TQM and Modern Marketing in Developing Countries - Theoretical and Conceptual Frameworks

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Abstract

This paper aims to identify and review the related literature on quality, quality management, TQM, productivity and modern marketing in developing countries with a focus on Pakistan. It starts by reviewing the different theories of quality, quality management, TQM and productivity to develop a better understanding of their influence and potential for management activities in developing nations. Then it provides a very brief illustration of modern marketing in developing countries. The overall aim is to identify the variables that might influence quality, quality management, TQM and productivity in such nations.

1. Introduction

1.1 The Concept of Quality

The concept of quality is a complex notion and has been contested in the fields of academia, business and everyday life since it is associated with individual perceptions of value for money, as well as performance, expectations and the appearance of a product (Huff et al., 1996). Quality in business is not limited to a product's physical attributes and performance, but includes the range of products and service-related features, packaged as a whole and presented to the customer for sale. According to Crosby (1980), quality is conformance to specifications or standards. Juran (1974) argued that quality is fitness for purpose. Quality from the consumer's viewpoint is the aspect of a product or service that offers consumer satisfaction and meets anticipated performance (Goetsch and Davis, 2000). Similarly, Zabada et al., (1998) pointed out that in the view of the manufacturer or producer, quality may be defined as satisfactory aspect of a product or service, including meeting specifications and cost reduction.

Although there is no consensus on the definition of quality, several similarities and commonalities can be seen in the foregoing definitions. According to Goetsch and Davis (2000), the common characteristics associated with the definition of quality include the following:

o Quality is an ever-changing state (it is dynamic and subject to regular changes with time, taste and fashion).
o Quality applies to products, services, people, processes and environments.
o Quality entails meeting or exceeding customer expectations.
o Broadly, quality is defined with respect to these positions: transcendent quality (superiority or excellence), value-based quality (quality vis-à-vis price), product-based quality (quantities of product attributes), user-based quality (fitness for intended use), and manufacturing-based quality (conformance to the specifications), these are expanded below:

- o Transcendent definitions offer little practical guidance for managers.
- o Product-based and value-based definitions represent two concepts: price and quality.
- o User-based definition is customer-focused.

o Manufacturing-based definition is internally focused and may cause managers to focus on internal efficiency rather than external effectiveness.

The above characteristics presented by Goetsch and Davis whilst been comprehensive are high level and philosophical therefore whilst helping to provoke consideration of quality characterises more detailed and practical guide are required for managers.

According to Evans and Lindsey (1999), businesses define quality as "meeting or exceeding customer expectations". Quality has many attributes which several writers have shed light on, especially Garvin (1998):

o Performance: the primary operating characteristics of the product.
o Features: the attributes that relate to the "bells and whistles" of a product.
o Reliability: reflects the probability of a product's functioning or failing within a specified period of time.
o Conformance: the degree to which a product's design and its operating characteristics meet pre-established standards.
o Durability: economic and technical long-lasting features of a product.
o Serviceability: the speed of support, level of courtesy, competence, and ease of repair.
o Aesthetics: how a product looks, feels, sounds, tastes or smells (reflection of individual preferences).
o Perceived quality: the measures that attract buying behaviours of customers.

Quality does not end with improving everything that companies do, whether sales, production, legal, accounting or research and development, purchasing, shipping, marketing and human resources (Hertz et al., 1997). Managing quality is a continuous process in business, to ensure total customer satisfaction through developing the quality of manufactured products, processes, people and services. It also includes ensuring that internal and external environments meet or exceed expectations and requirements.

Quality is also concerned with specification standards and cost-effective management, durability and reliability, regular availability and improvement of products in the market. Customers regard quality a shared commitment from management, with a company strategy that advocates achieving distinction in all aspects of products and services and able to satisfy the customer's needs.

1.1.1 Cost of Quality

Quality costs are focused on by management in pursuit of improvement in quality, customer satisfaction, increased market share, and profit enhancement. The main purpose of quality cost considerations is to warn against oncoming dangerous financial situations to the companies. Juran, in his famous quality control handbook (1974), used the analogy of "Gold in the Mine" which means that losses due to avoidable mistakes/defects equal the cost of quality control. Deming (1986: 11) pointed out that low quality means high costs, and further argued that "Defects are not free. Somebody makes them, and gets paid for making them. On the supposition that it costs as much to correct a defect as to make it in the first place, then 42 per cent of his payroll and burden was being spent to make defective items and to repair them". About rework Deming further asserted, "The cost of rework is only part of the cost of poor quality". Hertz et al., (1997) linked the cost of ignoring quality to organizational disaster for the following reasons:

o Management teams spend a lot of time trying to work out what to do to fix whatever went wrong.
o Sales people spend a lot of time placating customers because the job is delayed or because quality was not up to customer expectations.
o Purchasers spend a lot of time ordering emergency supplies to replace those used by the hidden plant because it produces more rework and scrap than the estimator allowed for, and the plant is left short.

Besterfield (1994) saw cost of quality as the costs associated with the non-achievement of product or service quality as specified by the company and its contracts with customers and society. In other words, it is the amount spent in making poor products and services. Harrington (1999) stated that, "whether it is called quality cost or poor quality cost, it is designed to reduce the cost associated with poor quality". According to Bland et al., (1998), the cost of poor quality to a company is the difference between the actual operating cost and what the operating cost would be if there were no failures in its system and no mistakes by its staff.

The cost of poor quality can affect 20% of revenues in manufacturing companies and 35% in service companies (Besterfield, 1994). Gunasekaran et al., (1998) considered the following factors as the "cost of bad quality": calibration, increased maintenance, equipment breakdown, downtime, excess inventory, excess paperwork, waste time in meetings and unproductive discussions with suppliers, dealers, and distributors, and the cost of inspection and measuring the product.

Heizer and Render (1999) present the following definitions of the Prevention Appraisal Failure (PAF) model:

i. Prevention Costs:

Prevention costs are the costs associated with all actions taking place to prevent defects in products or services. These includes the direct and indirect costs related to quality training and education, pilot studies, quality audits, quality circles, quality engineering, process capability analysis, supplier capability surveys, and new product reviews. Prevention costs are used to construct awareness of the quality programme and to stabilize the appraisal and failure costs at a minimum.

ii. Appraisal Costs:

These are the costs associated with measuring and analyzing the product or service quality to certify conformance; they include the inspection cost, manufacturing or process operations, test or audit of purchases, and finished goods or services; as well as all direct and indirect costs spent on various tests and inspections carried out to determine the degree of conformity for products or services.

iii. Failure Costs:

Which Consist of:

(a). Internal Failure Costs are the costs of defects acquired prior to the shipment of the product or service before delivery. They include the net cost of scrap, spoilage, rework and overheads, failure analysis, supplier rework and scrap, re-inspection and re-test, down time due to quality problems, opportunity cost of products classified as seconds or other product downgrades.

(b). External Failure Costs are the costs incurred due to defects discovered after shipment of product or service to the final consumer. These include warranty claim charges, product recalls, customer complaint adjustments, allowances, and product liability, as well as direct and indirect costs such as labour and travel associated with the investigation of customer complaints, warranty field inspection, tests and repairs.

Rao et al., (1996) described prevention and appraisal costs as conformance costs, defined as all those costs associated with products or services delivered according to specification. Both internal and external failure costs are recognized as non-conformance costs.

According to Carr (1992, 1995) many US companies, such as IBM, Xerox, Tennant, Ford, Westinghouse, Pacific Bell, employ the cost of quality approach as an integral part of their quality programme. These companies are flexible in the use of cost of quality definitions, comfortable with cost estimations and realistic in presenting information.

Xerox Company adopted the quality-cost approach to its US sales and marketing group, realizing an outstanding cost of quality savings of up to $53 million in the first year. The quality-cost improvements were applied relatively painlessly. Managers were trained in the importance of cost of quality, and once they began to appreciate this tool Xerox achieved over $200 million of savings in cost of quality over the subsequent four years. Xerox made this approach an integral part of its leadership (Rao et al., 1996). The same approach was adopted by Tennant, who significantly improved its product quality and reduced its total cost of quality. By using the cost of quality tool, Tennant's total cost of quality decreased from 17% of total sales in 1980 to 7.9% in 1986 with a further significant reduction to 2.5% of sales in 1987 (Hale et al., 1987). Oakland (2000) adds that analysis of the cost-quality relationship is a significant management tool that enables assessing the effectiveness of the management of quality, opportunities, savings and finally, a means of determining problem areas.

From the above the most important issue is a product or service that deviates from specifications is considered as poorly made and unreliable. The manufacturing cost approach leads to improvements in quality, lower costs and better productivity by preventing defects, scrapping and reworking the product.

This research study should shed light on the percentage of scrap, rework, defects, and the number of complaints made by Pakistani manufacturing companies during production processes. In-addition this thesis examines progress of quality projects, assesses advantages of QM programmes, and link quality effort with productivity.

2. Empirical Review of Critical Quality Factors

Most QM researchers focus on principles and practices of QM, especially the critical quality factors. In this research, attempts are made to validate empirically the knowledge of critical factors for implementing effective QM.

2.1 Garvin's Critical Quality Factors (1983)

One of the most significant studies to determine the critical factors of QM was conducted by Garvin (1983). He investigated the practice of QM in seven Japanese and nine US window air conditioner manufacturing firms. Data on the basis of quality management practices and quality performance were collected through questionnaire and conformance study in factory sites. The research revolved around seven identified factors: quality information systems, management attitudes, quality programmes, product design, policies, supplier management, production and employees policies, and supplier management. Garvin analyzed assembly line reject rates and calls rates after delivery as surrogate measures of quality performance. He identified that the high performers in these areas did especially well in several areas of QM. He came to the following conclusions:

a) Quality is the top priority for management of manufacturing companies. This commitment is actively demonstrated in management meetings, where quality issues have a centre place.
b) Quality is a customer-driven concept, and product quality is defined from the customer's point of view, rather than that of the sales, production, and marketing or design groups.
c) Quality departments should have direct access to top management. A number of companies had vice-presidents for quality.
d) Monitor efficiently the improvement of quality through the support of a supplier quality information system. Managers receive timely, detailed and accurate quality data.
e) Steady and consistent improvement through a comprehensive goal deployment process at all levels.
f) Employee performance appraisal is associated not to total output but to defect-free output; for example, supervisors are appraised in terms of defect rates, scrap rates, and amount of re-work attributable to their operations.
g) During the process of product design, emphasis is put on reliable engineering techniques and thoroughness in reviewing and testing of new designs before units reach production. At each stage of the review process, involvement of all related departments is required.
h) Intensive training of new employees to reduce variations in the production process due to inexperience. Employees are well trained in all aspects of the jobs required on the line. Training includes problem solving skills, SPC techniques, and other remedial techniques.
i) Extensive use of quality tools and techniques, such as control charts and SPC to control the production process.
j) Coordination and effective communication, especially before and during model switchovers, to ensure smooth and defect-free production.
k) Suppliers are selected based on their ability to produce and service quality, manufacturing capability and capacity, and value for money. Vigilant monitoring of the supplier's quality commitment, and quality audits of sites, are common.

2.2 Saraph, Benson and Schroeder's critical factors (1989)

A study conducted by Saraph, Benson and Schroeder (1989) developed 120 organizational prescriptions for effective implementation of QM by using a judgmental process. These prescriptions are organized into eight categories of critical factors, as shown in Figure 1 and explained below:

Factor 1: Role of management/ leadership and quality policy

(1). Acceptance of quality responsibility by general managers and department heads.
(2). Evaluation of top management on quality.
(3). Participation by top management in quality improvement efforts.
(4). Specificity of quality goals.

(5). Importance attached to quality in relation to cost and schedule.
(6). Comprehensive quality planning.

Factor 2: Role of quality department

a) Visibility and autonomy of quality department.
b) Quality department access to top management.
c) Use of quality staff for consultation.
d) Coordination between quality department and other departments.
e) Effectiveness of quality department

Figure 1: QM Critical Factors

Source: Saraph et al., (1989)

Factor 3: Training

a) Provision of statistical training, trade training and quality-related training for all employees.

Factor 4: Product/service design

a) Thorough scrub-down process.
b) Involvement of all affected departments in design reviews.
c) Emphasis on productivity.
d) Clarity of specifications.
e) Emphasis on quality, not roll-out schedule.
f) Avoidance of frequent redesigns.

Factor 5: Supplier quality management

a) Fewer dependable suppliers.
b) Reliance on supplier process control.
c) Strong interdependence of supplier and customer.
d) Purchasing policy emphasizing quality rather than price.
e) Supplier quality control, supplier assistance in product development.

Factor 6: Process management

a) Clarity of process ownership, boundaries, and steps.
b) Less reliance on inspection.
c) Use of statistical process control.
d) Selective automation.
e) Fool-proof process design.
f) Employee self inspection.
g) Automated testing.

Factor 7: Quality data and reporting

a) Use of quality cost data.
b) Feedback of quality data to employees and managers for problem solving.
c) Timely quality measurement.
d) Evaluations of managers and employees based on quality performance.
e) Availability of quality data.

Factor 8: Employee relations

a) Implementation of employee involvement and quality circles.
b) Open employee participation in quality decisions. Responsibility of employees for quality.
c) Employee recognition for superior quality performance.
d) Effectiveness of supervision in handling quality issues.
e) On-going quality awareness of all employees.

The tool was validated using a survey questionnaire directed towards twenty firms in Minnesota, USA, using a five-point Likert scale (1 very low, and 5 very high). Respondents were asked to rate the level of factors or 'items', as practiced in their organizations. 162 responses from managers were subjected to reliability and detailed item analysis; Saraph and colleagues identified the eight grouped items listed above as critical factors of quality management.

2.3 Critical Factors Identified by Yusuf and Aspinwall (2000)

Yusof and Aspinwall (2000) identified ten critical factors for effective QM implementation in small and medium enterprises (SME's), based on an extensive literature review. They recognized several hypothetical factors: continuous improvement system, management leadership, supplier quality management, resources, measurement and feedback, human resources development, system and processes, improved tools and techniques, and work environment and culture. The study further explained the absence of conformance practice in some quality factors such as continuous improvement system, supplier quality management, and improvement tools and techniques.

2.4 Zhang, Wasznick and Wijingaard's approach (2000)

Zhang et al., (2000) identified 11 constructs for effective QM implementation based on a comprehensive literature review. Data was collected from 212 Chinese manufacturing companies in nine industrial sectors, for testing and validating the instrument. The central aim of their study was to develop an instrument for measuring QM implementation for Chinese manufacturing companies. The QM constructs consisted of customer focus, leadership, employee participation, supplier quality management, evaluation, vision and plan statement, process control and improvement, recognition and rewards, product design, education and training, and quality system improvement.

2.5 Quality Success Factor by Harjeev et al., (2007)

Harjeev et al., (2007) has identified seven critical quality factors for effective implementation of TQM for Indian manufacturing companies based on extensive literature review.

These factors are management commitment, customer satisfaction and delightedness, continuous overall improvement, positively carried out teamwork, purposeful training of employees, feedback and perfect measurement for recognition, and effective communication. They found that all seven-success factors are considered to have lower importance for TQM practices in Indian service industries as compared to manufacturing companies.

Although, both sectors have different priorities for TQM, but both described effective communication as being not so important, which is contradictory to the literature review but seems correct when compared with the findings of other researchers. Finally, both sectors found management commitment as being the key for effective implementation of TQM.

Another similar study conducted by Jha et al., (2008) has identified leadership, employee commitment, teamwork, and employee motivation as vital factors for improving performance of Indian manufacturing companies.

The study of literature so far has indicated a number of critical factors that need to be considered when implementing QM programs. Within the context of this research these factors may be investigated in order to assess the efficiency with regard to supporting QM implementation. These will be important to provide framework no matter which data collection and analysis is eventually chosen.

The literature review shows that adopting different quality improvement approaches will ultimately improve quality and productivity (Lee et al., 2001). Although this argument has been proposed by many researchers through data collected from developed countries, it is not certain whether it applies to less develop or developing countries like Pakistan.

3. Understanding Quality Management (QM)

As with quality itself, the definition of QM is also the subject of debate and academic discourse. While Kendrick (1993) defines QM as a philosophy of management with a collection of tools and strategies for implementing that philosophy, Oakland (1993) sees it as a methodology for enhancing the performance of an organization. Omachonu and Ross (1994) identified QM as an integrated approach of all functions and processes within an organization in order to achieve continuous improvement and innovation in the quality of goods and service. QM is beyond quality, it is a philosophy, a process and a well distributed set of techniques whose application yields continuous improvement and customer satisfaction (Weinstein, 1996). Crawford and Fisher (1999) also suggested that QM practices require a shared way of thinking (culture) that highlights customer satisfaction, shared leadership, and obtaining the right results the first time. It can be seen from these definitions that QM is a methodical way which depends on continuous improvement to meet long-term organizational goals and objectives.

Contemporary business literature centres on the need for all corporate leaders to make QM a priority on their agenda. According to Goetsch and Davis (2000) and Kontoghiorghes and Gudgel (2004), many quality experts and practitioners have agreed on the following QM characteristics: customer focus; continuous improvement of the process; leadership and long-term commitment of top management; training and education; and empowerment and participation of employees.

Business today has become highly competitive, so to succeed in the global market, companies are expected to manufacture and supply quality goods or services in line with consumers' requirements and at minimum cost. They therefore need to understand their role in the market place, manage themselves to fulfil that role and ensure all employees understand and are dedicated to fulfilling consumer requirements. Generally, QM requires a change in how a company operates. It also requires changing the mindset of all employees, to make "quality" the first priority of everybody. Their efforts should be made to focus on preventing errors and doing things right the first time and every time. Saylor (1992) argued that QM points an organization in the direction of continually improving quality, increasing productivity, and reducing cost to ease economic pressures. He further pointed out that QM focuses on customer satisfaction through highest product and service quality at lowest life cycle costs to enable them to compete in the global setting.

Zabada et al., (1998) regarded TQM as a combined effort to achieve competitive advantage by continuously upgrading every aspect of organizational culture; TQM is total (every person in the firm is involved, and where possible its customers and suppliers) quality (customer requirements are met exactly) management (senior executives are fully committed).

Although the debate about QM is ongoing, there are three major contributors whose work has been acknowledged by many authors and researchers: Deming, Juran and Crosby (Chapman and Khawaldeh, 2002). The Deming cycle (plan-do-check-act) links the production of a product with customer needs by focusing on resources of all departments (design and process, research and development, marketing and sales) in a joint effort to meet or exceed customer requirements.

Deming, in his famous 14 points, emphasized the following elements of QM: continuous improvement, statistical quality control, teamwork, training and education, and employee involvement (Deming, 1982, 1986). Juran also divided quality management into quality planning, quality control, and quality improvements; this strategy is famous as "Juran trilogy" (Juran and Gryna, 1998). Juran added to the QM philosophy by stressing training, problem solving, continuous improvement, statistical quality control, and long-term commitment to quality (Juran, 1991). Crosby (1979), however, identified the cost of quality concept which stresses conformance to specification. It also includes cost of quality which provides objective measures of quality standards. The non-conformance to requirements means that quality has not been achieved.

Finally, QM comprises five essential components: quality, productivity, profitability, ability and capability. The literature review confirms that the QM approach creates overall positive effects for organizations, in the improvement of processes, profits, customer satisfaction level, productivity and a achieving competitive business position.

QM is a holistic management approach that offers a variety of benefits including cost savings for the employer and greater job satisfaction for the employees (Mahour et.al. 2011). It also comprises open communication within the organization; increased job knowledge; reduced scrap, rework and errors; and improved quality and productivity. QM is an extensive framework for the improvement of the quality of a product. The objective of QM practice is to improve the performance of an organization. QM indicates a process of continuous customer and supplier feedback to improve quality. QM is a method of appropriate performance indicators and rewards.

The literature review in this section indicates that the original objective of investigating the relationship between QM and productivity in Pakistani manufacturing companies in order to establishing BP is valid.

3.1 Quality Award Models

There are three main quality award criteria that recognise that customer satisfaction, business objectives, and safety and environmental considerations are mutually dependent and are applicable in any organization:

a. The Deming Prize
b. The Malcolm Baldrige National Quality Award (MBNQA)
c. The European Foundation Quality Management: The Excellence Model (EFQM)

(a) The Deming Prize was introduced in 1951 by the Japanese Union of Scientists and Engineers (JUSE) in recognition of Dr Deming's contribution to the Japanese quality movement after World War II. This prestigious award is given to firms with significant achievements and improved performance through application of a quality culture in company-wide activities.

(b) The Malcolm Baldrige National Quality Award (MBNQA), one of the most renowned and widely used quality award excellence models, was introduced in 1987 by the US Department of Commerce for US-based organizations. The objectives of the award are to: encourage companies to improve productivity and quality, recognize the achievements of those companies to improve the quality of their goods and services, and established guidelines and criteria that can be used by any organization in evaluating its own quality improvement efforts. Various companies have realized the necessity to assess themselves against the Baldrige model, if not to enter for the Baldrige award then certainly as an excellent basis for self-judgement and review, to stress areas for priority attention and also provide internal and external benchmarking. According to Sunday et al., (1992), thousands of companies use the Baldrige criteria for benchmarking purposes, although only a few hundred actually apply for the award.

(c) The European Foundation for Quality Management's (EFQM) award for excellence was launched in 1992. Its criteria are now widely used for systematic review and measurement of operations. The EFQM demonstrates that processes are the means by which a company or organization utilizes the talents of its employees to get desirable results. Moreover, improvement of the processes can simultaneously improve the performance of an organization. Assessment for this award is based on business results, customer satisfaction, leadership, processes, people management, people satisfaction, resources, policy and strategy, and impact on society.

In short the criteria for these quality awards play an important role in promoting and rewarding quality and business excellence, and encourage competition. The excellence model provides a framework for companies to apply self-assessment and to improve quality standards. Comparisons of results with internal targets, competitors, or similar "best in class" organizations enable companies to prioritize and drive improvements.

In the context of this research, these excellence model criteria were also used in judging management knowledge. In the questionnaire some questions related to different aspects of these award models, such as operations and functional areas, were used in determining the knowledge of managers of manufacturing companies in Pakistan. These criteria are served as catalysts to introduce quality management practices and quality conscious cultures among Pakistani companies. They also encourage companies and management to produce and provide a better quality of goods and services to customers and boost industrial output, as well as internal and external trade in Pakistan.

3.2 QM and ISO certification

One of the keys to being able to compete in the global marketplace is the ability to meet or exceed applicable standards. In reality, ISO certification is the most successful attempt to develop an internationally uniform quality standard. According to Omachonu and Ross (1994) the ISO standards are generic in that they apply to all services and all industries, from banking to chemical manufacturing. Evans and Lindsay (1999) explain five objectives of ISO certification:

1) Improve the quality of operations to continually meet customer stated and implied needs.
2) Achieve, maintain, and seek to continuously improve product quality in relationship to requirements.
3) Provide confidence that quality system requirements are fulfilled.
4) Provide confidence to internal management and other employees that quality requirements are being fulfilled and that improvement is taking place.
5) Provide confidence to customers and other stake-holders that quality requirement are being achieved in the delivered product.

Although, ISO certification does not provide specific solutions to quality problems, it does provide from the outset a solid platform for quality and productivity for companies. Moosa (2000) recognized that ISO 9000 is becoming popular in Pakistan, but it will only provide a transition to quality assurance. He further asserted that while many companies in Pakistan are ISO 90001/2/3 certified and require third party audits, these companies do not even possess a good quality assurance programme. According to Lee et al., (2001), there are two main reasons for manufacturing companies to use ISO certification:

1. The production processes of companies can be easily documented.
2. The European Community allows only those products into their countries that have ISO certification.

Further, Fatima and Ahmed (2006) pointed out that most of the companies in Pakistan are using ISO certification merely as entry level passports into export markets. As identified by previous QM researchers, most companies in Pakistan are still using ISO certification as a formality or in an inadequate manner just to enter the export market.

4. Quality Management Initiatives in Developing Countries

Agus and Abdullah (2000) studied the level of QM practices in public-listed manufacturing companies and their economic benefits. Secondly, they evaluated the role of ISO certification in companies' quality initiatives. They selected thirty companies on the basis of stratified random sampling and divided them into two groups: consumer product companies and industrial product companies. The research was carried out with the help of a questionnaire. They found that most of the quality programmes were initiated by top management. Approximately 53% of companies developed their own quality model, the remainder using Deming's, Juran's and other Japanese models. Companies who had used QM for a long time and had an ISO certification had better quality implementation processes and an edge over competitors. Moreover, quality index analysis indicated that QM had a more significant impact on the automobile and gas sectors than on manufacturers of consumer goods. This research also provides significant guidelines to new adopters of QM; consistency, continuous improvement of process, and total commitment of top management are the core for implementation and success of a quality management programme in any organization.

An empirical study on quality management practices in Shanghai manufacturing industries by Hua et al., (2000) used a survey questionnaire based on the Malcolm Baldrige Quality Award Model. This questionnaire was administered to 100 managers of Shanghai based manufacturing companies. The results found that, in general, top management played an effective role in implementation of quality management programmes in Shanghai manufacturing companies. These companies were producing better quality goods, had higher customer satisfaction, and were highly competitive. On the other hand, it was found that the employees of most of the companies were not fully trained in quality management principles, while their level of education was below satisfactory.

Secondly, employees and suppliers have a limited participatory role in quality affairs. It was observed that there was little feedback for quality improvement and quality management initiatives addressed directly to the shop floor employees. This study also confirmed that quality management practices played an important role in business development in the shape of higher market share, growth, higher profitability, and low costs. It was also found that ISO certification had no significant effect on the quality management initiatives of Shanghai manufacturers.

Lastly, employee involvement had a positive impact on QM results (Hua et al., 2000). Companies which encouraged their employees to become involved in quality management practices obtained better results than those that did not. Also in China, Lee et al., (2001) examined the relationships between quality and productivity improvement strategies adopted by Chinese manufacturing companies. The purpose of the study was to investigate how the performance of Chinese companies was associated with the quality and productivity improvement approaches they used. Lee and colleagues developed a questionnaire with 87 questions. They used the three dependent variables “quality performance”, “operating performance, and “financial performance”, and independent variables are “quality improvement approaches” and “productivity improvement approaches”.

They found a strong relationship between quality and productivity improvement factors and the quality and financial performance to a large extent. Chapman and Khawaldeh (2002) carried out an analytical research study of QM and labour productivity in Jordanian industrial companies. They examined the link between eight selected elements of QM based on a literature review and labour productivity of Jordanian manufacturing companies. In order to investigate in-depth information about the relationship between QM and productivity, they collected both quantitative and qualitative data. The selected QM elements were measured through questionnaire and in-depth interview. They used a five-point Likert scale for answers to the questionnaire. Their target respondents were all quality/production managers of Jordanian companies. The survey questionnaires replied was carefully analyzed and on the basis of the results, responding companies were categorized into two groups: high QM and low QM companies. The majority of the high QM companies were larger in size, with more than 100 employees, while the low QM companies had small numbers of employees. They further selected five high QM companies and five low QM companies for detailed in-depth interviews. They concluded that:

In high QM companies, top management motivated and encouraged their employees to be involved in decision making and empowered them through decentralization of decision making. The communication between different levels of employees was open and continuous. High QM companies created opportunities for their employees by providing training, lectures, conferences, and visiting experts. They performed decision making on the basis of reliable and factual data. These companies continuously tried to build long-term trust relationships with their employees. Companies in the high QM group tended towards market analysis, customer satisfaction, and market segmentation.

On the other hand, low QM companies did not show any evidence of employee participation in decision making and there was no open communication policy. They conducted very few market studies to identify the needs of their customers. Most of the time decision making was based on senior managers’ “best estimates”. The mean labour productivity of high QM companies was significantly higher than that of low QM companies, and the growth in labour productivity rates was also higher.

The results of the study also suggest that ISO 9000 was an excellent base for QM philosophy because it provides management and employees with the knowledge and expertise to build, improve and maintain the total quality approach. Finally, this study showed a direct relationship between QM and labour productivity.

A review of the literature has shown that there is a lack of knowledge about quality management practices that influence the level of productivity of manufacturing companies in developing countries (Moosa, 2000, Lee et al., 2001, Chapman and AL- Khawaldeh (2002)). Therefore, the ultimate aim of this research is to contribute to knowledge by understanding the impact of the implementation of QM in Pakistan and to identify quality success factors for the effective implementation of QM, leading to appropriate policy recommendations for implementation by local manufacturing companies.

Again, in developing countries, there is a lack of studies attempting to link QM with productivity (Moosa, 2000; Lee et al., 2001; Chapman and AL-Khawaldeh, 2002). Generally, studies have been restricted in scope and frequently suffered from methodological limitations or imprecision. Some of these linked only one or two elements of QM with productivity. Most of the studies are theoretical studies and only a few provide empirical evidence to support their conclusions. This study is look at the link between all common elements of QM and productivity.

4.1 Quality Management in Pakistan

Quality appears to be top priority in many companies because of two important factors: expansion and globalization of world trade; and competitive pressure from the rising demands of customers, with their need for better services and products. In the case of Pakistan's manufacturing sector, no comprehensive QM research study has been carried out (Fatima and Ahmed, 2006). Therefore, one of the main purposes of this study is to explore in depth information about the status of QM practices by manufacturing companies in Pakistan. Careful review and analysis of QM literature and existing knowledge of QM implementation policies in both developed and developing countries were also used in this research.

If the Pakistani economy is to grow based on manufacturing, then the manufacturing sector must grow along with acceptable practice of good quality management to ensure the quality of its products. Poor quality goods will not support the sustainable growth of manufacturing in Pakistan. In order to achieve this quality, it is suggested that traditional attitudes towards quality and productivity need to be changed (Moosa, 2000; Fatima and Ahmed, 2005, 2006).

It is proposed that, some of the managers and entrepreneurs have shown lack of familiarity with the basic principles of good business administration. What is quality? How can we improve it? And how does it affect production? Are there areas where industrialists in Pakistan are especially weak? (Zubair, 1996; Thaver, 1998; Moosa, 2000; Fatima and Ahmed, 2005, 2006.) These people do not have a keen eye on developments in the wider world; their planning is mostly short term, aiming to get maximum profits as quickly as possible.

Table 1: Distribution of Quality Culture in Pakistani Companies

Level 0	No customer concern/No inspection-based companies	Those companies that remain enjoy a monopoly under this category. Government departments/organizations, utility suppliers, revenue departments &government universities etc. are the example. These organizations/departments do not focus on customers nor incorporate management systems to measure or control the quality of their products or services. In the case of open competition, such organizations are eliminated very quickly.
Level 1	Quality control	According to Moosa, most of the manufacturing companies in Pakistan fall into this category. Defects in manufacturing are considered inevitable, and a defect is considered to be a defect only when it is detected. Only an inspection-based quality control department is responsible for quality. The role of production and other people is only to report defects.
Level 2	Quality assurance	Some companies in Pakistan are trying to standardize their processes, and use internal audits to check them. According to Moosa, the recent popularity of ISO certification is a part of upgrading companies from level 1 to level 2.
Level 3	Continual quality Improvement	Very few companies in Pakistan fall into this category, and ISO 9000 becomes insufficient at this level. Companies at level 3 believe that conformance to the specification is not enough in the current global competitive environment. Continuous process improvement is required at all levels. The concept of quality has been changed from product quality to performance improvement of organizations.
Level 4	Quality award models	No company in Pakistan, so far, falls into this category except some FOC's like Toyota, IBM & Microsoft, who are operating fully or partially in Pakistan.

Source: Moosa (2000)

Moosa's (2000) study of quality management practices by Pakistani companies classified the quality culture of companies in terms of their practice levels of quality management. He divided the companies into five levels, as shown in Table 1.

The main purpose of his research was an in-depth assessment of companies in Pakistan regarding quality management. He selected seven aspects for the purpose of explaining quality culture in Pakistani companies.

1) Technological status
2) Quality of management functions
3) Effectiveness of quality assurance/ISO 9000
4) Levels of continual quality improvement
5) Quality of human resource development
6) Degree of awareness and implementation of QM tools
7) The status of organized QM programme or process

A total of 20 companies were selected and analyzed: 8 from the textile sector, 5 from the mechanics sector (automotive, medical & steel bars and fasteners), 3 from chemicals (oils & cement), and finally 3 from the electrical sector (telecoms& capacitors). The size of the selected companies in terms of employees varied from 50 to 3,000.

Findings of Moosa's survey

The outcome of the survey showed that 80% of the companies did not have any organized design or development department.

Most of the entrepreneurs felt that formation of R & D was an expensive investment needing a long-term survival strategy. These companies usually depended on others for product improvements and innovations. Of the remaining companies, 15% had a satisfactory design department and 5% a poorly functioning department.

The criteria for judgement were technological know-how about products, competence of the designers, and resources including information and design control systems.

Production planning was judge by the use of appropriate tools for resource planning, with a just-in-time policy for project planners and control on production checked by conformance to the specification. The results showed that 60% of the companies followed satisfactory planning procedures and 40% had poor planning. 90% showed good control and 10% poor. He concluded that the reason behind better control was ISO 9000 implementation.

Quality assurance was assessed based on ISO 9000. ISO 9000 defines the criteria for what should be measured. ISO 9001 covers design and development. ISO 9002 covers production, installation and service, and ISO 9003 covers final testing and inspection. He found 85% of companies implemented ISO 9002 and 15% implemented ISO 9001; none survey company has implemented ISO 9003. However 60% companies were found to have poor implementation of ISO 9000 standard.

Financial activities are analyzed on the basis of book-keeping, accounting, budgeting, and effective reporting. Fifty percent had a finance department headed by professionals, 25% were weak and 25% had a poor finance department.

QM implementation requires effective competence, shared commitment, resources and organization. During the survey, these factors were checked. 60% of the companies had no intention or proposal for implementation of any QM programme. They considered ISO certification was enough for their survival and progress. Only 35% intended to use QM for the improvement of overall processes, but had not yet started, mainly due to the lack of support and knowledge of top management. QM was correctly used by 5% of the organizations. The survey indicates that QM is still in the initial stages and is used more as a slogan that as an implementation programme.

The findings of Moosa's study identified one of the key factors responsible for ineffective quality management practices in Pakistani companies as the poor quality management skills of top and middle level management personnel. Further, he pointed out that systems were design, developed and run by management who lacked basic professional management skills. This may be why they are not fully aware of and committed to quality measures.

A study conducted by Ahmed and Fatima (2006a) into quality management practices in Pakistan's knitwear industry. The responding companies had annual sales ranging from less than US$50,000 to US$20 million, with work forces of less than 10 to 1200.

It was claimed by 15 of the 17 responding companies that quality was the basis of their competitive advantage. Ten (10) companies, already had ISO certification and five (5) been planning to get it. This signifies that most of these companies believed that ISO certification would play an effective role in their sustainability in the current global competitive environment. Fifteen (15) of them claimed to be involved in different quality management efforts in order to get competitive advantages. Eight (8) companies claimed that they had graduated with quality assurance; six (6) followed SPC, one (1) followed Kaizen and three (3) also had quality circles. According to the authors, "even though the level of quality awareness is high, quality management is in its very early stages of development because the most popular technique remains the traditional quality control of the inspection type". They added that most of the companies had not adopted any professional method to gauge the effectiveness of their quality programmes. Most could not determine customer satisfaction professionally. Only two (2) out of the 17 actually interviewed customers. As far as the rate of rejection and rework were concerned, 10 respondents indicated that both were greater than 2%. The exact rate after statistical testing proved to be 2-5%, signifying that quality is a big issue for this sector.

The above study reveals that quality is a major issue for Pakistani knitwear manufacturers. There is a lack of knowledge regarding the adoption of quality management programmes like TQM, Six sigma, Kaizen and quality circles. Even where one had been applied, it was without high level commitment and sufficient knowledge. The skills and commitment of top and middle managers were limited. Although 10 respondents claimed to be using modern technology, this by itself cannot turn over into quality until or unless the technology is managed for quality. The high rate of rejection and rework clearly identified problems in the implementation of QM practices.

Another similar study by Ahmed and Fatima (2006b) about quality management in Pakistan's bed wear industry further investigated QM initiatives in Pakistani manufacturing companies.

The 30 members of Pakistan's Bed wear Manufacturers and Exporters Association (PBMEA) were asked to participate in a survey questionnaire study, with a response rate of 79%. ISO was shown to provide only a transition quality assurance. Most of the companies who qualified for ISO criteria were not able to articulate their quality goal clearly. About 70% had a poorly defined quality policy and objectives, 70% had ineffective internal audits, 75% had unsatisfactory levels of auditor's competence, 80% had insufficient depth of management reviews and 85% had poor SPC. Eight (8) firms claimed to be using TQM in conjunction with one or more stages of QM, but only (5) firms claimed to be using TQM quality circles.

In summary, it can be concluded from all these three studies that even though the level of awareness of quality issues is high, quality management is in its early stages of development because most of the companies in Pakistan continue to rely on traditional inspection-based quality control. Although ISO certification plays an important role in quality assurance levels, Pakistani organizations still need more support on the path to continuous improvement through TQM, Six sigma, quality circles, Kaizen, etc.

The initial literature review showed a lack of research in the context of quality management in Pakistan, compared to neighbouring countries like China, India, Malaysia and Japan. The current research is therefore to provide additional empirical evidence about the relationship between quality and productivity in the manufacturing sector of Pakistan.

Some researchers in quality management in Pakistan, such as Fatima and Ahmed (2005, 2006a, 2006b) have concentrated on quality management in specific areas such as the textile sector, while Moosa's (2000) study was limited to twenty companies. This study covers a wide range of companies from different sectors therefore, the findings of this study is more representative than the previous studies.

Additionally, several researchers were unable to identify the barriers to adopting quality management practices by Pakistani manufacturing companies (Khan, 2001; Shah, 2002). This study makes contribution to the general understanding of these barriers. This provides a valuable insight into current knowledge of QM, with a view to setting benchmarking for Pakistani manufacturing companies in adopting QM. It also examines the practical challenges of QM in terms of conceptual visions identified in the literature.

4.2 Modern Marketing Practices in Developing Countries

Indeed, the revolutionary developments in IT, computer science and communications have expanded the role of the Internet beyond its simple use as a communication tool to become a unique and extremely important means for communicating with customers, providing services on a 24/7 bases, entering new markets, reducing costs and increasing sales. Moreover, one of the main characteristics of the Internet is its ability to be used both as a direct sales channel and as an interactive communications tool. Consequently the Internet can affect company marketing performance in two different ways, directly through increasing direct sales and indirectly by providing higher level of customer satisfaction. This improves relationships with customers as well as productivity.

Digital Age Marketing, E-Marketing, Internet marketing, Web Marketing, E-Mail Marketing, Intranet Marketing, Extranet Marketing, Mobile Marketing, E-Business and E-Commerce are changing the shape and nature of marketing activities and practices all over the world. As a result of the recent revolution in computer science, the Internet, the World Wide Web (WWW), information technology (IT), media and communications, a growing number of firms and enterprises are using the Internet and other electronic and digital age tools to communicate with suppliers, business customers and end users of their products and services. New forms of marketing are formed and have presented a great opportunity for all kinds of enterprises to grow. The possibility of using the Internet as an instrument for conducting marketing, commercial and business activities has been widely investigated and recognised in marketing. This recognition of the potential of the Internet as a marketing tool rose from the great benefits that any company regardless of its size can gain from using the Internet in conducting its marketing activities.

However, research related to modern marketing practices (as well as other modern practices) in developing countries did not grow to represent the importance of such practices.

Although there are some studies that had been conduct in this area like the work of: Eid and El-Gohary (2014a), Eid and El-Gohary (2014b), El-Gohary (2012a), El-Gohary (2012b), El-Gohary and Eid (2013a), El-Gohary and Eid (2013b), Raghubansie, El-Gohary, and Samaradivakara (2013), El-Gohary, Edwards, Eid, and Huang, J (2013), Eid, and El-Gohary, (2013), El-Gohary, Edwards, and Huang (2013), El-Gohary (2012), El-Gohary, and Eid (2012), El-Gohary, O'Leary, and Radway (2012), Millman and El-Gohary (2011), El-Gohary (2011), El-Gohary (2010a), El-Gohary (2010b), El-Gohary, Trueman, and Fukukawa (2009), El-Gohary, Trueman, and Fukukawa (2009a), El-Gohary, Trueman, and Fukukawa (2008a), El-Gohary, Trueman, and Fukukawa. (2008b), El-Gohary (2010c), El-Gohary (2010d), El-Gohary, Trueman, and Fukukawa (2009c), El-Gohary (2013), Shah, El-Gohary, and Hussain (2013), Khalefa, Zhang, Forrester, and El-Gohary (2013), Eid, and El-Gohary (2013), El-Gohary, Eid, and Khalifa (2012), El-Gohary, (2011), O'Leary, and El-Gohary (2011), Millman, and El-Gohary (2010b), El-Gohary (2009), El-Gohary, Trueman, and Fukukawa (2009), El-Gohary, Trueman, and Fukukawa. (2008), El-Gohary and Trueman (2007), El-Gohary, Trueman, and Fukukawa (2008), El-Gohary, Trueman, and Fukukawa (2009), El-Gohary (2009), Edwards, and Holt (2007), Edwards, and Holt (2009), Edwards, Malekzadeh, and Yisa (2001), Edwards, and Griffiths (2000), Edwards, Holt, and Robinson (2002); there is still a very big need for more research in this regard.

5. Quality Improvement Initiatives

In Pakistan most of the local entrepreneurs and managers of industrial concerns ignore the concept of QM (Khan, 2003). Even where it is applied, it is done partially and lacks the true spirit and totality (Zubair, 1996; Thaver, 1998; Fatima and Ahmed, 2005, 2006a, 2006b). Samson and Terziovski (1999) claimed that "Very few manufacturing companies have been able to ignore the elements of TQM and still prosper".

Quality plays a vital role in maximizing profit as well as being the key to competitive advantage (Lee et al., 2001). "The significance of the critical success factors (CSF's) is yet to be internalized in Pakistan's business circles in general, and its industrial sphere in particular" (Fatima &Ahmed, 2006). Moosa (2000) also stated that most of the industries in Pakistan relied on inspection-based quality control systems. It is assumed that, in most cases, the main concern of business is to maximize profit and to pay less attention to the quality of the product or service. However, Drucker (1991) contested this and pointed out that the role of business is to satisfy customers within the context of generating profit. This means the purpose of business is to make money now and in the future by keeping focus on customer satisfaction.

According to Deming (1986), dedication to improvement of quality keeps companies alive and creates jobs for their employees. He further asserted that "Top management should publish a resolution that no one will lose his job for contribution to quality and productivity". Shetty and Buehler (1985) declare "quality improvement as a catalyst for productivity improvement". Wetzel and Maul (1996) suggested that the most important phenomenon is variation. Once variation is controlled, the producer can think of quality improvement. Variation in manufacturing processes is primarily observable in product characteristics, process parameters, and gauging systems, which is why reducing variation in these three areas is the main goal of effective process management. Khan (2003) argued that QM develops a culture which creates continuous improvement in customer satisfaction by minimizing the actual cost of production. Continuous improvement, once achieved, gives rise to innovation, value addition and better performance (Wilber, 2002); quality and innovation are the ingredients that determine the distance an innovator stays ahead of its inevitable competition. Quality is a key to maximizing return on investment. On the other hand, Feigenbaum (1983) introduced an approach called total quality control.

"Total quality control is an effective system for integrating the quality development, quality maintenance, and quality improvement efforts of the various groups in an organization so as to enable marketing, engineering, production, and service at the most economical levels which allow for full customer satisfaction" (Feigenbaum, 1983).

Quality improvement in manufacturing is a never-ending process. So far in Pakistan, many manufacturing companies are still relying on traditional inspection-based quality control systems (Moosa, 2000; Fatima & Ahmed, 2005, 2006a, 2006b).

The traditional quality control programme tended to focus on preventing bad quality products reaching the market, while the QM approach focuses on prevention at an earlier stage. Moosa's (2000) survey identified 85% of his sample companies as still using unsatisfactory SPC, because of low commitment of employees to quality and the inability of the top management to motivate employees to achieve quality improvement.

On the other hand, Raouf (1998) pointed out that in Pakistan, "Most of the SMEs have insufficient funds, low technological capabilities, outdated production factors and non-competitive products. Such companies are only concerned with the critical problems for survival, such as marketing and financing for operation costs. These companies, by and large, have not started tackling their problems through integrated approaches which target not only certain areas but all related factors".

Agus and Abdullah (2000) argued that organizations that improved quality should be able to improve their market share five or six times greater than those whose products declined in quality. This means that companies producing superior quality products can charge higher prices and make more profit.

It is expected that efficient use of management tools like SPC and TQC reduces waste, scrap and reworks, which also have a significant impact on quality and productivity. Top management and employee commitment to participation in quality management activities could significantly improve companies' overall performance. In the context of this study, the researcher will examine the current Pakistan companies with respect to the types of measure taken to improve quality, and how they maintain a consistent quality. It will determine the values companies attach to variables such as performance rating and performance-based award systems.

5.1 Quality and Productivity Link

World class companies, such as Xerox, General Motors, Ford, and Motorola have increased their productivity and regained their competitive positions as industry leaders through implementation of QM (Kano, 1993; Price & Chen, 1993). Many attempts at QM implementation have resulted in a failure, because it requires a shared commitment of employees and management, time and capital (Cole, 1993). On the other hand, Golhar and Deshpande (1999) identified lack of employee training, lack of coordination of teamwork, and not linking employee compensation to achieving quality goals, as barriers to QM implementation. One of the most significant works is by Gunasekaran and Cecille (1998), presenting a real example of a quality and productivity implementation programme. A French automotive wiper supplier company 'Valeo Wiper System' was facing many problems regarding quality and productivity. They applied just-in-time (JIT) techniques in implementing a productivity enhancement programme. Valeo's main focus was to improve productivity and the quality of its wipers by reducing cycle time, solving under-capacity problems, and increasing the efficiency of its delivery system. Before implementation of JIT they conducted a training session for employees. Successful implementation of JIT reduced cycle time from 18 to 14 seconds per item in three weeks.

Output per person per hour was increased from 76 to 89 parts. This study identified the following key critical factors essential for implementation of a productivity programme:

O Top management commitment and support for the process of change.
O A team of key managers from different functional areas of the organization.
O Education and training of employees to accept changes.
O Empowerment of employees to play a significant role in the implementation of the quality and productivity plan.

Garvin (1988) presented an example of the cost of poor quality, estimating it as $0.003 per part if it is properly inspected by the supplier, but $300 if it is neglected by the supplier and handed to the customer as an external quality failure. A case study by Velloci (2002) provided evidence that when two components of quality management, customer focus and quality performance, were applied in a casting plant they resulted in reductions of 75% in rework, 40% in scrap and 50% in customer complaints, and doubled the productivity of the plant. Another study by Gudgel and Feitler (2000) showed a significant improvement of 57% in quality, and a massive 81% in productivity.

Kapuge and Smith (2007) asserted that the implementation of a QM programme with the help of effective leadership and employee participation could have a significant effect on the financial performance of the firm. The main objective of his research was to compare the performance of companies in Sri Lanka, which had implemented a QM programme with those, which had not. The results showed that companies, which had adopted the QM philosophy, performed far better internally and externally.

It is suggested that, based on the above evidence, manufacturers in Pakistan have to reorganize their product quality-wise and to motivate entrepreneurs to make products acceptably free from all errors. Quality improvement is the route to restoring competitiveness and sustainability in the global market.

Many authors have stressed the importance of a company's corporate culture in the implementation of quality management programmes (Asrofah et al., 2010, Pineda and Gazo, 2007). Jabnoun (2001) claimed that without changing its internal climate, a company's quality implementation efforts are useless. Another study by Jabnoun and Sedrani (2005) revealed a strong relationship between the cultural dimensions of a people-oriented, customer focus and continuous improvement in performance.

Mohanty (1998) points out three factors for managing quality and productivity.

(a) Connectivity: the degree of link between top management and different working departments, including connectivity between people and leadership and between strategic initiatives and the environment.
(b) Sensitivity of top management towards identifying signs of change in four domains: technology, market place, people and management itself.
(c) Organizational focus on quality and productivity.

Golhar and Deshpande (1999) investigated the productivity of auto parts manufacturers in the USA and Canada. They used three different measures of productivity for calculating performance:

(a) Financial measures, comprising the following indicators: market share, sales per employee, return on assets, return on sales.
(b) Customer-related measures: overall customer satisfaction, customer retention, number of customer complaints, order processing time, number of defects per unit, reliability of product, and cost of poor quality.
(c) Internal business-related indicators: attendance, number of accidents per year, employee turnover, employee satisfaction, number of suggestions per employee, number of quality improvement projects.

This research provides significant evidence of improvement in productivity resulting from implementation of QM as a management philosophy. The key finding is that both the US and Canadian manufacturing firms reported an increase in productivity as measured by customer-related and internal business-related indicators.

In summary, QM is a strategic approach concerned with a total system aspect of companies. QM presents a range of tangible and intangible benefits which amount to cost savings for the employer and also greater job satisfaction for the employee, including: increased work knowledge; improved quality and productivity; reduced waste, errors and product reworks; and improved communication. The term QM incorporates all the activities in a company. This leads to the production process, design and delivery of products and services which meet the customer's demands and expectations at an acceptable price and quality. QM creates a "significant impact" in a company.

Happy workers do a better job, making better quality products and services that satisfy and makes customers happier (Khan, 2003). Sales and productivity increase profits margins. Higher profit margins may result in new investments, improved working conditions for employees and so on.

It is evident from the literature that some key elements which need to be considered before implementing any quality management programme include the following:

- Top management share commitment and willingness for transformation.
- Training/briefing of employees before conducting quality management programmes and keeping employees' confidence that in the case of success or failure their jobs are secure.
- Neglect bureaucratic style of management, encourage participative style of management throughout the organization.
- All participants are at liberty to present free opinions regarding quality initiatives (empowerment).
- Treat supplier and vendors as partners and keep them updated.
- Integrate all departments of the organization (clear communication).

The current study shed light on the above subject matter to discuss key essentials for implementation of effective quality management of manufacturing companies by introducing related questions in the questionnaire in order to identify the level of adoption of TQM in Pakistani companies.

5.2 Productivity and Measures of Productivity

The subject of productivity has been studied extensively, and it constitutes an important component of the literature on management. Productivity is an active instrument with which to assess the utilization of limited resources, which include land, capital, labour, and organization. Efficient use of available resources increases productivity which in turns translates into profitability of firms operating in the industrial, commercial and agricultural sectors. Productivity is intimately linked to the returns of projects, so the measurement of productivity is a vital technique to rationalize the decision-making process.

5.2.1 Productivity

Like the term quality, productivity has been defined in many different ways. Generally, it is the ratio between inputs and outputs. According to Mohanty and Yadav (1994), inputs may include the following: labour (human resources), capital (physical and financial assets), energy, materials and information. Gedye (1979) pointed out that productivity means how resources are measured; it can be stated in the form of a fraction, output being the numerator and the resources taken as the denominator.

Several writers stress profitability, quality, innovation, efficiency, effectiveness, value, and quality of work life in defining productivity. Other definitions have mixed exclusive human and organizational efficiency variables. Productivity is commonly expressed as the end result of all personal and organizational collective missions associated with production, use, and delivery of products and services (Smith, 1995). It also measures the capacity of individuals, firms, industries or an entire economy to alter the balance of inputs into outputs. Higher productivity signifies that extra goods and services can be produced with the same effort and resources (Pritchard, 1995). Increased productivity connotes receiving additional goods and services from less input of human effort, capital, material, space, energy and technology (Pritchard, 1995). According to Parsons and Corrigan (1998), four key advantages of measuring productivity for accountants include the following:

1. It gives detailed information on performance measurement and contributions to profitability in US dollars.
2. It calculates productivity change in terms of US dollar and serves as the basis for analyzing both quantitative and qualitative trade-off.
3. It reconciles performance analysis to the financial results.
4. It isolates the effect of productivity and prices.

The general characteristic of all productivity indexes is that they measure the amount of output that can be attained from a given volume of input. Productivity measurements may be used to assess performance at a particular time or over time. If we are to compare producers at a given period, productivity measures would be able to provide a clue to performance. Sumanth (1998) stated that the most efficient use of productivity indicators is improving a firm's performance.

McGavin (1993) argued that increase in productivity takes place when output or product per unit factor input increases. In spite of the fact that the concept of productivity is clear-cut, its accurate measurement is complex. The factors of production, namely labour, materials, capital, management, etc. are not easily turned into to a common unit of measurement that can identify units of inputs related to units of output. The common problem associated with units of measurement also applies to output. Productivity growth is the critical means for organizations to improve their performance. It is a sign of both technological change and organizational change. Both measures operate at the same time and, in practice, it is difficult to differentiate between their effects (Gretton & Fisher, 1997).

VanArk (1995) has identified that productivity also serves as a determining factor in business competition. As a result, productivity monitoring is essential and largely designed for strategic reasons by companies in areas such as corporate planning or improvement in business competitiveness.

In summary and on the basis of the above explanation, productivity is seen as an output that is measured against resources expended to generate that output. Productivity is the sum of factors of production i.e. land, labour, capital, and organization. If the above factors of production have been use in an efficient and effective manner, it may have a deep impact on productivity and lead to increased profitability of firms operating in the industrial, commercial, and agricultural sectors (Gaither, 1992).

It is also concluded that productivity is not simply the result of all inputs deployed in making a product, but how well a product meets the aim of the organization and how they meet and satisfy customer expectations. It also a measure of the capacity of individuals, organizations, industries or entire economies to convert inputs into outputs. Nowadays, the manufacturing and business environment is dynamic, complex and competitive. Total productivity is the result of two inputs: labour/manpower productivity and capital productivity.

Labour productivity can be measured on the basis of output per worker and involves employees, supervisors, managers, workers and union officials. Labour productivity has been influenced by factors such as the level of skills in terms of management, combined efforts by management and labour to increase productivity, supervision techniques and labour management. Capital productivity is the ratio of output to capital. It comprises hardware inputs such as mechanization, computerization and automation, and technology inputs such as production technology, research and development.

Productivity represents the organization's ability to create wealth, while prices are basically the vehicle for distributing it (Smith, 1995). In order to achieve better productivity, an organization needs to develop productivity plans that are integrated, coordinated, and consistent with the overall business plan. Productivity has also been defined on the basis of various performance measures such as performance according to the schedule, machine utilization, total output divided by company's total headcount, or on the cost of variances. Therefore, productivity blends profitability, quality, efficiency, innovation, value, and quality of work life. All these factors and inputs combined lead towards total productivity, which in turn creates wealth. Wealth is then distributed in the forms of profits for stock holders and investors.

5.2.2 Measures of Productivity

Productivity measurement is to some extent easier than measuring quality because although the former is determined by the output of many functions or activities, many of which are also difficult to define, the latter is determined by the customer and may be fragmented and unclear. What is the measurable output of design, market research, training, or quality assurance? In spite of the difficulties associated with the measurement of these variables, measures are necessary for each activity. Standards are required for assessment against past performance, the experience of competitors, and on that basis an action plan could be designed for improvement. Omachonu and Ross (1994) have identified various principles for measuring productivity and quality. These include:

- Meet the customer's need. The customer could be internal or external.
- Measures to control and be understood by those being measured. This principle could be more effective if those being measured are allowed to participate.
- Emphasis should be on direct feedback to workers and the process that is being measured.
- Base measures on available data. Application of cost benefit analysis could be used to generate new data. Do not ignore information because of the cost of gaining it, as it is rarely worth more than without it.

- The main objective of performance measure should be to measure what is essential. This may not be possible with the traditional cost control report.

On the basis of the aforementioned criteria, productivity can be measured in several ways, but the most common is the ratio of output to input:

Productivity = Output / Input

(Where inputs may include; labour, capital, material, energy or other miscellaneous resources).

According to Gaither (1992) productivity in a given time period is usually measured with the formula below:

Productivity =Quantity of products or services produced/ Amount of resources used

Smith (1995) presented two alternative concepts of productivity measurement: costs + profits/costs; and the value-added concept. The costs+ profits/costs method argues that the productivity measure is nothing other than costs plus profits divided by costs. The value-added concept explains that productivity can be quantified in terms of a value-addition formula:

Productivity= Value added / (Capital Input+ Labour Input)

Productivity measurement is a management technique to evaluate and monitor the performance of businesses operations. It is thus a key focus in modern business. It enables companies to survive and make reasonable returns on their investment, and consequently profits. Productivity measures are also based on the thrust of profitability for which management is answerable. They demonstrate how successfully and efficiently management uses resources to produce quality goods and services (Aboganda, 1994). It is not easy to measure productivity variables in disciplines such as management and economics. Productivity can nevertheless be measured indirectly by quantifying the variables and then mathematically calculating the productivity element from them, as described by Alby (1994).

Productivity measures serve as criteria for assessing and comparing production processes in efficient terms and how they utilizes resources to produce output (Chapman and Khawaldeh, 2002). According to Edosomwan (1988), productivity measures have been categorized as:

a. Total factor productivity: the ratio of total measurable output to the sum of labour, capital, and material inputs.
b. Partial productivity measures: the ratio of total measurable output to one class of measurable input.

Total factor productivity measures the influence of changes in the inputs of all factors of production; partial productivity measures changes in one or more inputs against output. Total productivity measures not how many units or services are produced but the features of products and services. Therefore, this measure is about the efficiency of the whole plant or company. Total productivity is the broadest measure of output to input and was expressed by Smith (1995) as:

Total Productivity = Total Output / Capital+ Labour+ Materials+ Energy+ Miscellaneous Inputs

The factors of production used in the productivity measure include labour, capital, materials and energy. Since total productivity ratios may possibly cover partial factors, some uses may be alike. Smith (1995) identified the advantages of the total productivity ratio as follows:

1. National indicator for economic productivity and growth. This is a universal approach to illustrate the overall economic growth in an economy.
2. Interpret the results of many partial productivity gains or losses.
3. Interpret individual product lines and separate services obtained in or outside a company.
4. It gives an insight into net pricing which alerts management to take control measures to reduce costs and increase revenues.

A partial factor measure of productivity is the process of setting out ratios of total output to one or more inputs in a group. Some partial productivity ratios are calculated by dividing the total output of the company by a single input such as capital, labour, energy or materials (Smith, 1995). The most popular partial productivity measure used was identified by McGavin (1993) as labour productivity. According to Omachonu and Ross (1994), labour productivity can be expressed as follows:

Labour Productivity = Total Output / Labour Input

The focus of any TQM study should be to calculate productivity from a range of companies across multiple sectors, including automobiles, chemicals, engineering, food, pharmaceuticals and textiles. As identified by Aggarwal (1980), different industries use different productivity measures. He proposes that the labour-dominated industries should be measured by the productivity of direct labour alone; capital intensive industries should use capital productivity measures; and similarly, materials-dominated companies should be measured by materials productivity alone. In order to overcome these differences, a proxy measure of productivity was used in this research.

6. Relationship between Quality and Productivity

According to Hart and Hart (1989), many writers are under the misconception that quality and productivity are conflicting goals. Others perceive an inverse relationship between productivity and quality. Parks (1974) and Lancaster (1979) argued that an attempt to improve quality and productivity concurrently reduces the level of production or sometimes does not respond accordingly. However, this assertion has been criticised in the field of management by several writers (Lee et al., 2001; Khan, 2003; McCracken & Kaynak, 1996).

Kontoghiorghes and Gudgel (2003, 2004) show evidence of a direct and positive relationship between quality and productivity. According to Huff et al., (1996), quality and productivity are two synonymous terms and equate quality to productivity. According to Lee et el., (2001) productivity is a potential ingredient in enhancing the cost of quality. This means that when the quality of a product improves it has a corresponding impact on productivity.

Deming (1986) also recognized the relationship between quality and productivity by pointing out that when quality improves, productivity will also improve due to less rework and waste; improvement of quality transfers waste in the form of labour hours and machine time into the manufacture of good products and better services. Productivity (value addition) and quality (value enhancement) determine the competitiveness of manufacturing companies (Mohanty, 1998). Many writers agree that for companies to remain competitive, it is important that they incorporate productivity and quality.

Omachonu and Ross (1994) identified five ways by which companies can improve quality and productivity:

- Reduce costs: the conventional and most widely used method for improving productivity.
- Accelerate growth: this method proposes additional investment or cost addition, in order to increase returns beyond the overall cost, thus increasing the ratio. There are many ways to accelerate growth: organizational design, capital and technological improvement, training, systems design, wages and incentives, etc.
- Work smarter: increase output from the same input, by increasing production or sales from the same gross input; by reducing manufacturing costs through product planning and design; by improving manufacturing processes; or by increasing inventory turnover using the same level of raw materials to generate more production.
- Pare down: a proportionately large amount of input should be reduced compared to sales and production.
- Work more effectively: efficient and effective use of all resources is the best route to productivity and quality improvement.

The review of literature reveals that modern manufacturing economies cannot survive if they produce poor quality goods or services. Poor quality leads to reduced productivity levels and poor customer satisfaction. If Pakistan is going to develop as a manufacturing economy, quality and productivity must go hand in hand. Traditionally, productivity is supposed to emphasize the end result, the profit; more recent views of quality and productivity suggest that the process of improvement—not the profit—is the key to improving the quality of a product, and thus productivity, which in turn directly increases profit. This study explores how the productivity and quality of manufacturing companies in Pakistan go together.

6.1 QM and Productivity

Total business productivity is the combination of quality, efficiency, design, administration, cycle time of marketing, and manufacturing; good quality products are manufactured at lower cost, thus generating more sales through lower prices and increased productivity. It also relates to a situation where more products are introduced, resulting in more sales for a given investment, and raising productivity. According to Shores (1990), if inventory and cycle time are shorter, it will create a higher return on assets and a higher level of productivity. The attainment of a high level of productivity will not alone guarantee a company's success; a corresponding level of quality is required.

Edosomwan (1995) emphasized that the "quality road to productivity is the shortest and most effective route to higher productivity". The QM approach provides the necessary integration of quality and productivity and in many cases has rapidly delivered measurable savings. Certainly, when compared with the gains, the implemented cost associated with QM is negligible. QM is an innovative approach, but involves conviction and commitment from the top to the bottom of an organization. This is necessary to sustain the innovative practices that are needed for the gains in quality which result in substantial gains in productivity. Mohanty and Yadav (1994) linked the different aspects of quality and productivity in the following ways: customers are supposed to be future assets of an organization; adding value at every step of each operation; shifting of emphasis from maximizing individual capitalist gains to improving quality; and finally fostering respect for the human system.

Quality means meeting the needs of customers, while productivity is the cost associated with consistency, effectiveness, timeliness, conformance and quality of the service that is delivered by the organization in order to achieve its mission from a macro-level perspective and the satisfaction of customers from a vision perspective. Increasing the quality increases productivity and the two go together. Productivity is normally equated with more output at the same unit of cost or less cost.

QM is a wide management strategy which maximizes the benefits of productivity if it is adopted effectively. Productivity is however, a strategic method with a time dimension (short and long) to reduce costs, enhance efficiency, and ensure optimum use of company resources. Total Quality Management is also about cultural transformation and the construct of a company's visions and mission. This study has identified how QM is directly and positively related to productivity of manufacturing companies in Pakistan by examining the attitude, perception and knowledge of managers and employees, their commitment levels, and awareness of quality management techniques.

6.2 Improvement of productivity

People, process and productivity are influenced by positive and negative effects. Some of the causes are foreseeable and could be handled by management. Effective planning and forecasting of company activities enables redirection of the causes in a consistent and productive manner (Smith, 1995). In a study conducted by Crawford and Fisher (1999) on productivity, the results were that there is no relationship between the size or age of a company on the one hand, and productivity on the other. Judson (1982) identified factors that determine productivity: employee relationships, motivation, research and development, labour ethics, managerial efficiency, and machinery.

The composition of the workforce may act together with information technology in accounting for variations in productivity. Generally, management makes investments decisions on information technology alongside other decisions in relation to other variables by measuring the associated effects; positive outcomes improve productivity (Francalanci & Galal, 1998). Productivity involves many causal factors, which produce a series of consequences. According to Alby (1994), the main factors influencing productivity are: training and experience of the workforce, quality of management, investment in production, technology, equipment and facilities, general level of education and social environment (labour relation patterns, social tensions).

The productivity of labour measures the extent to which products or services are produced in relationship to the amount of labour needed. Productivity of labour is influenced by hard work, the methods employed, and the tools and machinery employed (Gaither, 1992). According to Dixon and McDonald (1991), labour productivity is also affected by factors such as changes in the following: technology, capital/labour ratios, allocation of capital across industries, and changes in agricultural output connected to climatic conditions. Labour productivity can be enhanced by introducing capital equipment and capital productivity by employing extra workers (Saha, 1994). Basically, labour productivity is shaped by factors such as: employees' qualifications; supervision methods; investment in production technology, equipment and facilities; job design and training; wages system; teamwork; and production control methods.

It is especially affected by employees' job performance and machines and tools. The former is a difficult issue in the sense that people are not alike. Personalities, abilities, education, energy levels, interests, ambitions, training and experience usually differ from one to another. Motivation is possibly the most important variable in the measure of productivity. According to Gaither (1992), motivation was identified by Abraham Maslow as having five levels of need that make people act: physiology, safety, society, esteem and self-fulfillment.

These are arranged hierarchically, with physiological needs occupying the lowest position and self-fulfillment the highest. It is noted that the only needs that are not satisfied that is interested to motivators or simply let people to act. Gaither (1992) has suggested amendments to motivation for specialized jobs to satisfy a broader range of needs for workers:

O Job rotation
O Job enlargement
O Job enrichment
O Team production.

Several writers on productivity improvement presume that output is a fixed factor and that improving productivity is only a matter of reducing the amount of input consumed for each unit of output. Improved productivity must start with developing sound strategic plans, setting objectives and goals, and setting out priorities areas (Mohanty &Yadav, 1994). According to Smith (1995), to enhance productivity effectively also requires strategic planning and regular change of effort, including contribution and assistance of all the work force. Sumanth (1998) has demonstrated how productivity can be increased:

O Increase output with the same or a smaller amount of resources.
O Reduce the amount of resources used while maintaining the same output or raising output.
O Ensure the resources used to increase output increase further.
O Allow output to fall as long as the amount of resources used falls more.

Picard and Seay (1996) pointed out that productivity is related to efficiency and effectiveness of work. Therefore to improve productivity, a reliable evaluation is required, first to discover actions that need to be considered and their impact quantified. Productivity improvement can be looked at as a persistent and systematic management procedure, which means change. Companies, especially the statisticians in companies, are required to estimate realistic output values. To identify and evaluate the causal effects, productivity is one of the essential issues confronting today's business executives. To ensure that companies become successful, they should show positive action to ensure total management of productivity throughout, with a prescribed, documented process. The process should be based on past productivity analysis, and the information obtained should form the basis of estimating future productivity levels (Motwani et al., 1995).

Productivity also increases if capital is invested in physical, financial and human assets, with better workplace relations. This is likely to increase output, reduce costs and increase profits margins. According to McGavin (1993), employers are likely to pay higher wages to retain valued employees and, at existing wages, to expand wage employment and output. Meanwhile, productivity can be seen as the measure of the efficiency of production and operations of management. Actual growth in productivity can be achieved from the optimum use of new technology and capable employees. Labour productivity can be improved in the process of selecting qualified employees, minimizing waste and time.

To achieve improvement in productivity, managers need to develop good relations between all employees concerned in productive activities; productivity improvement is a collective aim, which engages employees together through group dedication and personal loyalty. McGavin (1993) stated that accomplishing productivity improvement entails three choices: increasing the product values for existing resources used in production processes, substituting resources used so that product values are increased, and using additional resources of a kind that increases product values more than the increase in inputs. Enhancing productivity requires concentrating on the foundation of productivity growth. This indicates taking advantage of advances in knowledge and technology, and healthier association with associated firms and industries.

Increased productivity has positive effects on product purchases, providing customers with more for the same price and thus raising standards of living (Huff et al., 1996). It may also increase earnings, buying power and returns on investment. Most importantly, it can improve companies' competitiveness. Different approaches to productivity improvement suggest that if companies continuously and methodically improve their input processes, this will significantly improve their productivity score (Gaither, 1992). Productivity is directly related to efficiency and effectiveness of work. This study also identify the differences between FOC's and local companies in terms of the extent to which productivity improvement has been seriously considered, by looking at the extent of education and training, skills development, adoption of technology and style of management..

7. Summary of Literature Review

This paper discussed the importance of quality, quality management and productivity in manufacturing companies. It also highlighted productivity measures, the relationship between quality and productivity. The literature revealed that QM is an area which is increasingly recognised all over the world by businesses, owing to the importance of the quality element in providing services and products to consumers. Quality is seen as an organization's continuous improvement process. Applying quality to managements leads to improving performance and customer satisfaction. The QM approach is a continuous process for organizations to achieve improvement in the quality of their products and services through the integration of all functions and processes, in order to ensure customer satisfaction.

In the context of developing countries, a few studies have attempted to test the relationship between QM management practice and productivity (Moosa, 2000; Lee et al., 2001; Chapman and Khawaldeh, 2002; Chin, 2003; Khan, 2003; Fatima and Ahmed, 2005, 2006a, 2006b). These studies discussed the following constructs of QM: management commitment and leadership style, employee participation and continuous improvement, education and training, teamwork and award/reward system, customer focus and customer satisfaction, percentage of rejection and statistical quality control and, finally, ISO and traditional quality control.

These researchers agreed that most of the above elements have positive effects on quality and productivity. They identified the bureaucratic style of management, lack of employee training, lack of coordination of teamwork, and not linking employee compensation to achieving quality goals as barriers to adopting QM practices.

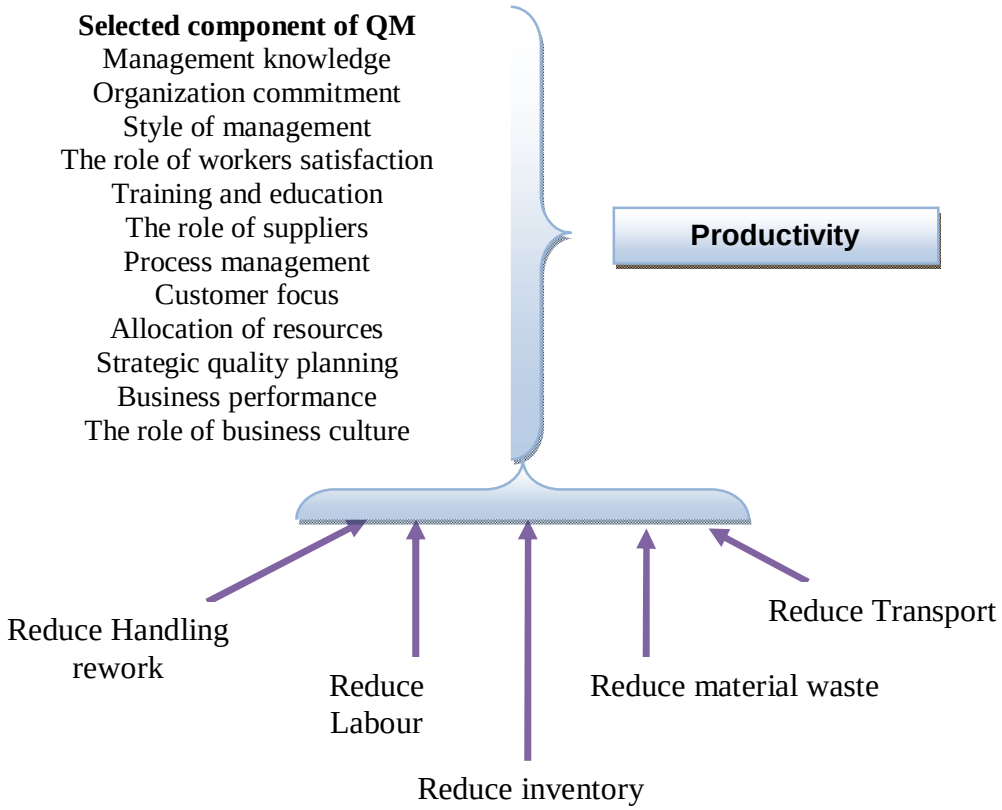
Most of these authors measured quality on the basis of the annual figures for percentage rejection of goods manufactured, the total number of claims received, the percentage of scraps and rework, the amount spent on training and development and, finally, the cost of inspection.

Most of the research relating to developing countries measured labour productivity, because exact figures for material, energy and other inputs are hard to find, and it is difficult to pin-point total factor productivity. Finally, labour productivity was highly correlated with total factor productivity (Chapman and Khawaldeh, 2002).
Although the significance of QM is widely recognized, in the context of Pakistan, the literature showed weaknesses in understanding its utility in manufacturing. Therefore, this study offers valuable insights into current knowledge of QM in Pakistan and their effects on quality and productivity. Secondly, this study contributes to a general understanding of barriers to the adoption of QM programmes in locally owned companies. Finally, comparing and contrasting local Pakistani manufacturing practices with those of FOC's operating in Pakistan helps to identify "Best Practice" that could be easily adopted by locally owned manufacturing companies.

7.1 Proposed Conceptual and Theoretical Framework for the Study of TQM

The theoretical and conceptual framework is shown in Figure 2. The key concepts and how they may be related to each other are shown. It is meant to guide the research process in exploring possible relationships between concepts, and the data collection and analysis.

Figure 2: Conceptual and Theoretical Framework



Quality Manufacturing based Approach

Source: Adopted by Chapman and Al-Khawaldeh (2002)

The study's conceptual framework explains how the concepts of quality management relate to quality and productivity. The significance of this framework is that if quality management is applied it should positively lead to high quality products which will increase productivity (see figure 2). As the manufacturing based approach leads to reduce waste this should lead to higher productivity assuming that the cost of prevention does not exceed the benefits of waste reduction. This is one of the pre-requisites of JIT and Lean production techniques which will also be studied in this research project as supply chain practices that link quality and productivity.

8. Conclusion

This paper has reviewed important literature informing the study in examining the relationship between QM practices and the productivity of manufacturing companies. The initial literature review confirmed that quality has a significant impact on productivity. Better productivity gives cost advantages over competitors, thus resulting in lower prices and higher profit margins for manufacturers. It also revealed that in formulating and implementing quality management, the commitment of top management and employees' participation is indispensable. To this end, quality improvement will ultimately create a significant impact on companies' revenue and market share. Better quality also results in higher demands for goods and services. Companies with superior productivity would be able to pay higher wages, thus attracting more highly skilled and qualified employees, in turn having a positive effect on productivity. Properly applied quality management initiatives not only enhance the skills of employees, but also motivate people to grow, increasing productivity and satisfying customer needs and expectations.

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