the market (GNA, 2008a). As a result, in 2008, the then Chief Director of the Ministry of Trade, Industry, Private Sector Development and President's Special Initiatives pledged support to the installation of Quality Management Systems (QMS) by some manufacturing companies to ensure quality standards in their business, (GNA, 2008b). Mensah et al. (2012), revealed that awareness of quality management is relatively high among the Ghanaian multinational firms that have some degree of expatriate management and they performed well. The study therefore seeks to evaluate the total quality management practices of manufacturing companies in Kumasi.

1.3 RESEARCH AIM

The main aim of this study was to evaluate the total quality management practices in manufacturing companies in Kumasi.

1.4 OBJECTIVES OF STUDY

The study sought to achieve the above aim through the following objectives:

1. To identify TQM practices implemented in manufacturing companies in Kumasi;
2. To identify key obstacles to the implementation of TQM in manufacturing companies in Kumasi; and
3. To identify strategies to avert the difficulties encountered in the implementation of TQM practices among manufacturing companies in Kumasi.

1.5 METHODOLOGY

This study was conducted using quantitative research method, with data collected using questionnaires that were administered to purchasing officers, maintenance technicians, operators, production managers, leading hands, factory hands and supervisors in selected manufacturing firms. Existing literature on and related to the subject of study were extensively reviewed.

The data from questionnaires that were retrieved was entered into Statistical Packages for Social Sciences (SPSS) for analysis. The findings from the analysis were presented in a form of series of numbers, tables and a chart using Microsoft Excel 2016.

1.6 RESEARCH QUESTIONS

1. What are the TQM practices implemented in manufacturing companies in Kumasi?
2. What are the key obstacles to the implementation of TQM in manufacturing companies in Kumasi?
3. What are the strategies to alleviate the challenges encountered in the implementation of TQM practices among manufacturing companies in Kumasi?

1.7 SIGNIFICANCE OF THE STUDY

An effective government policy implementation and adoption can improve competitive abilities and provide strategic advantages in the marketplace for firms. The study will benefit government and other policy making institution as it will sort to redirect their attention on the need to assist manufacturing companies in the practice of total quality management in other to produce goods of much quality to capture loyal customers.

Also this will drive policy directions to regulatory and other bodies like the Ghana Standard Authority, the Agency for Consumer Protection and as well as foreign agencies like the ISO that are committed to seeing the growth and development success of TQM in Ghana.

The study will also provide insight to industries in Ghana, more especially to manufacturing firms both private and state-owned, to employ the TQM practices in the process of product design and manufacturing.

1.8 SCOPE OF THE STUDY

This study was contextually limited to some selected manufacturing firms in Kumasi metropolis. The city holds about 15% of the manufacturing industries in Ghana (Kumasi Metropolitan Assembly records (KMA), 2016). Geographically, Kumasi, the Ashanti regional capital and one of the most popular cities with some firms in manufacturing was thus selected for the study. The scope also focused on the practices, the obstacles and the strategies to successfully implement TQM.

1.9 ORGANIZATION OF THE STUDY

The study was covered in five chapters. Each chapter is organized in the following manner.

Chapter one providers the general introduction of the study at hand. It highlights the briefly the background of study and spells out the aim, and objectives that steers the study coupled with

related research questions. In Chapter Two literature related to the study is reviewed. It includes both empirical review of theoretical literature on Total Quality Management practices. Chapter Three focuses on methodology of the study. It covers research type, population, sample and sampling techniques used for the study. It also describes the instrument used, procedure for the collection of the data and analysis of the data. Chapter Four of this study will cover how data is analyzed and discussion of the findings of research data analysis. The final chapter will provide the summary of the findings, drawn conclusions, researcher's recommendation made as well as suggestions into further research.

CHAPTER TWO

LITERATURE REVIEW

2.1 INTRODUCTION

This chapter provides a theoretical establishment whereupon the exploration is based. The literature review was organized in the following form: concept of Quality Management and Total Quality Management, benefits, challenges to adoption and implementation and probable solution to the challenges inhibiting the adoption and implementation of TQM in manufacturing firms.

2.2 CONCEPT OF QUALITY

Quality is a critical issue in the advanced aggressive business world and it is recognized by most scholarly community, scientists and experts, henceforth, characterizing it is essential for any association leaving on quality change travel. In this manner, it empowers workers and administration divert their endeavors in the vision of the organization and their quality change objective. Be that as it may, there is no all-around acknowledged definition for it (Dale, 2003). The meaning of value has experienced a scope of musings in light of the one putting it forward could bolster the definition by realities, impression of brilliance or supporting writing (Dale, 2003 referred to in Dahlgaard-Park., 2012). Thus, one can discover an assortment of meanings of value. For instance, ISO characterizes it as "the totality of highlights and attributes of an item or administration that bears on its capacity to fulfill expressed or inferred needs" (ISO 8402, 1994). Palaneeswaran et al, (2005) additionally characterizes it as the sum total of attributes of an item that administration rests on its capacity to both viably and proficiently meet the illustrated necessities/determinations and also fulfilling the partners' needs. W. Edward Deming characterizes quality as an item or administration "that helps some person and appreciates a decent and maintainable market" (Deming, 2000). Joseph Juran portrays it with the expression "wellness for

use by the client" as a meaning of value (Juran and Gryna, 1993). Crosby characterizes it as "Conformance to prerequisites or standard" (Crosby, 1979), Feigenbaum characterizes quality as "the aggregate composite item and administration attributes of showcasing, building, produce and upkeep through which the item and administration being used will meet the desires of the client" (Feigenbaum, 1991).

Oakland (2000) likewise displays the accompanying meaning of value "meeting the client necessities. The necessities may incorporate accessibility, conveyance, unwavering quality, viability, and cost adequacy among numerous different highlights". Oakland (2000) additionally exhibits the accompanying meaning of value "meeting the client necessities. The necessities may incorporate accessibility, conveyance, dependability, practicality, and cost adequacy among numerous different highlights".

2.3 THE CONCEPT OF TOTAL QUALITY MANAGEMENT

Total quality management is a management concept that focuses on quality with respect to the participation of all its members with the target of obtaining a long term success via the satisfaction of its customers and benefits to all organization and society members (Arawati, 2005). It is management approach by organizations by putting in efforts by creating the environment for which an organization can continually improve upon its ability to provide to customer’s high quality products and services (Arawati, 2005). The efforts of total quality management are focused mainly on past established methods or techniques and tools of quality control although there is no widely accepted approach.

TQM is a strategic approach for continuous improvement in output at every level, and in all areas of responsibility. Under a well-developed structure with the aim of continuously improving all processes, total quality management includes the fusing of fundamental management techniques,

improvement in on-going efforts, and technically specialized tools. Performance improvement aims at achieving such great goals like reduction in cost, product quality and services, its schedule of delivery, and the ability to suite demands. The primary objective however is to increase user satisfaction. It has become the first title used to explain the management approach to improvement in quality. Many meanings has been taken by TQM since then. Simply, TQM is an approach to management towards a long-term success through the satisfaction of customers. TQM is an all engaging activities of all members in an organization that participate to improve the process, product, services as well as the culture in which they find themselves to work (Arawati, 2005).

In the United States, the Malcolm Baldrige National Quality Award annually recognizes various institutions and corporate organizations that run very high quality operations. In ranking the organizations seven categories are considered which includes; strategic planning, leadership ability, customer's consideration, measurement of work, analysis, and knowledge management, staff level consideration, operations and goals outcome. The degree of conspicuousness and backing provided by management in the implementation of total quality environment is termed as Leadership. Whereas having a definite vison, mission long-term plan and policy of quality is referred to as strategic planning. The success of TQM adoption is dependent on the level of support provided by the management in other to implement (Arawati, 2005).

2.3.1 Historical Evolution of Total Quality Management

It is generally trusted that aggregate quality administration developed bit by bit and occurred in four phases to be specific, quality investigation, quality control, quality affirmation and Total Quality Management (Dahlgaard-Park., 2012).

The main phase of this advancement began in the 1910s and started with total quality control (investigation). Amid that period skilled workers were in charge of assembling and only

controlling the nature of their items. Quality was in the hands of the skilled workers and building quality into an item was the point of specialists (Dahlgaard-Park., 2012). Be that as it may, the mechanical upheaval made an industrial facility framework when expansive scale creations of merchandise and ventures in production lines created Craftsmen were gathered together and administered by administrators (foremen) for their quality work. In this way, the ace foremen kept up a type of value control by examining the completed items previously offering them (Juran, 1991). The nature of the item depended generally on the abilities of the skilled workers and the adequacy of the ace foremen. As indicated by Feigenbaum (1991), the accentuation at this stage was on item' consistency, and investigation was believed to be the best way to guarantee quality. Under a basic investigation-based framework, at least one qualities of an item were inspected, measured, tried or evaluated, and contrasted with indicated necessities with survey similarity. The part of the, quality experts was basically review; "arranging, tallying and evaluating of items.

The approach here was to assess in quality (Garvin, 1986). All in all, straightforward examination-based frameworks were generally entirely found in-house and did not include clients (Dale, 2003). With promote mechanical progression and the Second World War came the second phase of TQM advancement when fabricating framework was mind boggling and quality believing is extremely basic because of large scale manufacturing and high military measures for item and administrations. Amid that period quality was controlled through administered aptitudes, composed, particular, estimation and institutionalization. In this manner, refined techniques and framework were required in controlling and looking after quality. Measurable quality control i.e control diagrams and examining techniques was then created to assess the after-generation exertion by isolating the great item from the awful item. Shewhart, Dodge and Roming are credited for the

progression of value change by building up this new technique for investigation to enhance and keep up quality-the quality control outlines (Rahman, 2004).

Shewhart upheld that the procedure varies in item, that is variation resulting from arbitrary causes, and variety coming about because of assignable causes or exceptional causes can be recognized by utilizing control diagrams, testing methods, and financial investigation strategies for looking after quality. These philosophical establishments of Shewhart's consistent change process were caught in a graph later to be known as the Shewhart/Deming/PDCA cycle (Rahman, 2004). Shewhart's cycle organize prompted more noteworthy process control and less frequencies of non-conformance contributing altogether to quality administration and framed the establishment for modem quality affirmation, the following stage in the development of TQM.

The third phase of this advancement is the quality affirmation. This contains all the past stages keeping in mind the end goal to give adequate certainty that an item or administration will fulfill clients' needs (Dahlgaard-Park., 2012). Amid this stage, more accentuation was put on issue anticipation as opposed to identification. In this way, there was change in outlook from identification to counteractive action using apparatuses and strategies, for example, quality manuals, utilization of cost of value, advancement of process control and inspecting of value frameworks to advance from quality control to the quality affirmation period of Total Quality Management. Quality confirmation is broadly known as an aversion-based framework which enhances item quality by putting accentuation on item and process plan. This approach focused on recognition of mistake at source.

Accentuation was on the whole creation affix from configuration to advertise, and the commitment of every single useful office. Quality arranging and change positively start when top administration incorporate counteractive action rather than identification in authoritative arrangement and

destinations and begin to coordinate the change endeavors of different divisions (Garvin, 1988). In the 1990s, the ISO 9000 benchmarks rose and typified these ideas of value (Dahlgaard-Park., 2012). This stage accepted the initial two beginning stages to the advancement of TQM in its attempt to deliver items or administrations that address client issues.

2.4 ORGANIZATIONAL PRACTICES NECESSARY FOR TOTAL QUALITY MANAGEMENT

Arawati, 2005 indicated that, Total Quality Management requires eight organizational practices.

2.4.1 Customer focus.

According to the study, the finally quality of a product is undertaken by the customer. Irrespective of all the effort to make a product or service quality by an organization, it is the final say of the customer that matters. Arawati stated that the customers determine whether or not the efforts of the organization in producing the product or service were worthwhile (Arawati, 2005).

2.4.2 Employee involvement.

The workforce of any organization or institution participate towards the attainment of common objective. However, the will exist a higher level of commitment by these employees when the fear is eliminated from their place of work, when empowerment has been restored, and a proper environment has been created. Where there is an increase performance in work systems, there is a continuous improvement in efforts with normal business operations. One form of empowerment is self-managed work teams (Arawati, 2005).

2.4.3 Process centered.

Process thinking is another important aspect of TQM. A series of steps where supplier's inputs are taken and are transformed into outputs that are delivered to customers is referred to as a process. in the sense, the steps that are required in other to undertake this process are well spelt out, and

their performance measures continually monitored to as to enable them detect variations that are unexpected (Arawati, 2005).

2.4.4 Integrated system.

Although there may exist many different functional specialties organized often into structured departments by organizations, the focus of TQM is the horizontal processes interconnecting these functions. The adding up of micro-processes make larger processes, which aggregates into the business processes that are required for the definition and implementation of strategy. There is therefore expedient that everyone is abreast with important characteristics such as the vision, mission, and principles of guiding coupled with quality policies, objectives, and critical processes (Arawati, 2005).

2.4.5 Strategic and systematic approach to management.

The strategic and systematic approach to the realization of an organization's vision, mission, and goals is a critical part of the management of quality. The process involves the making of strategic plans that fuses the quality as an important component (Arawati, 2005).

2.4.6 Continual improvement.

Another important feature of TQM its continual process improvement. It serves as a drive that boosts an organization to find ways to become more competitive and effective at meeting the expectations of stakeholders as they become both analytical and creative (Arawati, 2005).

2.4.7 Decision making.

To know how well an organization is performing, data on performance measures are necessary. TQM requires that an organization continually collect and analyze data to improve decision making accuracy, achieve consensus, and allow prediction based on history (Arawati, 2005).

2.4.8 Effective communication

Communicating effectively has a great impact in maintaining morale and in motivating employees as seen during the period of organizational changes, as well as the part of day-to-day operation. Strategies, method, and timeliness cannot exist without effective communication. As a result of their importance to TQM several organizations to some extent define them to be a set of important values and principles on which the organization falls on to operate **(**Arawati, 2005).

2.5 TOTAL QUALITY MANAGEMENT PRACTICES AND ORGANIZATIONAL PERFORMANCE

2.5.1 Effects of Top Management Commitment on Organizational Performance

Top management can is seen as an important feature to an effective Total Quality program as it has a great impact upon its employees. They get results through their employees although they do not as such produce anything. According to Meere, 2005, when trying to get the best from staff this management style is most considered, being either an autocratic or democratic approach. According to Magutu *et al.,* (2010) in Kenya ISO 9001:2008 for academic institutions provide an invaluable set of benefits. They argue out that the certification of ISO 9001:2008 has benefits such as competition of market, consistency in the quality of products and services, improvement on productivity, employee participation, staff and job morale and satisfaction. However, the actual benefits associated with working and achieving these standard are many as they include improvement to earning, output and profitability. Opposite to this is an argument made by Arawati (2005) that shows instances where the ISO systems do not contribute any worth to the management of processes. TQM is a life connection of a company, as such it is the responsibility of the top management to lead and introduce it. This serves as a major concern as there is failure to its implementation due to the poor attitudes exhibited by the top management through their poor

leadings and commitment. It was pointed out by Zhang that both commitment and personal participation are important requirements needed from top management in other to create and deploy clear quality values and goals which are consistent with the objectives of the organization. (Zhang, 2000).

To identify the most important factor for the implementation of TQM an investigation into ISO 9001:2008 in Kenya and Uganda certified public universities indicated that imperative factors in the implementation of TQM are management leadership and commitment (Olel, 2006). Viewing from the perspective of quality service approach, it was found out by Sit *et al.*, (2011) that the act of leadership has a great impact to service quality in Malaysia's commercial banks. 20 commercial banks listed in the stock with middle management employees in were targeted for the study. Examining the link that exists between the practices of TQM and service quality in the commercial banking industry in Malaysia's was the main objective of the study. After the study results it was indicated that top management leadership is the challenge in these financial institutions in their role to satisfy their clients with services of high quality.

Findings of a study conducted by Eshiwani as well buttresses the relevance of management leadership Eshiwani (2009). The outcome further indicated that a leadership with vision is among other four factors major tools that can guarantee the success of TQM implementation in Kenya's high educational institutes. Higher education has been outlined from the angle of and leaders in Peruvian high education institutes as the most weighted on the criteria in the Malcolm Baldrige National Quality Award (MBNQA). Using the Analytic Hierarchy Process (AHP), the outcome shown indicated leadership obtaining a higher marked to MBNQA. With the new weights obtained to the TQM, a model was proposed by the author to look out for national Peruvian award with respect to TQM in education (Macey & Schneider, 2008). Another study was conducted in Kenya

by Mwiria and Nyukuri (1994) into leadership management. The examination of the relationship that exists between practices of TQM and role stressor was the objective of the study conducted. The levels of practices of TQM and role stressors were indexed in the universities of Kenya. Opposite to the study conducted on the case of the commercial banks, it was shown by the index the role of role stressors was impacted negatively by leadership. Paradoxically to the above leadership has high positive role in quality management in Libyan public hospitals with the outcomes and supporting to the findings in commercial banks and high education preceding cases. According to Shin and Collier (2000) in their study drew a conclusion from their study which comprised of involved three levels of hospitals throughout the urban Tripoli. They stated that in the district level hospitals, leadership and management commitment is higher as compared to the state and national level hospitals. And further suggested that this factor in state level hospitals is higher in the national referral center.

In Libyan service firms, leadership as a TQM dimension has been seen to have a great positive influence in improving customer satisfaction. Most especially in the context of Research and Development (R&D). It was also highlighted by Wiklund and Edvardsson (2003) that a major factor that facilitates the programs and initiatives of TQM IS top management leadership. The study purposed at determining from academic researchers' perspectives in the R&D context the construction of TQM. Researchers widely known across the main public universities in South Africa were involved in the field of science and technology. The above analyses indicated that in an organizational setting commitment of top management is relevant to the TQM success models.

2.5.2 Effect of Employee involvement on organizational performance

Although employees do not decide in what way they ought to be managed, however during the process of implementing changes to styles of management, it become wrong to expect that all employees yield to that just because it is management decision for a change. It is of utmost importance that management involve employees when they are taking up decisions with respect to TQM. Where tools pertaining to a particular system has been given, surety must be taken to make sure that the right people have the right training. Provide training to the right people has ensured the minimization of the misuse of tools and techniques (Otunga, 2007).

Education and training of all employees on going currently is supporting the drive for quality. This is done through the means like encouraging employees to take more responsibilities, effectively communicate, creativity improvement, and innovation acts. Involving employee before making decision that affect them is seen as a matter of courtesy. Involving employee is a simple process. In drawing up decision that will affect employees, often times it best to solicit form them ideas from them hence establishing a relations and as well creating an atmosphere for better results. In the study, it was seen that best performing organizations reported higher by employees as compared to reports of a performance of organization. According to IUCEA, 53% of respondents that marked their institutions to be higher performers had massive involvement as compared to organizations that were marked as under-performing engaged only 8 percent (IUCEA, 2010). This becomes important for organizations to find new ways of clearly communicating to their clients their successes performance. When messages are clear, well-planned, of high-impact employees do not only see the link between their work and successes, but rather understand how their support is relevant to the overall organizational performance, which ties directly to engagement levels. Clearly, it is seen and understood that engaged employees have the understanding of the value of

ensuring a positive customer experience and as well have a higher tendency of demonstrating their commitment by bringing out products and services of high quality. Driven experiences between customer and employee that show great satisfaction of customer and loyalty must be make known to others within the organization. Likewise the link to performance of the organization, a good experience with customers is a credit to having an impactful level (Magutu *et al.,* 2010).

Mutisya (2010) highlighted participatory measures like team-work and a high participation as factors that show the growth in a firms performances through discussion of employee's output growth as against their fear of insecurity in organizations in Kenya. Changes in performance may occur as a result involvement which leads to attitudinal changes which leads to higher performance. Changes in behaviors of employees may be achieved where fear of insecurity is tackled. As sometimes in the restructuring process of organizations, schemes of participation are introduced. Employees are forced to act in a manner and not in a change of their attitude which is not proven as a commitment in the enterprise when they are faced with an insecure environment. Most importantly is the degree of influence accorded to employees. A reason for disappointing results is due to the poor inclusion of employee in decision. Workers may express resentment and dissatisfaction when their expectations to having participation have been raised and only dashed out later on. They also show some feeling of been controlled when they are not given listening ears. They turn to feel bad when management uses their ideas even when participation is from the bottom up, and shows not credit to them (Mutisya, 2010).

2.5.3 Effect of Customer Focus on Organizational Performance

Nganga (2010) found that there is a correlation between the act of delivering goods of high quality and profitability to satisfying customers. To the study, satisfying a customer is the level at which the customer is convinced always that a firms products and services met that their needs. According

to Soltani (2005) an organization ought to figure its relationship with customers in other to identify their needs as well as expectation; in other to improvement upon its quality thereby satisfying customers.

The existence of customer's complaints desk the level of use of their feedback determines the level of customer focus of an organization. Since expectations of customers are dynamic, an organization must take up keen interest to monitor the expectations of their customer on each daily basis in other to revise their operations accordance. Customer focus and customer satisfaction are two extensively covered element within TQM. Quality ought to be defined from an external view of expectations of customers, rather than from predetermined internal specifications given the increasing focus on the creation of competitive advantages it is argued (Deming, 2000). Review of empirical literature has shown that relying on the organization's ability to produce products with correct technical specification does not imply quality. Asubonteng *et al*., (1996) stated also that to be competitive, an organization must be able to deal with the changes in preference and needs of customers. Hence it is of much importance that employees in the organization are able to ensure a high level of customer satisfaction.

Ahire and Golhar (1996) argued out the support of SMEs to have a high degree of focus from customer as they concluded by stating that SMEs may be stronger as a result of nearness and good relationships that exists with its customers. When creating and sustaining a customer-oriented organization, it is a necessity that both current as well as future needs of the customers are understood and met. This calls for new approaches, techniques and systems by allowing customers have access to contacting the organization to make inquiries on their desired product as well as information on any related items. To fully incorporate this information and effect whatsoever

changes, it is of utmost importance to understand preferences of customers as well as having an indebt knowledge of an advantage (Nganga, 2010).

2.6 IMPLEMENTING TOTAL QUALITY MANAGEMENT

For organizational change to be managed effectively when a new management approach is being introduced, the process of implementation must be examined critically. All activities of an organization towards the acceptance management, and use of a novelty such as TQM is referred to as Implementation (Laudon & Laudon, 1998). The pivot that ensures a complete change process is the top management and is responsible for ensuring that all members involved agree to and accept the changes that occurs as a result of the new approach. Top management officials are required to provide leadership skills that will enable them meet the quality objectives of their organization as far as going by this TQM deployment model. Their responsibility is to formulate clear objectives and as well as expectations for performance into the organization's processes. The driver of quality excellence should be strategic planning within the whole organization and needs to take into consideration factors such as new and future business opportunities, customer requirements, technological advancement and development, expectations within society, emerging legal and regulatory requirements, and strategic moves by other actors and competitors. In the formulation of plans, strategies, and resource allocation, these influences need to be carefully considered.

Total commitment, training, skills and employee participation are factors to consider when meeting the organizations performance and quality goals. Employees that have a direct link with customers require skill of listening to their clients, in emerging and new technology workers require a specific skills, and finally there is the need to have a good understanding on how drive continuous improvement efforts using data. The designing and managing of suitable systems of

work , identifying and rewarding of new technologies, training and competency development approaches coupled with a safe, healthy, and an interesting work setting. Key issue in such areas involves the combination of practices of human resources and orientation of the management of human resources with the strategic direction of the organization and the management of the change process.

The designing of the processes to design, manufacture and delivering of products and services that are up to the requirements of clients, and the day to day controlling so as to conform to the requirements and performance needed is comprises of process management. Activities of process management places lot of emphasis on prevention, learning and organizational culture, and the reason being that the costs involved in rectifying quality issues during the design stage are usually lower compared to those of correcting problems that are identified after the design stage in the product's development. Pivotal to TQM is the emphasis placed on its formation of management processes that encourages changes in culture at the work place. The objective is to swing management and employee's focus to quality assurance by concentrating on core values, norms and beliefs of the organization, and also on styles of leadership which are well-thought-out and aimed at fostering a strong work culture (Tuckman 1991). Modern day organizations rely on various forms of data and information to measure performance and support management of improvement efforts. Highly effective data analysis capabilities are required to gather, and present important information used in making decisions and supporting improvements in operations.

Quality in an organization can be realized on the basis of an effective communication between individuals, across teams and other various sections within an organizational environment. It is therefore important to evaluate the communication styles, and communication design programs that will meet the quality objectives stated in in the strategic plans of the organization. How

communication in an organization is planned and managed has a great impact of determining how set goals for quality improvement will be met by efforts members of the organization. Improving continually includes incremental changes which may either be smiley small and gradual. These improvement efforts could be made undertaken in several ways; delivery of value to the customer through innovative and an improvement in the products and services; elimination or reduction of defects, errors, waste and cost resulting from these; use of all resources in an efficient and productive manner; and reduction of cycle time and response time for such processes as resolution of customer complaints. Finally, quality as the entirety of attributes and characteristic of a product or service that demonstrates it potential to fulfil the given demands, must meet the customer's expectation. A worker does not make his leaders only happy but also has a responsibility to ensure that the customers' needs are met and satisfied. Having an understanding of the needs of customers, both short and long term, and following closely with emerging and changing market trends require strategies and plans for learning and listening to customers, gauging their level of satisfaction with products and services compared to those of competitors. (Evans & Lindsay, 2002).

2.7 THE EFFECTIVENESS OF IMPLEMENTING A QUALITY MANAGEMENT SYSTEM

As incorporated in the significant ISO 9001 standard, a successful execution of a Quality Management System involves viably setting up, operation and audit, and nonstop changing of all level framework of an association. The British Standards Institute (BSI) (2009) has characterized the level to which exercises arranged are recognized and outcomes arranged are accomplished. The expression "viability" is correlated especially to quality administration framework usage, as organizations that receive a QMS must meet their predefined quality prerequisites and

recommended quality destinations with no shortages, keeping in mind the end goal to be believed to have effectively actualized their QMSs.

Notwithstanding, as indicated by Al-Nakeeb et al (1998), the meaning of "adequacy" from BSI seems to misdirect individuals into suspecting that it infers that the viability originates from exclusively meeting the predetermined prerequisites and the recommended quality destinations. Truth be told, it alludes to the viability of the framework in meeting and agreeing to the predefined necessities of the embraced standard. This implies viability in the general sense should mean the two things; the full meeting of an organization's own predefined quality necessities, together with meeting the endorsed quality destinations (Kam and Tang 1997) alluded to in the eight quality administration standards and the components of ISO 9001. Furthermore, Oztas et al (2007) contended that the adequacy of a framework should be judged by how well a development organization works and whether it accomplishes its objectives in meeting client desires.

Late productions on development quality administration feature the essential exercises that needs to be considered in connection to the use of a compelling QMS-ISO 9001. Rumane (2011), indicated that an association must show its capacity in other to meet clients desires and fulfillment, and as well as embracing the procedures. According to Watson and Howarth (2011) in other that ISO 9001 serves as a framework of procedures, with an impactful accentuation on consistence, it is important of an association to enable assessment to the authoritative execution, set up towards a standard and as well as prompting accreditation. Obviously, when a compelled QMS is set up, it guarantees the performance of work by determination throughout the plan and progress stages, assembling and developing, overhauling, and furthermore guaranteeing that customers are happy with the subsequent items and administrations.

Viable usage of a quality administration framework (QMS), and embracing quality esteems or obtaining an abnormal state quality reasoning, irrespective of whether it's ideal of working a QMS-ISO 9001 or applying a TQM approach, in the most aggressive development situations conceivably gives benefits that are required.

2.7.1 Role of managers in implementing TQM

Commitment of Top management is a requirement for successful and effective implementation of TQM (Tuckman 1991). The entirety of the process of quality implementation cannot can planned and controlled easily. However, there can be increased performance of an organization when it anticipates the likeliness of an implementation problem and putting up corrective measures (Laudon & Laudon 2006). According to Garrity (1993) managers reflect on the actions while they work, as often times they do not what is ahead. This behavior is called as reflection in an act and as such makes conflicts that are uncertain, instable, unique, and value conflict considerably manageable. There is the need for top management to appreciate the need of process through the process of setting objectives, taking of actions, results learning, making corrections, as well as repeating it over regularly. A mental, strategic and spiritual change in the organization which occurs through the formulation of a long-range vision for the development of the organization is an art of visionary leadership (Zhang 2000).

It is important of managers to identify points of leverages. This leverage points makeup the comparatively minor number of changes in policy that can bring about intended impact throughout a system (Garrity 1993). A policy of TQM can be touted as a comparative advantage by top management organizations in projecting the organization into the future. It is assumed that the principles and practices of TQM are essential to improving the human resource and organization hence contributing to improvement in the performance of the organization. Managers must finally

direct the organization in its entirety to the achievement of the vision. On the assumption that the commitment of top management exists, the step to take next will be for the identification of key points of the set vision and implementation of the TQM approach to be identified. Hereafter, this needs to be communicated, introduced and developed and the workforce trained (Addey 2001).

The active and dedicated involvement and participation of managers during the design and application of TQM offer an opportunity for them to mould and shape the QMS according to their priorities and requirements of the organization, and also to positively influence the outcome. Employees should be engaged by managers during the design and implementation of TQM by virtue of the fact that they are more prone to embrace positively the system to be implemented if they have been involved in and have actively participated in the change process. Tapping into employees' knowledge and expertise and incorporating these lead to better solutions (Laudon & Laudon, 2006). At the planning stage, stakeholders who are key should be identified and a plan devised for their involvement. Identified stakeholders would have previously been involved in the development of the TQM vision in most cases. This involvement at this stage however, should allow for review and expansion to bring on board others who will be directly affected and/or have a one role or another to play in the implementation. Theoretically, everyone in the organization should be included and involved in the TQM implementation. As result, it is requested of managers from each section and department to pay attention to the views and involvement of everyone. It is vital to ensure involvement across all levels of the organization so that any likely problems are discussed and addressed prior to the implementation. Managers must provide directions and guidance on the vision of the future, work priorities to which to work according, work limit and boundaries, understanding of customer needs and product and service quality expected and required. Senge in Garrity (1993) posits managers should make the work place an environment

that fosters learning, within which lessons and experiences can be shared and skills transferred more efficiently as compared to the traditional authoritarian organization. Change is implemented, mainly to bring about a certain level of ownership needed for success with change implementation. (Addey 2001).

Consideration must be given to training alternatives to enable the designing of approaches to TQM. The options and resources that are available for providing intensive support once the TQM has been launched will be investigated by this planning. To satisfy the change objectives and implement the chance policy, the implementation phase is basically involved with developing the change in line with the change plan. Throughout the phase to support, involved review and test the implementation of TQM the stakeholders and trainers will be trained. It will be appropriate to seek feedback from users and hold a lesson learned review after a suitable period of usage, so that the process of development improvements can be found, accepted and tackle. Through this way improvement opportunities of TQM could be established. To direct the success of change feedback of user can be used, through the provision of a forum to deliberate on further development opportunities and assess good practices with implementation experience (Addey 2001).

From the TQM rollout model, the rollout of TQM in an organization behoves on management the responsibility to become leaders. With this as a cardinal guide, the expected roles which managers are expected to fulfill to rollout TQM is to motivate and inspire the employees and ensure engagement and participation, competency and development, creativity and innovation; developing of effective and clear strategies, that includes the support and plans for realizing the objectives and mission; to identify and enumerate the important success factors which have to be prioritized for the set objectives and mission of the organization to be met; to outline the organization's strategies, objectives and processes which will necessitate a review of the

organizational structure; to interact with and get close up to all the members of the organization to energize, empower, encourage and trust them to insure cross level employee participation; to develop effective communication strategies that will encourage and ensure good communication to all stakeholders, including suppliers and customers; and to use rewards and recognition to show appreciation and celebrate employees` achievements and contributions (Moura & Kanji 2003).

Finally, TQM rollout calls for cross-sectional training and education in problem solving skills for all members of the organization, groups, competency development of employee, and mentoring and coaching of manager. Within the existing culture of the organization, the implementation of TQM as a strategy must cut across and become inculcated. Examples of winning strategy with a chance to succeed may include the efforts at common progress and advancement, trust and communication improvement, and concentrating on the common goal (Garrity 1993).

2.8 BARRIERS TO IMPLEMENTING TOTAL QUALITY MANAGEMENT SYSTEMS

The common contributing factor to TQM failure is the non-existence of support and commitment of top management. This demotivates other levels of management and members of an organization to support the process (Soltani et al. 2005). Additionally, to be effective with TQM implementation, all the changes in work culture and processes and any realignment of organization the related to the adoption and implementation of TQM hinge heavily on the backing of management (Laudon & Laudon 2006). Inadequacy of knowledge on TQM practices also result in resistance from employees caused by incapability to involve employees to be aware of the reasons for the TQM implementation, its importance and the merits to both the organization and customers. Poor or inadequate training results in employees who are incapable of effecting the desired changes and would also be a contributory factor in the resistance of employees to change, and ultimately TQM failure (Soltani et al. 2005).

Additionally, a lack of or non-availability of required resources, absence of a suitable performance management system to continuously monitor the TQM process are also barriers to TQM success. If the budget for the implementation is poorly prepared, it will lead to insufficient funds availability for activities such as training and documentation (Bikson in Laudon & Laudon 2006). Glitches in communication between top management and employees may make employees unaware of the importance of their roles in the success of implementing changes. There is the need for cross level communication by employees of different functions and locations to collaborate and solve current problems, avert new problems from coming up and implementing change (Anantharaman et al. 2001). Service design which gives a perception of an ogranization's quality plans and abilities, empowers the organization to meet the customer's expectations and needs could also be compromised by poor management systems. This can inhibit organizational performance (Anantharaman et al.,2001). Other barriers include risk avoidance and not making radical changes, thus organizations tend to remain or become more committed to the *status quo* (Dalgleish in Soltani et al.,2005). In managing risk, the first step involves the identification of the nature and risk level to be encountered in TQM implementation. Management can then adopt a risk management approach, where all processes are planned and executed according to the level of risk. TQM strategies are not a on fit all solution that is recommended to be used in every scenario, but it must implementation must be done with absolute clarity extent to which the context is characterized by doubt, none repetitive, and or unpredictability (Sitkin, Sutcliffe, and Schroeder, 1994). The failure or success of quality management efforts may have more to do with organization related influences as mentioned above, principally the degree to which initiatives are rolled out in a strategic and planned manner with ongoing management assurance, than with sector factors

(Marchington et al., 1998). The subsequent factors are normally associated with TQM failures (Soltani et al.,2005). These includes:

(i) Poor attitudes of leading stakeholders:

(ii) Unavailability of skilled labor :

(iii) Scarcity of resources:

(iv) Poor employee participation:

(v) Poor leadership:

(vi) Making room for employees to the responsibility of quality:

(vii) Resistance of employees:

(viii) Top management low commitment:

(ix) Inadequate measurement of integrated performance:

(x) Poor TQM practices knowledge:

(xi) Poor continual TQM practices monitoring:

With the challenges of innovation and implementation, it is not startling to find a very high rate of failure among organizations' application of TQM process reengineering, which characteristically require wide-ranging organizational change, and which may involve substituting old technology and systems that are extremely rooted in many interconnected organizational processes. A number of studies have indicated that 70 percent of all organization process reengineering initiatives fail to deliver promised benefits (Laudon & Laudon 2006). Similarly, a high proportion of organizations fail to completely implement or to meet the goals of their anticipated mission. In many organizations reorganization have been derailed by poor implementation and change management practices that did not address employee's concerns about change. Dealing with distress and anxiety throughout the organization; overcoming struggle by key managers; altering

job functions, career tracks, and employment practices; and managing training have posed greater threats to reorganization than the difficulties organizations faced envisaging and designing breakthrough changes to organization processes (Laudon & Laudon, 2006).

2.9 BENEFITS OF TOTAL QUALITY MANAGEMENT IN ORGANIZATIONS

The application of Total Quality Management brings forth all-round benefits and makes the organization more competitive. In the new business environment marked by demolition of barriers and free flow of information and products, organizations retain their competitive advantage by reducing prices, improving existing products and innovating new products. TQM is a business strategy that allows organizations to achieve all this and much more. Total Quality Management demolishes the myth that increased quality results in increased costs and decreased productivity. TQM proves that quality is the key to decreased costs, and better productivity and positions quality as a critical component of strategic business advantage Lewis *et al.,* (2006). Lewis also outline the following benefits of TQM;

(i) Stronger position to compete:

(ii) Adapting to change:

(iii) Increased in productivity:

(iv) Market image increase:

(v) Defects and waste elimination:

(vi) Lower costs and with better management of cost:

(vii) Increase in profitability:

(viii) Improvement in the focus and satisfaction of customer:

(ix) Increase in the loyalty and retention of customers:

(x) Increase in job security:

(xi) Employee morale improvement:

(xii) Shareholder and stakeholder value enhancement:

(xiii) Improved processes of innovation:

2.10 EMPIRICAL REVIEW OF FROM QUALITY MANAGEMENT EXPERTS

Based on four excellent models of TQM awards, Abdullah *et al.,* (2008) categorized practices of TQM into two categories: soft TQM practices and hard TQM factors. They maintained that the soft practices play much more important role on the implementation and results of TQM. Soft practices are: leadership, organizational learning, teamwork, process management, training, communication.

Lewis *et al.,* (2006) studied TQM factors in the criteria of ISO 9001:2000 certification. Based on deeper analysis applied on data gathered from eight countries, they pointed out 12 practices to be the most critical practices for TQM implementation and success. Those practices are: quality data and reporting, customer satisfaction, human resource utilization, management of process control, training and education, management commitment, continuous improvement, leadership, strategic quality planning, performance measurement, customer focus, and contact with suppliers and professional associates.

TQM has an positive results and outcomes on organization performance and operation (Zakuan *et al.,* 2012; Abdullah *et al.,* 2008; Kaynak 2003; Samson and Terziovski 1999), especially in-service organizations. Based on the literature review, trends of TQM rollout show that organizations would be subject to one of two main categories: those implementing TQM and those out of business market (Hoang *et al.,* 2010). Hoang and his colleagues further argue that large firms with TQM implementation developed more innovations and gained higher competitive level compared to smaller firms in Asian region. They also found that firms using TQM systems realized better

innovations and higher market share. TQM has significant positive impact on organizational performance (Zakuan *et al.,* 2012). Their results showed that organizations winner of MBNQA have developed and achieved high financial performance.

A study by Ahmad *et al.,* (2008) sort to look out for the different approaches of management that exist. The outcome however indicated improvement of quality, the resources required provision and exhibition of committed attitude to perfect quality. Applying the different methods of analyzing, the result showed the differences that exist between the organizations indicating their commitment and practices between them. Respondents of the first company indicated a positive statement on their top management. High level management in ISO 9001:2008 maintenance and TQM system were outcomes underscore as important as important role (Ahmad *et al.,* 2008).

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 INTRODUCTION

Chapter two reviewed the literature on the theories and concepts of total quality management practices. Chapter three describes the methodology aspect of the study. This chapter highlights how the sampling size, sampling population and data collection and analysis method were determined. In the same chapter, the research strategies, techniques, design and methods are also discussed.

3.2 RESEARCH STRATEGY

A research strategy helps in the enquiry of study objectives and approaches that can be used are Quantitative and Qualitative. The study adopted the quantitative research approach where structured questionnaires were administered by the researcher to manufacturing companies in the Kumasi for data collection. The two main strategies to research are discussed below.

3.2.1 Quantitative Research

As posited by Creswell (2013), a quantitative approach to research is that one where investigator mainly uses positivist claims for developing knowledge, engages various strategies of investigation (example; experiments and surveys), and assembles data on predetermined instruments that yield statistical data. It is objective in nature and the common technique used for collecting data is the use of questionnaires hence its adoption in this study. This approach was adopted because of it enables a quick analysis of data using software when the timeframe for the conduct of the study was taken into consideration.

3.2.2 Qualitative Research

A qualitative approach to research on the other hand is where the researcher often gathers knowledge based principally on constructivist perspectives, advocacy/participatory perspectives or both (Creswell, 2013). The researcher basically collects unrestricted data for developing themes. It makes good use of narratives and case study.

The major difference between quantitative and qualitative research methods is in their flexibility (quantitative methods are inflexible) (Mack *et al.*, 2005). The use of methods such as surveys and questionnaires in quantitative research, for example, makes use of identical questions in the same order to all participants. Response categories are "closed-ended" or fixed. But it allows for comparison of responses across participants. Hence the study adopting the quantitative approach.

3.3. POPULATION

According to the Merriam-Webster (2017), a population can be said to be 'a group of individual persons, objects, or items from which samples are taken for statistical measurement'. Study was conducted to evaluate the total quality management practices in manufacturing companies in Kumasi and as such, study population included purchasing officers, maintenance technicians, and operators, production managers, leading hands, factory hands and supervisors in selected manufacturing companies in Kumasi-Ghana. Contributing to about 9% to GDP, the manufacturing sector though not strong as it should be continues to play a respectable role in the economy in terms of importance. Aluminum smelting, agro food processing, oil refining and cement are Ghana's most important manufacturing industries. Beverages, textiles, apparel, glass, paints, plastics, chemicals and pharmaceuticals, and the processing of metals and wood products examples of other industries. A survey conducted by GSS indicated that the manufacturing sectors provides employment to an estimated workforce of over 437,316 people (GSS Integrated Business

Establishment Survey, 2015). Statistics of manufacturing industry indicated to a range of about 25,000 firms are registered with more than 80% of them been small size enterprises having less than 50 employees. With respect to the above it is estimated that the Ashanti Region has about 10% of all enterprises are located within making up to a tune of 2,500 enterprises (National Communication Corporation Limited for UNESCO Annual Report 2009/2010). In Kumasi, 352 enterprises were found which constituted the population of this studies (National Communication Corporation Limited for UNESCO Annual Report 2009/2010). This location was however selected due to proximity to data thus making it easier for the researcher to retrieve information.

3.4 SAMPLE SIZE

The population represents a large number or the total group and there is the need for a segment to be selected out of the total. According to Miaoulis and Michener (1976), as cited by Israel (1992), aside the basic factors that influence a sample size which is basically the purpose of the study and population size, other three main conditions generally have to be considered in other to determine the appropriate sample size. These three include; the level of precision, confidence or risk, and the degree of variability. The level of precision can be termed as the sample error and it is usually expressed in percentage.

Yamane (1967) provides a simplified formula to calculate sample sizes (Israel, 1992). The formula was used for calculating the sample sizes, where a 95% confidence level and P = 0.5 are assumed for the equation;

$$n = \frac{N}{1+N(e)^2}$$

Where n is the sample size, N is the population size, and e is the level of precision.

Table 3.1 Sample Sizes for ±5%, ±7% and ±10% Precision Levels *where Confidence Level is 95% and P=0.5*

Size of Population	Size of Population Sample Size (n) for Precision (e) of:		
	±10%	**±7%**	**±5%**
450	82	140	212
425	82	138	207
400	81	135	201
375	80	132	194
350	78	129	187
325	77	125	180
300	76	121	172
275	74	117	163
250	72	112	154
225	70	107	144
200	67	101	134
175	64	94	122
150	61	86	110
125	56	78	96
100	51	67	81

Source: Yamane (1967)

$$n = \frac{352}{1 + 352\ (0.08)^2}$$

$$n = 77.88$$

Using the Yamane formula, a sample size of 78 enterprises was used. Out of the 78 enterprises, 36 of them were randomly and purposively selected due to proximity (within 15km radius from the center of Kumasi) and ease of reach. Four questionnaires were distributed to the respondents thus purchasing officers, maintenance technicians, and operators, production managers, leading hands, factory hands and supervisors at a 95% level of confidence. In all 144 questionnaires were sent out these respondents for their responses on TQM.

3.5 SAMPLING TECHNIQUE

Sampling procedures or techniques enlighten on how the segment of the population was selected. Selection is done based on defined procedures. Probability sampling technique was adopted in this study. In probability sampling, each individual has a probability of being selected. That is selection is governed by chance alone. It allows individuals to be chosen randomly. Simple Random sampling technique is the method of drawing a part of population or universe with the aim of giving equal chances of people to be selected. Thus this type of sampling provides to all target population an equal chance to be selected. According to Reid and Boore (1991) randomization is effective in creating equivalent representative groups that are essentially the same on all relevant variables thought of by the researcher. Hence the study adopted the simple random technique in getting the responses from the various manufacturing companies used for the study.

3.6 DATA COLLECTION AND INSTRUMENTATION

3.6.1 Questionnaire Design

Questionnaires as depicted by Polgar and Thomas (2005); Saunders et al., (2000); Fellows and Liu (2003) are an economical way of gathering the needed data from a possibly large pool of respondents. A data collecting instrument that has series of questions put down for answers to be provided from respondents is termed a questionnaire (Sekaran, 1990). In making up questions to ensure that the answers from respondents would provide would be empirical much concern and consideration was given.

The questionnaire was the primary data collection tool used in this study and was designed to draw up the essential information from the respondents. It was designed in accordance to the objectives of this study with reference to a comprehensive literature review that was conducted on the topic. The questionnaire was developed in order to accomplish the aim of this study. It was divided into two parts; Part A (Section A) and Part B (Sections B, C and D). The purpose of the questionnaire was to find out from respondents their views on 'the challenges of implementing Total Quality Management Practices among Manufacturing Companies in Kumasi'. Questions asked included information on respondents (Part A), existing total quality management practices at the manufacturing firms, challenges to implementation of total quality management practices among Manufacturing Companies in Kumasi and identify strategies to avert the difficulties encountered in the implementation of TQM practices among Manufacturing Companies in Kumasi. The Likert scale with scores ranging from 1-5 was used. This was used because the data is ordinal where **[1- Not often; 2- Less often; 3- Neutral; 4- Often; 5-Very often.**] for the Challenges and **[1= not significant, 2= less significant, 3= averagely significant 4= significant, 5= very significant**] for the Strategies.

3.6.2 Instrument Administration

Questionnaires were self-administered by hand to the respondents for adequate responses.

3.7 DATA PREPARATION AND STATISTICAL TOOLS INTENDED FOR THE ANALYSIS

The questionnaires distributed were collected from the respondents and entered into Statistical Packages for Social Sciences (SPSS) for the analysis. The findings from the analysis were presented in a form of series of numbers, charts and tables. The two statistical softwares used in the analysis are Microsoft Office Excel 2016 and Statistical Packages for Social Sciences (SPSS).

Descriptive statistics was used to analyze the background information on the data collected on the respondents. The Relative Importance Index (RII) as well as mean score were used for the ranking. The Relative Importance Index (RII) was used to rank the identified variables where, **W** represents the weighting given to each cause by respondents, ranging from 1 to 5, **S** represents the highest weight (i.e. 5 in this study) and N represents the total number of samples. Thus, the statistical tools were descriptive statistics, mean score ranking and Relative Importance Index (RII) and presentations were done by using Microsoft Excel 2016. The results following the analysis provided the basis for the discussion of the results.

3.8 CHAPTER SUMMARY

In summary, this chapter covers the methods adopted to conduct this study. A research strategy was selected (quantitative approach). The sample size and the technique of sampling for the study were presented based on a defined population of 36 manufacturing firms and 144 questionnaires distributed to respondents in the personnel of purchasing officers, maintenance technicians, operators, production managers, leading hands, factory hands and supervisors. Questionnaire as

the primary data collection tool was used for the study. Which was however self-administered. This concluding part of the gives bit of discussion of the data preparation and tools used for analysis for the study. From this chapter, the next chapter will discuss and analysis the results.

CHAPTER FOUR

DATA ANALYSIS AND DISCUSSIONS OF RESULTS

4.1 INTRODUCTION

This chapter specifically deals what data is collected and the means by which the collected is analyzed to yield a thought. It serves the basis for which conclusions and recommendations are drawn. The analysis on the one data collected from the hundred (100) respondents (Purchasing Officer, Maintenance Technicians, Operators, Production Manager, Leading Hand, Factory Hand and Supervisor) operating in manufacturing companies in the Kumasi metropolis is the focus of the chapter.

The objectives to this research is the pivot of the analysis which are; to identify TQM practices implemented in manufacturing companies in Kumasi, to identify key obstacles to the implementation of TQM in manufacturing companies in Kumasi and to identify strategies to avert the difficulties encountered in the implementation of TQM practices among manufacturing firms in Kumasi. The researcher made use of Microsoft Excel vs 2016 and SPSS vs 23 for the data presentation's organization, analysis and description. The statistical tools used for the analysis were the use of Frequencies, Standard Deviation, Mean score and Relative Importance Index (RII) analysis.

4.1.1 Survey Responses

Out of the total of One hundred and forty-four (144) questionnaires that were distributed, One hundred (100) were retrieved representing a high rate of response rate of 70% from respondents such as Purchasing Officer, Maintenance Technicians, Operators, Production Managers as well as Leading Hands all in manufacturing firms in the Kumasi metropolis. This is was possible due to

research effort by personal distribution and the follow-ups which were done consistently to retrieve the questionnaires.

4.2 DESCRIPTIVE ANALYSIS OF DEMOGRAPHIC DATA

Data included in the analysis of the demography were gender of respondents, category of personnel, highest educational background, length of operation in the manufacturing sector, final product cost exceeded the initial budget among others.

4.2.1 Gender of Respondents

According to the presented results in Table 4.1 below, 93% of the respondents were male thus 93 in number whiles females represented 7%. The feminine representation is an indication of low female employment in the manufacturing firms in Kumasi as the industry is seen as a male dominated one.

Table 4.1: Gender of Respondents

Gender	Frequency	Percent	Cumulative Percent
Female	7	7.0	7.0
Male	93	93.0	100.0
Total	100	100	

Source: Field survey, 2018

4.2.2 Category of Personnel

To identify the category of participants, questionnaires were distributed to respondents to answer. The information retrieved from this part will indicate its validity.

Table 4.2 below illustrates the positions of the respondents in the firm.

Table 4.2: Category of personnel

Category	Frequency	Percent	Cumulative Percent
Other	1	1.0	1.0
Purchasing Officer	9	9.0	10.0
Maintenance Technicians	10	10.0	20.0
Operators	16	16.0	36.0
Production Manager	2	2.0	38.0
Leading Hand	4	4.0	42.0
Factory Hand	49	49.0	91.0
Supervisor	9	9.0	100.0
Total	100	100.0	

Source: Field survey, 2018

From Table 4.2 above, 49(49%) respondents happened to fall in the category of factory hands. This category had the highest number of respondent as they basically conducted the actual activities on the site. Followed was 16 (16%) operators, 10(10%) maintenance technicians, 9(9%) purchasing officers and supervisors. Other category of respondents included leading hands and production manager which have 4(4%) and 2(2%) respondents respectively.

4.2.3 Highest educational background

Table 4.3 shows the educational background of respondents. 55 (55%) were holding Certificate or its equivalent thus either Senior Secondary School Certificate or Junior Secondary School Certificate. 36 (36%) were diploma or professional certificate holders. 8 (8%) were graduates with Bachelors degree. Finally, 1 (1 %) were graduates from the postgraduate or Masters degree. This indicates that manufacturing companies are doing well to employ skilled labour, nonetheless many workers exist that are certificate holders, which usually breeds controversies with regards to communication plan arrangement normally culminating in conflicts.

Table 4.3: Background of education

Educational level	Frequency	Percent	Cumulative Percent
Masters/ Postgraduate Degree	1	1.0	1.0
Bachelor's Degree	8	8.0	9.0
Diploma/Professional Certificate	36	36.0	45.0
Certificate	55	55	100.0
Total	100	100.0	

Source: Field survey, 2018

4.2.4 Length of service in the manufacturing industry

Table 4.4 shows the length of service of respondents in the manufacturing industry. 65 (65%) of the respondents had worked for less than 5 years. 29(29%) had worked in the manufacturing sector for 5-10 years. 6 (6%) had worked for 11- 20 years. Surprisingly, none of the respondents had worked for over 20 years. The majority of the respondents thus 65 had worked for less than 5 years. This indicates that most of the workers had limited working experience in the manufacturing sector.

Table 4.4: Length of service in the manufacturing sector

Service Length	Frequency	Percent	Cumulative Percent
Above 20 years	0	0.0	0.0
11-20 years	6	6.0	6.0
5-10 years	29	29.0	35.0
less than 5 years	65	65.0	100.0
Total	100	100.0	

Source: Field survey, 2018

4.2.5 Products cost in excess of the initial budget

Respondents were asked how often they witnessed the cost of final products exceeded the initial budget. This was included in the questionnaire as often cost was related to quality of a product. The responses can be seen in the Table 4.5 below:

Table 4.5: Products cost in excess of the initial budget

Excess over initial Budget	Frequency	Percent	Cumulative Percent
Very often	0	0.0	0.0
Often	0	0.0	0.0
Never	70	70.0	70.0
Not Often	30	30.0	100.0
Total	100	100.0	

Source: Field survey, 2018

From the Table 4.5 above, 70 (70%) of the respondents had never experienced their final products going over its initial budget. 30 respondents on the other hand had occasionally seen product cost exceeding initial budget but not frequent. None of the respondents had witnessed frequent product cost exceeding the initial budget.

4.2.6 Awareness or knowledge of Total Quality Management Practices

Respondents were asked of their awareness or knowledge of **total quality management practices** in the manufacturing industry. Table 4.6 and Figure 4.1 below depicts the responses the respondents gave. Out of the total of 100 responses, 12 respondents representing 12% were much aware or had adequate knowledge of the existence of total quality management practices in the manufacturing industry. 31 responded that they had fairly adequate knowledge of total quality management practices in the manufacturing industry. Responded "No" were 57 respondents

representing 57%. This implies that most of the respondents in the manufacturing sector had limited knowledge of total quality management practices and its associated practices.

Table 4.6: Adequate knowledge of total quality management practices

Awareness	Frequency	Percent	Cumulative Percent
Somehow	31	31.0	31.0
No	57	57.0	88.0
Yes	12	12.0	100.0
Total	100	100.0	

Source: Field survey, 2018

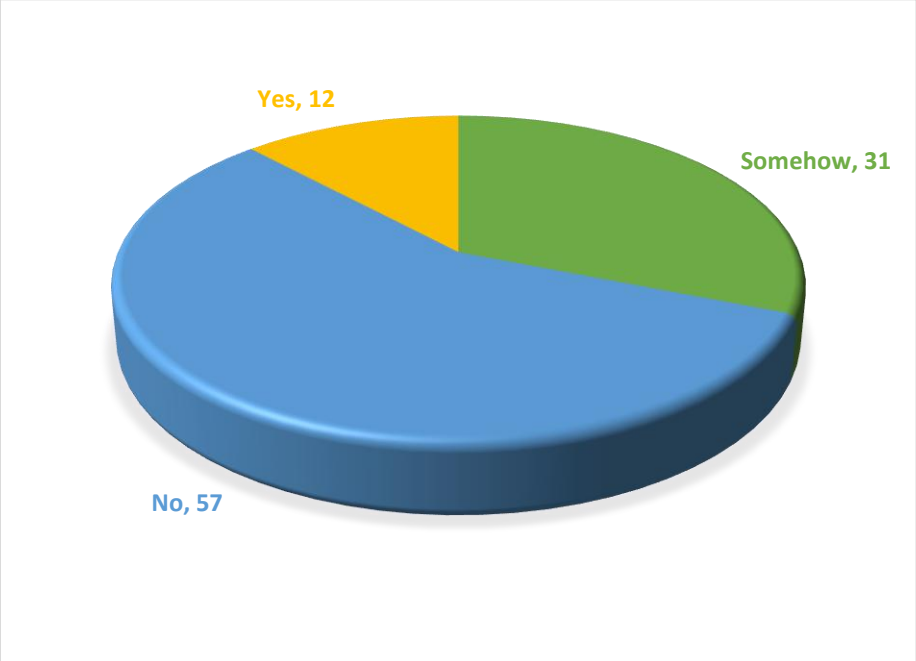

Figure 4.1: Level of Awareness.

Source: Field Survey, 2018

4.3 TOTAL QUALITY MANAGEMENT (TQM) PRACTICES

To explore the TQM Practices embarked on in the manufacturing industry, various literatures on the topic was thoroughly reviewed so as to come out with prominent practices available or in existence. After studies were made, ten (10) practices were identified. These activities were then presented to respondents in the form of questionnaires form them to rank. The questionnaires were answered by respondents who have the awareness and familiarity of the survey. This was done on a Likert scale 1-5; ***1= Not well; 5 = Very well.***

The TQM Practices were subjected to Relative Importance Index for analysing the data collected from the field.

Table 4.7: Total Quality Management Practices

PRACTICES	FREQUENCY OF RANKING					TOTAL	∑W	MEAN	RII	STD. DEV.	RANKING
	1	2	3	4	5						
Customer Focus (CF)	8	17	45	26	4	100	301	3.01	0.602	0.959	1st
Education and Training (ET)	6	20	46	26	2	100	298	2.98	0.596	0.887	2nd
Employee Relation (ER)	8	19	45	26	2	100	295	2.95	0.59	0.925	3rd
Information and Analysis (IA)	6	21	50	21	2	100	292	2.92	0.584	0.861	4th
Continuous Improvement (CI)	10	19	44	26	1	100	289	2.89	0.578	0.942	5th
Top Management Commitment (TMC)	10	22	44	22	2	100	284	2.84	0.568	0.950	6th
Process Management (PM)	14	20	46	19	1	100	273	2.73	0.546	0.962	7th
Management Supplier (MS)	10	30	44	14	2	100	268	2.68	0.536	0.909	8th
Strategic quality management	23	26	37	13	1	100	243	2.43	0.486	1.018	9th
Design quality management	36	15	36	10	3	100	229	2.29	0.458	1.149	10th

Source: Field survey, 2018

After the analysis, the results showed that the most popularly known TQM Practice among respondents within the manufacturing industry is Customer Focus (CF). CF is where the firm considered the needs of the client and performed in accordance with the specifications of the client. The Likert scale used indicated that 3 = moderately well. Looking at the mean value for customer focus, the result acquired was 3.01, meaning the mean value is strongly skewed to 3 signifying a somewhat strong familiarity and awareness of CF as a TQM practice

Followed suit was Education and Training (ET) which was ranked 2nd. Education and Training (ET) had an RII ranking of 0.596 with its mean value 2.98 which is also skewed to 4. In TQM, Education and Training refers to the inculcation of TQM practices into the employees through trainings like on the job, short courses, symposia, toolbox talks and seminars to better equip them for their specific task.

Employee Relation (ER) was ranked 3rd with a mean value of 2.95 and an RII ranking of 0.59. Arawati (2005) posits total employee commitment can only be obtained after fear has been driven from the workplace, when empowerment has occurred, and management has provided the proper environment. All these are hinged on the relationship of management with their employees.

Information and Analysis (IA) with a mean score and RII of 2.92 and 0.584 respectively was ranked 4th by respondents. Fifth ranked was continuous improvement with a mean and RII values of 2.89 and 0.578 respectively. In becoming more competitive and effective at meeting the expectations of client's continual improvement drives an organization to be both analytical and creative (Arawati, 2005)

Top Management Commitment (TMC), Process Management (PM), Management Supplier (MS), Strategic quality management and Design quality management were other TQM Practices that

were also deemed useful and familiar with the respondents with RII ranking of 0.568, 0.546, 0.536, 0.486 and 0.458 respectively.

4.4 RESPONDENTS VIEWS ON BARRIERS TO THE IMPLEMENTATION OF TOAL QUALITY MANAGEMENT PRACTICES IN MANUFACTURING FIRMS

Similarly, various literatures have been studied to arrive at a number of challenges that are associated with the adoption and implementation of Total Quality management practices in the manufacturing sector. Based on respondents' experience, they ranked how often these fourteen (14) challenges are faced with regards TQM within the manufacturing sector. This was done on a Likert scale 1-5; ***1-Not Often; 2-Less Often; 3-Neutral; 4-Often; 5-Very Often***

The collected data on barriers of implementing TQM practices was subjected to mean score and Relative Importance Index as means of analysing.

Table 4.8: Challenges to the Successful Implementation of Total Quality Management Practices in the manufacturing sector

CHALLENGES	FREQUENCY OF RANKING					TOTAL	∑W	MEAN	RII	STD. DEV	RANKING
	1	2	3	4	5						
Lack of training	1	2	12	7	78	100	459	4.59	0.918	0.854	1st
Ineffective internal communication between management and employees	4	7	20	20	49	100	403	4.03	0.806	1.159	2nd
Employee resistance	3	6	25	29	37	100	391	3.91	0.782	1.065	3rd
Lack of strong leadership	5	7	29	27	32	100	374	3.74	0.748	1.134	4th
Poor management systems	4	7	29	40	20	100	365	3.65	0.73	1.009	5th
Lack of enough knowledge of the TQM practices	2	8	33	39	18	100	363	3.63	0.726	0.939	6th
Low engagement of employees	1	9	36	35	19	100	362	3.62	0.724	0.930	7th
Limited resources	1	13	33	29	24	100	362	3.62	0.724	1.023	8th
Skills shortage/lack of qualified personnel	2	8	39	32	19	100	358	3.58	0.716	0.955	9th
Lack of continuous monitoring of the TQM process	2	9	35	38	16	100	357	3.57	0.714	0.935	10th
Lack of integrated performance measurement	2	17	36	24	21	100	345	3.45	0.69	1.067	11th
Convincing staff to take ownership of quality	2	11	43	33	11	100	340	3.4	0.68	0.899	12th
Lack of drive by senior management and middle management commitment and lack of skills by chief executives	6	26	24	24	20	100	326	3.26	0.652	1.220	13th
Low commitment of top management	13	40	31	10	6	100	256	2.56	0.512	1.038	14th

Source: Field survey, 2018

According to Table 4.8, respondents were asked to rank the 14 challenges identified from literature that affected the effective implementation of TQM practices within manufacturing industry in Ghana. Prominent as a challenge was lack of training which was ranked first by respondents with a mean value of 4.59 and RII of 0.918. Organizations education and training in skills for problem solving, development of employee, coaching management, and group dynamics are requirements for the implementation of TQM. Within the culture of organizations, the implementation of TQM as a strategy must penetrate and become systematized. This is in agreement with Soltani et al. (2005) that there will be failure in implementing TQM when inadequate training of employees making them incapable to the effecting the required changes, hence contributing to their resistance to any program of change. According to Garrity (1993), it is believed that strategies that gives chance to success include the mutuality between growth and development, improvement in trust and communication, and the focus on the common goal.

The second ranked challenge was ineffective internal communication between management and employees. Employee's unawareness of their role in the pending changes may occur as a result of poor internal communication between management and employees. This challenge had a mean score and RII of 4.03 and 0.806 respectively which shows respondents agreement to how very often this is encountered in the implementation of TQM practices in the manufacturing firms in Kumasi. This agrees with Anantharaman et al. (2001) that in other to solve problems, initiate new ideas or implement a change there must be effective communication across all levels, functions and locations of the organization.

Employee resistance was ranked third as a challenge impeding the effective implementation of TQM practices in the manufacturing firms. The effect of not engaging employees so they appreciate quality management as well as it benefits to both organizations and customer's results

is the resistance of employee (Laudon & Laudon 2006). With a mean score of 3.91 and RII of 0.782, respondents' ranked employee resistance as a challenge as far as TQM practices are concerned. Respondents believed that with the opposition of employees to their employer's instructions, the practice of TQM becomes very difficult (Soltani et al., 2005).

Followed in the fourth position as ranked by respondents was Lack of strong leadership. This challenge had a mean value and RII of 3.74 and 0.748respectively. Poor backing and commitment of top management officials are common factors that contributes to the failure of TQM. This in turn, demotivates other management levels and employees to support the process (Soltani, Van der Meer & Williams 2005).

Ranked as the fifth challenge was poor management systems. With a mean value of 3.65 and 0.73 as its RII score. Systems that are poorly managed have the tendency to compromise design services as they turn to echo the strategic quality planning ability of the organization which sorts to enable the organization surmount the needs of customer's, their expectations and desires, which will consequently result in an improved performance of the organization (Anantharaman et al., 2001). To avoid taking of risk and radical changes are other factors, thus making an organization remain being more committed to the *status quo* (Dalgleish in Soltani et al., 2005).

Inadequate knowledge on the practices of TQM was a challenge which was ranked sixth and had a mean value of 3.63 as well as an RII of 0.726. According to Soltani et al. (2005), this results in resistance by employee as it does not make room for the engagement of employees to appreciate the need for its introduction.

Low engagement of employees followed suit after been ranked seventh by respondents with a mean score of 3.62 and RII of 0.724 signifying how often it was encountered as a challenge in the practice of TQM in the manufacturing industries.

Limited resources, Skills shortage/lack of qualified personnel, Lack of continuous monitoring of the TQM process, Lack of integrated performance measurement, Convincing staff to take ownership of quality, Senior managements lack of drive and middle management commitment and lack of skills by chief executives and Low commitment of top management were among other challenges ranked by respondents in the order of 8th, 9th, 10th, 11th, 12th , 13th and 14th with respective mean values as 3.62, 3.58, 3.57, 3.45, 3.4, 3.26 and 2.56.

4.5 RESPONDENTS VIEWS ON STRATEGIES TO AVERT THE DIFFICULTIES ENCOUNTERED IN THE IMPLEMENTATION OF TQM PRACTICES AMONG MANUFACTURING COMPANIES IN KUMASI.

Implementing the TQM practices effectively in the Ghanaian manufacturing Industry, certain strategies will have to be put in appropriate places. In all eleven (11) variables were proposed and noted. Respondents were asked to rank the eleven (11) strategies for the effective implementation of TQM practices according to their level of experience through a survey. With the help of the Likert scale 1-5; ***1-Not Significant; 2-Slightly Significant; 3-Moderately Significant; 4- Very Significant; 5- Exceedingly Significant*** this was done.

In analysing the data collected on the proposed strategies for the effective implementation of TQM practices, the mean score and Relative Importance Index were used.

Table 4.9: Strategies to avert the difficulties encountered in the implementation of TQM practices

STRATEGIES	FREQUENCY OF RANKING					TOTAL	∑W	MEAN	RII	RANKING
	1	2	3	4	5					
Adequate training and experience of managers	0	3	8	13	76	100	462	4.62	0.924	1st
Continuous monitoring of the TQM process	0	3	15	13	69	100	448	4.48	0.896	2nd
Strong leadership	1	4	18	38	39	100	410	4.1	0.82	3rd
Management Stability	0	5	24	50	21	100	387	3.87	0.774	4th
Adequate adherence to proven processes	0	4	24	54	18	100	386	3.86	0.772	5th
Clear definition of roles of key members	1	1	31	48	19	100	383	3.83	0.766	6th
Proper project organization structure	2	9	20	44	25	100	381	3.81	0.762	7th
Proper engagement of employees	2	3	28	48	19	100	379	3.79	0.758	8th
Improved team communication	2	1	32	48	17	100	377	3.77	0.754	9th
Proper project feasibility studies	2	6	20	60	12	100	374	3.74	0.748	10th
Realistic schedules for projects completion	0	7	28	53	12	100	370	3.7	0.74	11th

Source: Field survey, 2018

From the above analysis, it is shown that the best strategy for the successful implementation of TQM practices is adequate training and experience of managers. It is the responsibility of the top management to effect changes in process and ensure that all key players included accepts such changes. This strategy had the highest RII of 0.924 which shows an extremely strong strategy to adopt. On the Likert scale used was the indication of 5 thus; Extremely Significant. Looking at the mean value for adequate training and experience of managers, the result acquired was 4.62, meaning the mean value is skewed to 5 signifying extremely significant strategy. This is in agreement with (Tuckman 1991) that a fully committed, well trained, and involved workforce are requirements needed to meeting the organizations quality and performance goals. Where leading employees will have to possess the skill of listening to their customers, as well as developing their skills and abilities in working in environments that are quality goal oriented.

Ranked second was continuous monitoring of the TQM process. Continuous monitoring of the TQM process had a mean value of 4.48 which is skewed towards 5 on the Likert scale and an RII of 0.896. Respondents were also of the view that the TQM process needed to be monitored since employees tended to relax with no supervisor and hence quality standards seen as dropping.

Strong leadership was ranked third with values of 4.1 and 0.82 as mean score and RII respectively. To drive the organization's quality objectives, the TQM implementation model emphasized the need for all managers, ideally the top management officials to exhibit proper leadership skills. As it is their responsibility to creates clear paths to achieving excellence in their performance. This could be done considering the processes of the organization.

Ranked fourth as a strategy was management stability. This strategy had a mean and RII values as 3.87 and 0.774 respectively. Fully committed, well trained, and involvement of workforce are requirements needed to meeting the organizations quality and performance goals. Where leading

employees will have to possess the skill of listening to their customers, as well as developing their skills and abilities in working in environments that are quality goal oriented. Through the design and management of appropriate work systems; reward and recognition approaches; education and training approaches; and a healthy, safe, and motivating work environment which characterizes stable management of a firm these can be achieved.

Adequate adherence to proven processes was ranked fifth by respondents. This factor was presented with a mean score of 3.86 and an RII value of 0.772. Respondents were of the view that once proven processes were adhered to with regards to TMQ practices, its implementation will be the least of worries for management in these firms.

Clear definition of roles of key members had a mean score and an RII value of 3.83 and 0.766 respectively and was ranked sixth as the strategy for the successful implementation of TQM Practices in the manufacturing firms in Kumasi-Ghana.

Proper project organization structure, Proper engagement of employees, Improved team communication, Proper project feasibility studies and Realistic schedules for projects completion were other strategies which were ranked from 7^{th}, 8^{th}, 9^{th}, 10^{th} and 11^{th} respectively with mean values of 3.4827, 3.4827, 3.4827, 3.4482 and 3.4482 respectively

CHAPTER FIVE

CONCLUSION AND RECOMMENDATIONS

5.1 INTRODUCTION

This research work sought to evaluate Total Quality Management Practices among manufacturing Companies in Kumasi, hence the aim of the study seen in the first chapter. Chapter two which elaborated on the details the literature work of other similar works on TQM practices, its challenges and proposed strategies for the successful implementation of TQM practices in the manufacturing industry. Chapter three offered the methodology adopted for the study. Through Survey questionnaires, data were distributed and retrieved. Chapter four analysed and discussed into details the survey conducted. This chapter presents a synopsis of the findings with respect to the achievement of the research aim and the objectives. The discussion on the limitations of the research is outlined with recommendations made for future studies in the format below:

- Summary of findings;
- Review of the research objectives;
- Contribution to knowledge and industry;
- Recommendations;
- Limitations of the research;

5.2 SUMMARY OF FINDINGS

- A total of one hundred and forty-four (144) questionnaires were administered and one hundred (100) were retrieved representing a high rate of response rate of 70% from Purchasing Officer, Maintenance Technicians, Operators, Production Manager, Leading

Hand, Factory Hand and Supervisor) operating in manufacturing companies in the Kumasi metropolis.

- 93% of the respondents were male thus 93 in number whiles females represented 7%. The feminine representation is an indication of low female employment in the manufacturing firms in Kumasi as the industry is seen as a male dominated one.
- From chapter 4, 55 (55%) were holding Certificate or its equivalent thus either Senior Secondary School Certificate or Junior Secondary School Certificate. 36 (36%) were diploma or professional certificate holders. 8 (8%) were graduates with Bachelors degree. Finally, 1 (1 %) were graduates from the postgraduate or master's degree. This indicates that manufacturing companies are doing well to employ skilled labour, nonetheless many workers exist that are certificate holders, which usually breeds controversies with regards to communication plan arrangement normally culminating in conflicts.
- From Table 4.2 in chapter four, 49(49%) respondents happened to fall in the category of factory hands. This category had the highest number of respondent as they basically conducted the actual activities on the site. Followed was 16 (16%) operators, 10(10%) maintenance technicians, 9(9%) purchasing officers and supervisors. Other category of respondents included leading hands and production manager which have 4(4%) and 2(2%) respondents respectively
- From Table 4.4, 65 (65%) of the respondents had worked for less than 5 years. 29(29%) had worked in the manufacturing sector for 5-10 years. 6 (6%) had worked for 11- 20 years. Surprisingly, none of the respondents had worked for over 20 years. The majority of the respondents thus 65 had worked for less than 5 years. This indicates that most of the workers had limited working experience in the manufacturing sector.

- Out of the total of 100 responses, 12 respondents representing 12% were much aware or had adequate knowledge of the existence of total quality management practices in the manufacturing industry. 31 responded that they had adequate knowledge of total quality management practices in the manufacturing industry. Responded "No" were 57 respondents representing 57%. This implies that most of the respondents in the manufacturing sector had limited knowledge of total quality management practices and its associated practices;
- After the analysis from Table 4.7 thus Total Quality Management Practices, the results showed that the widely known TQM Practice among respondents within the manufacturing industry was Customer Focus (CF). CF is where the firm considered the needs of the client and performed in accordance with the specifications of the client. The Likert scale used indicated that 3 = moderately well. Looking at the mean value for customer focus, the result acquired was 3.01, meaning the mean value is strongly skewed to 3 signifying a somewhat strong familiarity and awareness of CF as a TQM practice;
- According to Table 4.8, prominent as a challenge was lack of training which was ranked first by respondents with a mean value of 4.59 and RII of 0.918. Organizations education and training in skills for problem solving, development of employee, coaching management, and group dynamics are requirements for the implementation of TQM. Within the culture of organizations, the implementation of TQM as a strategy must penetrate and become systematized. This is in agreement with Soltani et al. (2005) that there will be failure in implementing TQM when inadequate training of employees making them incapable to the effecting the required changes, hence contributing to their resistance to any program of change;

- With regards to the proposed strategy for the effective implementation of TQM Practices in the manufacturing sector, eleven (11) variables were identified. The analysis revealed that; to success in implementing TQM practices, the best strategy is adequate training and experience of managers. It is the responsibility of top management officials to ensure all stakeholders accept the changes that are established in an organization. This strategy had the highest RII of 0.924 which shows an extremely strong strategy to adopt. The Likert scale used indicated that 5 = Extremely Significant. Looking at the mean value for adequate training and experience of managers, the result acquired was 4.62, meaning the mean value is skewed to 5 signifying extremely significant strategy.

5.3 REVIEW OF RESEARCH OBJECTIVES

As stated in chapter one of this research, the aim of was to evaluate Total Quality Management Practices among manufacturing Companies in Kumasi. In achieving the aim, three objectives were established. Below is outcome of the stated objectives.

5.3.1 Review of Objective One

The first objective was *to identify TQM practices implemented in manufacturing companies in Kumasi.*

To achieve this objective, respondents were asked of their awareness of total quality management (TQM) practices in the manufacturing sector. Out of the total of 100 responses, 12 respondents representing 12% were much aware or had adequate knowledge of the existence of practices of total quality management in the manufacturing industry. 31 responded that they had adequate knowledge of the practices of total quality management in the manufacturing industry. Responded "No" were 57 respondents representing 57%. This implies that most of the respondents in the

manufacturing sector had limited knowledge of total quality management and its associated practices in the Kumasi Metropolis.

To explore the TQM Practices embarked on in the manufacturing firms in Kumasi, several review of related topic was conducted in other to arrive at most prominent practices available. In all ten (10) were identified. Through the development of questionnaire, respondents provided answers to these (10) practices by ranking according to their level of awareness and familiarity in this survey. The outcome of data collected was analysed using Relative Importance Index. After the analysis from Table 4.7 thus Total Quality Management Practices, the results showed that the widely known TQM Practice among respondents within the manufacturing industry was Customer Focus (CF). CF is where the firm considered the needs of the client and performed in accordance with the specifications of the client. The Likert scale used indicated that 3 = moderately well. Which indicated that respondents are somewhat familiar and aware of CF as a practice of TQM

5.3.2 Review of Second Objective

The second objective was *to identify key obstacles to the implementation of TQM in manufacturing companies in Kumasi.*

Similarly, several literatures were reviewed in relation to the topic of challenges that are associated with adoption and implementation of Total Quality management practices in the manufacturing sector. Based on respondents' experience, they ranked how often fourteen (14) challenges were encountered with regards to TQM within the manufacturing sector according to the level of severity through a survey. Mean score and Relative Importance Index were the tools used for analysing the collected data on the barriers. Prominent as a challenge was lack of training which was ranked first by respondents with a mean value of 4.59 and RII of 0.918. Organizations education and training in skills for problem solving, development of employee, coaching

management, and group dynamics are requirements for the implementation of TQM. Within the culture of organizations, the implementation of TQM as a strategy must penetrate and become systematized. This is in agreement with Soltani et al. (2005) that there will be failure in implementing TQM when inadequate training of employees making them incapable to the effecting the required changes, hence contributing to their resistance to any program of change;

5.3.3 Review of Third Objective

The third objective was *to identify strategies to avert the difficulties encountered in the implementation of TQM practices among manufacturing companies in Kumasi.*

To effectively implement the TQM practices in the Ghanaian manufacturing Industry, certain strategies need to be put in appropriate places. In all eleven (11) variables were proposed and noted. Respondents were asked to rank the eleven (11) strategies for the effective implementation of TQM practices according to their level of experience through a survey. Data collected on the proposed strategies for the effective implementation of TQM practices were analysed using mean score and relative importance index. Best strategy for the successful implementation of TQM practices is adequate training and experience of managers. It is the responsibility of top management officials to ensure all stakeholders accept the changes that are established in an organization. This strategy had the highest RII of 0.924 which shows an extremely strong strategy to adopt. The Likert scale used indicated that 5 = Extremely Significant. Looking at the mean value for adequate training and experience of managers, the result acquired was 4.62, meaning the mean value is skewed to 5 signifying extremely significant strategy.

In conclusion, the research was able to identify Total Quality Management practices, its associated barriers and proposed strategies for successful implementation in the manufacturing firms in Kumasi-Ghana.

5.4 CONTRIBUTION TO KNOWLEDGE AND INDUSTRY

This study has contributed to both knowledge and industry in diverse ways. These are outlined below:

- This research has unearthed the level of awareness of Total Quality Management Practices as seen in the manufacturing industry; and
- The research has brought to light the various challenges associated with the implementation of Total Quality Management practices in the Ghanaian manufacturing industry within the environs of Kumasi based on which proposed strategies/recommendations have been given for adoption.

5.5 RECOMMENDATIONS

There has been a growing need for firms to improve upon the quality of product to meet customer satisfaction. Total Quality Management is therefore one of the concept by which these objectives could be ascertained. Based on the study findings, the researcher derived the following recommendations to help alleviate the challenges inhibiting the implementation of Total Quality Management practices in the Ghanaian manufacturing industry:

Every profit oriented firm should endeavour to restructure their organization to include a Quality Department manned by trained Quality Professionals for proper Quality Management to be practiced;

The Concept of Total Quality Management should be inculcated into the tertiary education curriculum for all disciplines since quality transcends to all other areas.

The study revealed that, lack of proper training was the most challenging critical factors in the implementation of TQM. Education and training have been found to be most important element in

a successful implementation of TQM. There is therefore the need to equip employees with the needed skills and knowledge to handle their various roles during and after the change process, their anxiety of learning and changing would be reduced. The employees (Purchasing Officer, Maintenance Technicians, Operators, Production Managers, Leading Hand and Supervisor) within the manufacturing environment need to be fully acquainted with Total Quality Management practices through Continuous Professional Development (CPD) such as; seminars, refresher courses and workshops. The training programme should aim at creating the quality awareness in the entire firm. Equipping all employees with the requisite skills and knowledge as well as influencing the attitude, values and behaviours of people is essential

5.6 RESEARCH LIMITATION

Although the report managed in the achievement of its objectives, some limitations were evident as:

- Obtaining data on the respondents used for the study due to the strict confidentiality attached to their database. However, the research provided assurance that such information was required for academic purpose and will be used with utmost confidentiality;
- Difficulty in getting respondents to provide information to the research as well as limited time on the part of those obtained due to the fact that some were occupied and has made retrieving the questionnaires difficult.

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APPENDIX

QUESTIONNAIRE DESIGN

TOPIC: AN EVALUATION OF TOTAL QUALITY MANAGEMENT PRACTICES AMONG MANUFACTURING COMPANIES IN KUMASI

INTRODUCTION

I am a student of Kwame Nkrumah University of Science and Technology conducting a study on the topic "**An evaluation of Total Quality Management Practices among Manufacturing Companies in Kumasi**" in partial fulfillment for a Master of Science degree in Project Management. The objectives of the study are:

a. To identify TQM practices implemented in manufacturing companies in Kumasi;
b. To identify key obstacles to the implementation of TQM in manufacturing companies in Kumasi; and
c. To identify strategies to avert the difficulties encountered in the implementation of TQM practices among manufacturing companies in Kumasi.

I will be very grateful if you would complete the attached questionnaire as it will help in this study. The information you provide will be treated with strict confidence and respondents will not in any way be identified.

Yours faithfully,

BAFFOUR – AWUAH ROBERT

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Please kindly respond to the questions by ticking (√) the appropriate box for each item. Please note that all information provided will be strictly confidential.

SECTION A: RESPONDENT PROFILE

1. What is your gender?
    a. Male ( )
    b. Female ( )

2. Which of the following category of personnel best describes you?
    a. Supervisor ( )
    b. Factory hand ( )
    c. Leading hand ( )
    d. Production Manager ( )
    e. Operators ( )
    f. Maintenance technicians ( )
    g. Purchasing Officer ( )
    h. Other (specify)…….

3. What is your highest educational background?
    a. Diploma / Professional Certificate ( )
    b. Bachelor's Degree ( )
    c. Masters / Postgraduate Degree ( )
    d. Certificate ( )

4. How long have you been operating in the manufacturing sector?
    a. Less than 5 years ( )
    b. 5-10 years ( )
    c. 11-20 years ( )
    d. Above 20 years ( )

5. How often have your final product cost exceeded the initial budget?
    a. Very often ( )
    b. Often ( )
    c. Not often ( )
    d. Never ( )

6. Do you have adequate knowledge of total quality management practices?
    a. Yes ( )
    b. No ( )
    c. Somehow ( )

SECTION B: TOTAL QUALITY MANAGEMENT PRACTICES USED IN MANUFACTURING SECTOR.

From available literature, several total quality management practices were identified. Please in your own opinion, indicate the degree of frequencies by ranking on a Likert scale how frequent the following total quality management practices are adopted in the manufacturing sector.

(Kindly tick (√) the appropriate cell for the practices) **[1- Not at all; 2- Rarely; 3- Sometimes; 4- Frequently; 5-Every time.]**

TQM PRACTICES	FREQUENCY				
	1	2	3	4	5
1. Customer Focus (CF)					
2. Education and Training (ET)					
3. Continuous Improvement (CI)					
4. Information and Analysis (IA)					
5. Employee Relation (ER)					
6. Top Management Commitment (TMC)					
7. Process Management (PM)					
8. Management Supplier (MS)					
9. Strategic quality management					
10. Design quality management					
PLEASE STATE AND RANK ANY OTHERS					
11.					
12.					
13.					

SECTION C: BARRIERS TO THE IMPLEMENTATION OF TOAL QUALITY MANAGEMENT PRACTICES IN MANUFACTURING FIRMS.

Below are a number of challenges that are associated with the adoption and implementation of Total Quality management practices in the manufacturing sector. Based on your experience, please rank how often these challenges are faced with regards TQM within the manufacturing sector.

(Please tick the (√) appropriate cell). **[1- Not often; 2- Less often; 3- Neutral; 4- Often; 5-Very often.**]

No.	BARRIERS	RANKING				
		1	2	3	4	5
1.	Lack of drive by senior management and middle management commitment and lack of skills by chief executives					
2.	Skills shortage/lack of qualified personnel					
3.	Limited resources					
4.	Low engagement of employees					
5.	Lack of strong leadership					
6.	Convincing staff to take ownership of quality					
7.	Employee resistance					
8.	Low commitment of top management					
9.	Lack of integrated performance measurement					
10.	Lack of enough knowledge of the TQM practices					
11.	Lack of continuous monitoring of the TQM process					
12.	Poor management systems					
13.	Ineffective internal communication between management and employees					
14.	Lack of training					
PLEASE STATE AND RANK ANY OTHERS						
15.						
16.						

SECTION D: STRATEGIES TO AVERT THE DIFFICULTIES ENCOUNTERED IN THE IMPLEMENTATION OF TQM PRACTICES AMONG MANUFACTURING COMPANIES IN KUMASI.

The following are strategies that can be adopted to avert the difficulties encountered in the implementation of TQM practices among manufacturing companies in Kumasi.

Please use the key **[1- Not significant; 2- Less significant; 3= Moderately significant; 4= Significant; 5= Very significant.]** to rate their significance. Please tick (√) the appropriate cell.

No.	PROPOSED STRATEGIES	DEGREE OF IMPORTANCE				
		1	2	3	4	5
1.	Proper organization structure					
2.	Proper engagement of employees					
3.	Clear definition of roles of key members					
4.	Strong leadership					
5.	Proper feasibility studies					
6.	Management Stability					
7.	Adequate adherence to proven processes					
8.	Improved team communication					
9.	Realistic production schedules					
10.	Adequate training and experience of managers					
11.	Continuous monitoring of the TQM process					
PLEASE STATE AND RANK ANY OTHERS						
12.						
13.						
14.						

Any further comments can kindly be indicated below.

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THANK YOU.