CHAPTER 2
THEORETICAL AND EMPIRICAL FRAME WORK

2.1 INTRODUCTION

The introductory chapter, inter alia, has made it abundantly clear that the present inquiry is primarily concerned with the study of Total Quality Management activities in printing sector. According to Hotchkiss (1988)

1

, the researcher ought to make a relatively comprehensive review and while doing so, he/she should assimilate the research that has gone into the field of present inquiry so far. In this backdrop the researcher has made the review of the existing literature on TQM to bring out various issues, models, observations, barriers to TQM implementation, TQM tools, factors responsible for successful implementation of TQM and comments made by various authors and researchers in respect to the practice of TQM and its impact on organizational performance. It also enables the researcher to form a clear idea about the various areas studied, methodologies applied and sample for the study. The bibliography details given at the end of the chapter were useful in identifying and locating further relevant data. The researcher has set two objectives for the present review. They are: the first, to establish that the present study is not a blind repetition of the earlier works; and the second, to use the theoretical and empirical framework that the review creates, in analyzing and interpreting the data and findings in the core chapters of the thesis. With such ends in view this chapter is split into six sections, including the introductory section. The second section presents the brief note on the chapter-specific methodology. A few prefatory remarks on changing dimensions of TQM are made in the third section. The fourth section provides theoretical framework. Most of the important TQM related factors that pass through the thesis are discussed in this section. While doing so, the theoretical works on TQM are also reviewed. The fifth section furnishes the review of some important empirical works on TQM, which builds
the empirical framework for the use of the present enquiry. The sixth section concludes
the discussion by giving a succinct summary of the theoretical and empirical
framework.

2.2 A BRIEF NOTE ON THE CHAPTER-SPECIFIC METHODOLOGY

At the outset, it is to be pointed out that making a relatively comprehensive
survey of the theoretical and empirical works on TQM practices is not an easy task.
However, every possible effort is made by the researcher to access as many works as
possible. The materials required for the review is gathered from various sources. The
major sources include: the research-oriented reports and articles brought out by the
faculty of IIM Bangalore and also the TQM-related works available in the library of
IIMB. The TQM related Ph.D. and M.Phil. thesis (published and non published)
available in the libraries of Bangalore University, Bangalore, Mangala Gangothri,
Mangalore University; Gulbarga University, Gulbarga; Vishwesharaiah Technical
University, Belagavi, the ANNA University, Chennai. Management Journals such as
Wiley Sage Publication, Emerald Publication, Asia pacific journal of quality
management, Business process management Journal, Strategic management Journal,
Journal of Operations Management, Harvard Business review and books such as,
Implementing Quality Management in Graphic Arts Industry; Implementation of TQM
in the Print Production Process; Total Production Maintenance, A Guide for the Printing
Industry. Some research studies done inside and outside India are accessed through
internet. Most of the works referred here do pass through the thesis. With a view to
capturing the various dimensions of TQM practices that have been researched, some of
the important works reviewed by the researcher in their works are also considered here
and especially in the empirical part of this review. The researcher used these works in
developing the theoretical and empirical framework for the present thesis.
2.3 A FEW PREFATORY REMARKS ON THE CHANGING DIMENSIONS OF TQM

In today’s global competitive marketplace, whether it is a manufacturing or service Industry or a public enterprise, “TQM” is the management buzzword, Managers and academicians are diffusing the TQM philosophy and its elements throughout the world. Total Quality Management (TQM) what the world speaks about in this century is not the same as the one it talked about in the early decades of the twentieth century.

The concept of quality has existed for many years, though it’s meaning has changed and evolved over time. The historical evolution of Total Quality Management has taken place in four stages Dale.et.al.(2000). This can be categorized as follows:

1. Quality Inspection (1910)
2. Quality Control (1924)
3. Quality Assurance (1950)

In the early twentieth century, quality management meant inspecting products to ensure that they met specifications. In the 1940s, during World War II, quality became more statistical in nature. In the 1960s, with the help of “quality gurus,” such as Juran, Deming, Crosby, Feigenbaum, Ishikawa, Taguchi, Garvin, Oakland and many others the concept took on a broader meaning. Quality began to be viewed as something that encompassed the entire organization, not only the production process. Since all functions were responsible for product quality and all shared the costs of poor quality, quality was seen as a concept that affected the entire organization. In the late 1970s the meaning of quality for businesses changed dramatically, before then quality was still viewed as something that needed to be inspected and corrected. The term used for today’s new concept of quality is total quality management or TQM. The old concept is reactive, designed to correct quality problems after they occur, the new concept is
proactive, designed to build quality into the product and process design. The need for quality as a fundamental component in the formulation of an organization’s strategy is clearly explained by Bilich and Neto (2000) who state that quality, as a macro function, must be present in the day-to-day working of an organization, in aspects such as establishment of policies, the decision process, selection of personnel, allocation of resources, definition of priorities and service delivery to satisfy customer requirements. According to Feigenbaum (1990), in an increasingly competitive world, quality is no longer an optional extra, it is an essential strategy: without quality an organization cannot survive. The generation of quality products and services demands total commitment from the entire organization; it requires TQM. TQM therefore is a solution for improving the quality of products in developing economies so that they are accepted in a global market. Today, several companies implement TQM as a “broad and systemic approach to manage organizational quality. Although to some it may seem like a “buzz word” that has gone in and out of popularity within the last several decades, its concepts and principles are constantly being implemented across all industry and business types.

Today, quality is no longer the exclusive preserve of quality management; it is a corporate issue which affects every area of operations from board room to shop floor. Quality is a major future determinate of success and variability for every company. The recognition of TQM as a competitive advantage is widespread around the world and has been growing steadily, very few companies can afford to ignore the term TQM, Dean and Bowen (1994). It has now been taken a shape in a series of International standards in the ISO 9000 series and umbrellas over several specific quality programs, such as the Malcolm Baldrige National quality Award, Six Sigma, the Deming Prize to name a few.
Figure 2.1 Phases of evolution TQM.

Phase 1
Quality of product
- Quality Inspection (1910)
  - Error detection
  - Rectification

Phase 2
Quality of institution
- Quality Control (1924)
  - Statistical methods
  - Process performance
  - Quality standards

- Quality Assurance (1950)
  - Quality systems
  - Quality costing
  - Quality solving
  - Quality planning

Phase 3
Quality of life
- Total Quality Management (1980)
  - Whole institution invoked
  - Quality strategy
  - Team work
  - Staff empowerment
  - Involves customers & suppliers

Paradigm shift through time

Source: Dale and Pycraft, Singh and Phihela (2000)
2.4 THEORETICAL FRAMEWORK

2.4.1 INTRODUCTION

The principal objective of this section is to create a theoretical framework for the discussion that follows in the subsequent chapter. All the TQM quality related factors are not discussed here. The factors which have bearing on printing unit performance and customer satisfaction are taken up for discussion.

2.4.2 DEFINITION OF QUALITY

The term “quality” is derived from the Latin (qualitas) and means attribute, characteristic, property, condition (Lin.et al. 2005). Quality has been with us since the dawn of civilization, however, after the Second World War it has been used more and more as a competitive weapon or competitive advantage. Customers all over the world have become so demanding and expect good quality, therefore today quality is no longer a competitive advantage, but it is a sheer necessity to survive in the marketplace Djerdjour & Patel (2000). Therefore, quality has to be designed and built into products and not just “inspected” into products. In order to design and manufacture quality into products, quality must be managed, and in order to effectively manage quality its meaning must be clearly understood, i.e., quality must be clearly defined.

The definition of quality depends on the role of the people defining it. Today, there is no single universal definition of quality and even well-known authors seem to have different perspectives on this issue. Some people view quality as “performance to standards.” Others view it as “meeting the customer’s needs” or “satisfying the customer”.

The word Quality has assumed various connotations for people and organizations in the world over. It is the degree of ‘excellence at an acceptable price and the control of variability at an acceptable cost’ Broh (1982). There are many other
views expressed by men of eminence ‘conformance to requirements’ Crosby (1992)\textsuperscript{10}, ‘fitness for use’ (Juran 1982\textsuperscript{11}, 1988\textsuperscript{12}), ‘conformance to specification’ Gilmore (1974)\textsuperscript{13}, ‘meeting the needs and exceeding customer’s expectations’ Deming (1982)\textsuperscript{14}, ‘as excellence’ Peters and Watermon (1982)\textsuperscript{15}, ‘the language of statisticians’ Shewhart (1986)\textsuperscript{16}, ‘anything that can be improved ‘ Imai(1986)\textsuperscript{17}, ‘meeting and minimizing dissatisfaction of customer’ Singh (1997)\textsuperscript{18}, exceeding and delighting customer needs and expectations’ Downey et. al.,(1994)\textsuperscript{19}.

According to Reeves & Bednar (1994)\textsuperscript{20}, a search for the definition of quality has yielded inconsistent results. They emphasize that regardless of the time period or context in which quality is examined, the concept has had multiple and often muddled definitions and has been used to describe a wide variety of phenomena. The strategies and tools for assuring quality may have changed, but the basic customer expectations have been fairly constant for a long time.

According to Dale (2003)\textsuperscript{21} and Evans & Dean (2003)\textsuperscript{22} quality, reliability, delivery and price build the reputation enjoyed by an organization. Quality is the most important of these competitive weapons and is an extremely difficult concept to define in a few words in order to agree on a consensus definition.

David A Garvin (1988)\textsuperscript{23} categorizes definition of quality into five principal groups,

1. Transcendent – Quality is neither mind nor matter, but a third entity independent of the two ..... even though quality cannot be defined, you know what it is.
2. Product-based – Quality refers to the amount of the unpriced attributes contained in each unit of the priced attribute.
3. User-based – Quality consists of the capacity to satisfy wants.
4. Manufacturing - based – Quality is the degree to which a specific product conforms to a design or specification.

5. Value- based – Quality is the degree of excellence at an acceptable price and the control of variability at an acceptable cost.

Based on the above definitions of quality by different authors, the following definition of quality was developed “Quality is the degree of value added to products and/or service as perceived by customer through conformance to specifications and the degree of excellence added to products through a motivated workforce, to meet customer satisfaction.”

The importance of quality is not in its meaning as a term, it is being seen more and more as a system involving every aspect of the business to achieve quality.

2.4.3 TOTAL QUALITY MANAGEMENT

Defining of what TQM really is does seem to be a tough job by itself. For instance, Peters and Austin (1985)\textsuperscript{24} summarized TQM as a never – ending journey. Okland (1989)\textsuperscript{25} says TQM is “An approach to improving the effectiveness and flexibility of business as a whole”. It is an essential way of organizing and involving the whole organization, every department, every activity, every single person at every level. Hellsten and Klefsjo (2000)\textsuperscript{26} and Lagrosen (2002)\textsuperscript{27} described TQM as a set of core values, such as customer focus, management commitment, process focus, continuous improvement, and fact-based decisions. (Saraph et.al., (1989)\textsuperscript{28}; Anderson et.al., (1994)\textsuperscript{29}; Flynn et.al., (1994)\textsuperscript{30}; Iyer (2011)\textsuperscript{31}), concludes that there are various definitions and there is no unique definition of TQM, but there is a common thread of customer satisfaction and continuous improvement in almost all definitions of TQM. Some of the definitions of TQM are presented in Table 2.1.
<table>
<thead>
<tr>
<th>Author</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ishikawa (1985)</td>
<td>TQM as a total system approach, and an integral part of high level strategy which works horizontally across functions and departments, involving all employees top to bottom, and extends backward and forward to include the supply chain and the customer chain.</td>
</tr>
<tr>
<td>Oakland (1989)</td>
<td>TQM is an approach to improve competitiveness, efficiency and flexibility for a whole organization.</td>
</tr>
<tr>
<td>Pfau (1989)</td>
<td>TQM is an approach for withdrawals improving the quality of goods &amp; services delivered through participation at all levels and all functions of the organization.</td>
</tr>
<tr>
<td>Milakovich (1990)</td>
<td>TQM is a total organizational approach for meeting customer needs and expectations that involves all managers and employees in using quantitative methods to improve continuously the organization’s processes, products and services.</td>
</tr>
<tr>
<td>Tobin (1990)</td>
<td>TQM as the total integrated efforts for gaining the competitive advantage.</td>
</tr>
<tr>
<td>Hunt (1991)</td>
<td>TQM is not a destination, but a journey towards improvement.</td>
</tr>
<tr>
<td>Zaire and Simintiras (1991)</td>
<td>TQM is the combination of socio-technical process towards doing the right things (external), everything right (internal), first time and all the time, with economic viability considered at each stage of each process.</td>
</tr>
<tr>
<td>Hutchins (1992)</td>
<td>TQM is pure pragmatism</td>
</tr>
<tr>
<td>Ross (1993)</td>
<td>TQM as an integrated management philosophy and set of practices that emphasizes, among other things, continuous improvement, meeting customers’ requirements, reducing rework, long-range thinking, increased employee involvement and teamwork, process redesign, competitive benchmarking, team-based problem solving, constant measuring of results, and closer relationship with suppliers.</td>
</tr>
<tr>
<td>Oakland (1993)</td>
<td>TQM as an approach to improving the effectiveness and flexibility of business as a whole.</td>
</tr>
<tr>
<td>Dean and Bomen (1994)</td>
<td>Quality management as an approach to management comprising mutually supported principles, where each of them is supported by a set of practices and techniques.</td>
</tr>
<tr>
<td>Corrigan (1995)</td>
<td>TQM is a management philosophy that builds a customer driven, learning organization dedicated to total customer satisfaction through continuous improvement in the effectiveness and efficiency of the organization and its processes.</td>
</tr>
<tr>
<td>Dahlgaard et.al., (1999)</td>
<td>TQM is a corporate culture that is characterized by increased customer satisfaction through continuous improvement, involving all employees in the organization.</td>
</tr>
<tr>
<td>Dale (1999)</td>
<td>TQM is the mutual co-operation of everyone in an organization and associated business processes to produce products and services, which meet and hopefully exceed the needs and expectations of customers. TQM is both a philosophy and a set of management guiding principles for managing an organization.</td>
</tr>
<tr>
<td>Source</td>
<td>Definition</td>
</tr>
<tr>
<td>------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Feigenbaum (2001)⁴⁶</td>
<td>TQM is a management approach that encourages everyone in the organization to focus exclusively upon serving the customer.</td>
</tr>
<tr>
<td>Mohanty and Lakhe (2002)⁴⁷</td>
<td>TQM is a pragmatic long term systems approach initiated and driven by the top management to bring about a total cultural change and interlink and integrate every one, every function, every process and every activity of an organization to meet dynamic needs of the customer.</td>
</tr>
<tr>
<td>Khurram Hashmi (2010)⁴⁸</td>
<td>TQM is a management philosophy that seeks to integrate all organizational functions (marketing, finance, design, engineering and production, customer service, etc.) to focus on meeting customer needs and organizational objectives.</td>
</tr>
</tbody>
</table>

Based on these definitions, TQM can be outlined as a vision which the firm can only achieve through long-term planning, by drawing up and implementing annual quality plans which gradually lead the firm towards the fulfillment of the vision, i.e. to the point where the following definition of TQM becomes a reality:

A corporate culture characterized by increased customer satisfaction through continuous improvements, in which all employees in the firm actively participate.

Quality is a part of this definition in that TQM can be said to be the culmination of a hierarchy of quality definitions:

1. Quality – is to continuously satisfy customers’ expectations.
2. Total quality – is to achieve quality at low cost.
3. Total Quality Management – is to achieve total quality through everybody’s participation.

### 2.4.4 ELEMENTS OF TQM

With increased competition, changes in global markets, changes in import-export policies and increased customer consciousness, implementation of TQM has become important aspect. TQM has received global acceptance from 1980 and every organization tries to follow and implement TQM. However, Sink (1991⁴⁰, 1991b⁵⁰) feels that this rush to show the world that the TQM philosophy is being practiced by organizations is made without proper understanding of TQM. Dale and Lightburn (1992)⁵¹ also claim that not all companies are willing to embrace the fundamentals of TQM. It is argued that there are considerable number of companies who are using all
the popular quality management tools and techniques; however, these techniques, procedures and systems are used in a superficial manner. The main reasons for such a situation are lack of management commitment to the basic principles of TQM and quality improvements and ineffective leadership to direct the improvement process.

In order to have a successful implementation of TQM, Several efforts have been done to prove the elements of TQM in the past decade like Ishikawa(1985) identifies top management involvement, emphasis on training and education, a formal organization of quality, the use of informal quality control circles, giving awards and, above all, lots of patience are very important. Sarap et al.,(1989) reported the importance of management leadership, quality policy, quality department, training, supplier quality management, process management, quality data and reporting, and employee relations. Khairul Anuar et al.,(2001) identifies that top management commitment, customer focus, employee focus, quality training, supplier relation, process management are important. Yusof and Aspinwal (2001) identifies that quality management and benchmarking are equally important. Prajogo and Sohal, (2003) reports that the constructs embedded in the TQM practices are leadership, strategy and planning, customer focus, information and analysis, people management and process management. (Sila, 2007) reported that leadership, strategic planning, customer focus, information and analysis, human resource management (HRM), process management and supplier management are important. Through the comprehensive examination of past research, which includes the criteria of the most esteemed quality award such as MBNQA (2005), eight dimensions of TQM practices were formed to signify the main TQM practices in this research study. These are explained below with an intension of describing the theoretical background in which the research has been developed. These
are also termed as principles of TQM (Khanna et al., 2007)\textsuperscript{59} or concepts of TQM (Dale H Besterfield, et. al, 2005)\textsuperscript{60} in the TQM literature.

2.4.4 a. Leadership and Top Management Commitment

It is extremely difficult, if not impossible, to implement TQM without commitment from the Top management of an organization. Leadership is the ability to positively influence people and systems under one’s authority to have a meaningful impact and achieve important results. Leaders create clear and visible quality values and integrate these values into the organization’s strategy. Oakland (1993)\textsuperscript{61} urged that successive TQM strategy depends very much on effective leadership. Milakovich (1990)\textsuperscript{62} states that leaders are not just defined by rank, but include all those who own, or empower others to continuously improve processes within their organizations, leaders know how to anticipate customer needs. Kanji (2001)\textsuperscript{63} asserted that top management commitment is the fundamental driver of business excellence. Zaire, et.al.(2010)\textsuperscript{64}, Colurcio (2004)\textsuperscript{65}, in their studies conclude that “in the context of TQM, leadership and top management is not so much about power, authority and control, but more of empowerment, recognition, giving guidance and developing others”.

Leadership and top management commitment role in quality management has been highlighted as one of the crucial requirement for a successful quality improvement implementation. Crosby,(1979)\textsuperscript{66}; Deming, (1982)\textsuperscript{67}; Feingebaum, (1983)\textsuperscript{68}; Garvin, (1988)\textsuperscript{69}; Juran (1988)\textsuperscript{70}, Leiter and Maslach (2002)\textsuperscript{71} consider commitment of senior executive as a more important factor for successful TQM implementation. Sashkin and Kiser (1993)\textsuperscript{72}, Doyle (1992)\textsuperscript{73}, Fenwick.et.al.(1991)\textsuperscript{74}, and Gibson and Smilor, (1991)\textsuperscript{75} stressed that an active commitment from top management is essential for the success of TQM and blamed many of its failures are because of the absence of that leadership.
Leadership is the first criteria building block for the Malcolm Baldrige National Quality Award, EFQM, Australian Quality Award and Canadian Quality award. All these models single out leadership as the “key driver” for successful total quality improvement efforts when considering the Principles and definitions of TQM. Malcolm Baldrige quality award model allots 90 points out of 1000 points (Herschel L. Apfelberg et.al., 1999).  

2.4.4 b. Customer focus and satisfaction

The most important asset of any organization is its customer. Focus on the customers is the key to the TQM philosophy. Success in today’s global marketplace mandates that customer requirements become the cornerstone upon which an organization organizes its resources and dedicates its production. JU et. al.,(2006) states that for business to be successful every decision made should be customer centered and must incorporate suggestions made by customers to satisfy customer needs.

Lindsay & Petrick (1997) reports that now a days the challenge for the top management of an organization is to assist organization in improving the human and technical dimensions of organizational systems by focusing on increasing customer satisfaction. Capezio & Morehouse (1993) comment that quality begins and ends with the customer, Craig Cochranm, (2009) states that customer satisfaction is the major purpose of a quality management system. The most successful TQM programs begin by defining quality from the customer’s perspective. As defined in earlier sections, quality means meeting or exceeding the customer’s expectations. Dr. Deming added that quality also means anticipating the future needs of the customer. Customer satisfaction, not increasing profits, must be the primary goal of the organization. It is the most important consideration, because satisfied customers will lead to increase profits.
Successful organization gives high priority in understanding and responding the
customers (both internal and external) current & future needs. Shiba et. al. (1993)\textsuperscript{81},
Burchil and Shen (1995)\textsuperscript{82} stated that the goal of Quality Function Deployment (QFD)
is to move from invisible or vague feelings of the customers to clear, grounded
customer requirements that serve real customer needs.

Brah et al.,(2000)\textsuperscript{83} and Sila, (2007)\textsuperscript{84} both mentioned that a firm’s success in
the long run is depended upon how its customers’ needs are satisfied effectively and
efficiently on a continuous basis. Stankosky and Baldanza (2001)\textsuperscript{85}, comment that it is
of utmost importance to understand the needs and problems of customer as these are the
main factors for continuous improvements and innovation to any company to be
successful. According to the review from Hackman and wageman (1995)\textsuperscript{86}, obtaining
information about customer is one of the most widely used TQM implementation
practices to improve quality performance of the organization.

The criteria for the Malcolm Baldrige National Quality Award, EFQM,
Australian Quality and Canadian Quality Criteria identifie customer satisfaction as the
key focus for quality improvement efforts. Malcolm Baldrige quality award model allots
250 points out of 1000 (Herschel L. Apfelberg et.al., 1999)\textsuperscript{87}.

2.4.4 c. Suppliers Management

Supply management is an integrating philosophy to manage the total flow of a
distribution channel from supplier to ultimate customer (Ellram and Cooper, 1990)\textsuperscript{88}.
Suppliers quality management incorporates industry proven quality tools and system
that ensures suppliers achieve superior capabilities and deliver best-in-class
performance. As early as 1982, the father of modern management, Peter Drucker
mentioned about the importance of the correlation between the producer and the
supplier, but until 90s, the theory of purchasing came up as a new field that was
recognized by the top managers. According to Monczka, Trent & Callahan (1993)\textsuperscript{89} For manufacturers “the challenge is to maximize (supplier) performance better than competitors, for companies spending a high percentage of their revenue on parts and materials, savings are particularly important. In these cases, a saving of 1 per cent on purchasing costs can have the same effect on profit as an 8-10 percent increase in sales. Sandelands (1994)\textsuperscript{90}, Davis (1994)\textsuperscript{91}, Larson.et.al.(1995)\textsuperscript{92} comments that close co-operation with suppliers quickly brings lower unit costs, long-term relation, and even greater quality at lower cost. According to Flynn et. al., (1994)\textsuperscript{93} the supplier quality management is an important element of quality management in an organization because materials and purchased parts are often a major source of quality problems. Materials are often a major source of quality problems and affect buyer satisfaction. The poor quality of supplier items results in extra costs for the purchaser. According to Dale Besterfield et.al., (2000)\textsuperscript{94} developing a long term partnership with suppliers is a key step in reducing an organization cost by reducing procurement errors, and purchasing a good value product or service at a fare price. According to Zakuan et al. (2008)\textsuperscript{95}, effective supplier quality management can be achieved by cooperation and long term relationship with the suppliers. This argument is also supported by Zineldin and Fonsson (2000)\textsuperscript{96}, who found that developing supplier partnership and long-term relationships can increase the organization competitiveness and thus, improve performance. The importance of supplier quality management was also recognized by the Malcolm Baldrige quality award model and allotted 30 points out of 1000 (Herschel L. Apfelberg et.al., 1999)\textsuperscript{97}.

2.4.4 d. Training and Education

Training is a Systematic process through which an organization’s human resources gain knowledge and develop skills by instructions and practical activities that
result in improved corporate performance. Training and education spread the knowledge of continuous improvement and innovation in the process to attain full benefits and business excellence.

**Training** - is a short term, task oriented and targeted on achieving a change of attitude, skills and knowledge in a specific area. It is usually job related.

**Education** - is a lifetime investment. It tends to be initiated by a person in the area of his/her interest.

Oakland (1993) suggests quality training must be objectively, systematically and continuously performed for TQM to be successful.

**Figure 2.2 Model of the Training process**

<table>
<thead>
<tr>
<th>Assessment stage</th>
<th>Training stage</th>
<th>Evaluation stage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organizational Needs Assessment</td>
<td>Design &amp; Select Procedures</td>
<td>Measure Training Results</td>
</tr>
<tr>
<td>Task need Assessment</td>
<td>Train</td>
<td>Compare Results to Criteria</td>
</tr>
<tr>
<td>Development of Training Objectives</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Development of criteria for Training Evaluation</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


Brown (1992a) from his empirical study found that the training process play an important role in creating a supportive culture for TQM. Cocheu (1992) believes that the training can be used to communicate the quality strategy. Sharma (2005) carried a study on sixty six Indian engineering industries and revealed that around 80%
of the surveyed companies across the industrial group were engaged in doing systematic identification and assessment of training needs of personnel performing activities directly affecting quality. Reed et al., (2000)\textsuperscript{103}, Vermeulen and Crous, (2000)\textsuperscript{104} in their research on TQM also found a positive correlation between training and education, and organization performance, further, Talib and Rahman (2010)\textsuperscript{105} reported the critical role of training and education in maintaining high quality level within the industry.

For instance, Anfuso’s (1994)\textsuperscript{106} study in Granite Rock company (A construction materials supplier and manufacturer), which won the Baldrige Award in 1992 found that training efforts have been directly linked to an increase in customer satisfaction.

From the analysis it indicates that quality training of employees plays a key role in effective implementation of TQM program in an organization. The importance of training and education was also recognized by the Malcolm Baldrige quality award model and allotted 50 points out of 1000 (Herschel L. Apfelberg et.al., 1999)\textsuperscript{107}.

2.4.4 e. Team work

The final product usually requires more than one person to complete the job, it is important that a team effort be fostered. A team is defined as a group of people working together to achieve common objectives or goals. Teamwork is the cumulative actions of the team during which each member of the team subordinates his individual interests and opinions to fulfill the objectives or goals of the group.

According to Ooi et. al.,( 2007 b)\textsuperscript{108} team work refers to an increase in employees control over their work and allows them to work as a group. This practice provides an atmosphere of mutual relationship, involvement and participation throughout the organization. Kinlaw (1992)\textsuperscript{109} explained a team based approach to improve the quality at every level. Further, Wilkinson and Witcher, (1991)\textsuperscript{110}, Scholtes
and Hacquebord (1998) provided details of how to work with project teams to implement quality improvement principles. Silos, (1999) suggested that team work will result in more committed and involved employees with the organizations. Teams are useful ways of determining issues, involving those who must indicate solutions and they are crucial to the management for continuous improvement, or driving forces for successful TQM. Yong (2006) comments that the entire organization should work for improving quality and support for quality improvement activities by implementing teamwork practice, formation of teams within an organization is critical to an organization’s TQM success. Ooi et al., (2007b) conclude that team work as a TQM practice is positively associated with employees job satisfaction. Robert (1997) urged that teams are the vehicles for carrying training and explained process of team work and its benefits as follows

**Team work** - Coming together is a beginning.
Keeping together is progress
Working together is success

**Benefits** - Problem solving
Healthy competition
Developing relationship
Everyone has unique qualities

### 2.4.4 f. Continuous Process Management

Continuous process management involves planning and administering the activities that are necessary to achieve high level performance in a process and to identify the opportunities for improving the quality and ultimately customer satisfaction. According to Sit et.al., (2009), Zairi, (1997), Process management is a systematic approach in which all the resources of an organization are used in most efficient and
effective manner to achieve desired performance. Deming (1986)\textsuperscript{118} emphasized the importance of continuous improvement in his philosophy wherein he states – “Improve constantly and forever the system of production and services, to improve quality and productivity; and thus constantly decrease costs”. According to Flynn et. al., (1994)\textsuperscript{119}, process control and improvement can make the manufacturing process operate as expected, without breakdown. Lewis (1999)\textsuperscript{120} extensively investigated that a culture of continual improvement, driven by measurement, is essential for quality improvement, which influences on the successful implementation of TQM. Appelbaum et. al., (2000)\textsuperscript{121} say that the process-based approach or managing by process improves customer focus and avoids the limitations of managing by vertical functions. Kuhn (2000)\textsuperscript{122} specified that continuous process improvement is of paramount concern and it is one of the core methodologies to sustain and guarantee quality of products and services. Motwani (2001)\textsuperscript{123} commented that process management stresses the value adding to a process, increasing the productivity of every employee and improving the quality of the organization. Sureshchandar et al.,(2002)\textsuperscript{124}; Black & Porter, (1996)\textsuperscript{125} reported that continuous process management is practiced in all operations. In many empirical studies, Flynn et al. (1995)\textsuperscript{126}; Cua et al. (2001)\textsuperscript{127}; Prajogo and Sohal (2004)\textsuperscript{128}; Feng et al. (2006)\textsuperscript{129} systematically investigated the relationships between process management and quality performance. The results of these studies showed positive correlation between them. The importance of process management was also recognized by the Malcolm Baldrige quality award model and allotted 110 points out of 1000 (Herschel L. Apfelberg et.al., 1999)\textsuperscript{130}.

\textbf{2.4.4 g. Quality Performance Measurement}

Managing an organization without performance measures is like a captain of a ship navigating without instrumentation. The ship would most likely end up travelling
in circles, as would an organization. Juran and Gryna (1993)\(^{131}\) stated that a formal performance measurement of quality offers a starting point by providing an understanding of the size of the quality issue and the areas demanding attention. Performance measurement can identify the difference between actual performance and the goal. Oakland (1993)\(^{132}\) says that a successful implementation of TQM program depends on measurement procedures. Measurement is important in identifying opportunities and comparing performance both internally and externally. Ansel (1993 a)\(^{133}\) urges that without measurement, quality is just warm feeling and costly overhead. Capon et.al.,(1995)\(^{134}\) identifies few measurement tools like customer surveys, employee surveys, and analysis of complaints, supplier assessment and QFD. Motwani et al.,(1994)\(^{135}\) says that evaluating the situation in a firm’s quality management practices provides an important base for the firm to improve its quality management practices. Dale Besterfield et.al.,(2005)\(^{136}\) opine that measures play a vital role in the success or failure of an organization and suggest few items that can be measured like human resource (time lost due to absenteeism, training cost per employee), customer (number of complaints, customer satisfaction index), production (inventory turns, process yield, cost per unit), R&D (new product time to market, average time, cost estimating errors), suppliers (billing accuracy, Just-in-time, delivery target), sales (new customers, sales income, number of successful calls), administration (revenue per employee, cost of poor quality, order entry). Lakhal et al. (2006)\(^{137}\) claimed that there is a significant relationship between performance measurement and organizational performance. This argument was also supported by Schevermann et al. (1997)\(^{138}\). The importance of quality performance measurement was also recognized by the Malcolm Baldrige quality award model and allotted 250 points out of 1000 (Herschel L. Apfelberg et.al., 1999)\(^{139}\).
2.4.4 h. Benchmark

- Learning from others’ success.
- Finding and implementing best practices.

Benchmarking is a powerful tool to use as a continuous process of evaluating a firm’s products, services, and processes against those of its toughest competitors or of firms renowned as world-class or industry leaders. Du Brin (1995)\textsuperscript{140} says that benchmarking is a point of reference by which performance is judged or measured; According to Hackman and Wageman (1995)\textsuperscript{141} benchmarking is an effective tool for guiding the establishment of quality improvement goals, evaluating various activities within the firm, and assessing customer requirements. Sit et.al.,(2009)\textsuperscript{142} state that benchmarking is the process of comparing performance information within the organization as well as outside the organization. It also aims to measure organization’s operations or processes against the best-in-class performers from inside or outside its industry.

Boxwell (1994)\textsuperscript{144} identifies three reasons for benchmarking being used more commonly in industry, they are:

- Benchmarking is a more efficient way to make improvements; managers can eliminate trial and error process improvement. Practicing benchmarking focuses on tailoring existing processes to fit within the organization.
- Benchmarking speed up the organization’s ability to make improvements.
- Benchmarking has the ability to improve corporate performance as a whole significantly. If every organization has excellent production and total quality management skills then every company will have world class standards.
Hutton and Zairi (1994)\textsuperscript{145} opine that the addition of benchmarking provides a complimentary external dimension that can accelerate improvement and galvanize change. Cook (1995)\textsuperscript{146} proposed six discrete steps to an effective benchmarking process, they are - identify and understand organizations process, decide what and who to benchmark, collect data, analyze and identify gaps, plan and action improvement and review benchmarking process. The study by Min et. al., (1997)\textsuperscript{147} reported that benchmarking help in continuous service improvements and establish customer satisfaction. Similarly, the study by Yusuf et. al., (2007)\textsuperscript{148} highlighted the usefulness of dynamic benchmarking for improving the performance of an organization and to achieve competitive advantage. The importance of benchmarking was also recognized
by the Malcolm Baldrige quality award model and allotted 15 points out of 1000 (Herschel L. Apfelberg et.al., 1999)

2.4.5 CRITICAL SUCCESS FACTORS

Critical success factors are indicators of what must be achieved if an institution is not only to satisfy its customers but also move ahead on the paths of its vision statements. Although TQM is a proven approach for success in manufacturing, services and the public sectors, many of them have failed in their campaigns because of many reasons like lack of top management commitment, ignoring customers’ and many more. These CSFs are used to access the implementation of TQM philosophy. (Oakland, 1993; Porter and Parker, 1993) comment that the idea of CSFs is to identify a small number of key requirements that are such that if these are measured as being satisfactory towards the evolution of TQM process, the organization generally will be regarded as being successfully on its path for continuous improvement. Several authors have attempted to derive the critical factors using different methods. Flynn et al., (1994) using exploratory factor analysis proposed seven factors based on 48 items. Saraph et al., (1989) pioneered the study of critical factors for TQM and derived a set of eight critical factors of quality management mainly derived from the literature. They defined critical factors as those ‘critical areas of managerial planning and action that must be practiced to achieve effective quality management in business unit’. The study of CSFs was later pursued by others who approached the problem using different methodologies for factors derivation, Porter and Parker (1993), Ahire et al (1996), and Tamimi and Gershon (1995), using a different set of factors Ramirez and Loney (1993), Black and Porter (1996), and replicating the instrument in different cultures and countries Zairi (1994), Badri et. al (1995). Anderson et al., (1995) identified seven CSFs based on 66 items. Khairul Anuar et al.,(2001) proposed seven CSFs.
Rahman (2001)\textsuperscript{163} identified eight CSFs. Li et al.,(2003)\textsuperscript{164} proposed eight CSFs, Muhamad, Kamis and Jantan (2003)\textsuperscript{165} proposed seven CSFs, Wu et al.,(1999)\textsuperscript{166} proposed seven CSFs, Temtime Z. T. (2003)\textsuperscript{167} identified eight CSFs in TQM implementation. Fotopoulos et al., (2010)\textsuperscript{168} surveyed 370 Greek companies and found that Leadership, process management, service design, HRM, customer focus, education and training, and supplier management are critical success factors in TQM implementation.

The present research inquiry is intended to identify the critical success factors of the select printing units using the exploratory factor analysis.

\textbf{2.4.6 TOOLS OF TQM}

The seven tools of statistical process control were first grouped together as a cohesive set by the Japanese quality guru, Kaoru Ishikawa. Following are the seven statistical process control tools.

1. Flow chart
2. Cause and effect diagram
3. Check sheets
4. Pareto analysis
5. Scatter diagram
6. Histogram
7. Control charts

\textbf{2.4.7 BARRIERS TO IMPLEMENTATION OF TQM}

Total quality management (TQM) has been recognized by many practitioners, researchers and academicians for various positive benefits, be it in macro terms of nation’s competitiveness (shaari & Nariai, 2005\textsuperscript{169}; Porter, Takeuchi & sakakibara, 2000\textsuperscript{170}) or to the micro perspectives such as increase firm performances (Evans & Lindsay, 1995\textsuperscript{171}; Abdullah, Uli & Tari 2009\textsuperscript{172}).
Yet many also argue against these benefits. Parncharoen, Girardi & Entrekin (2005)\textsuperscript{173} cited that two third of quality programs fail to show improvement in organizational performance. Some blame on TQM poor implementation (Zairi 1994\textsuperscript{174}; Evans 1995\textsuperscript{175}; Dale et al 2000\textsuperscript{176}; Nwabveze, 2001\textsuperscript{177}) Cultural differences (Parncharoen, Girardi & Entrekin, 2005)\textsuperscript{178}. There is a need to offer insight into barriers that hinder effective implementation of TQM.

Tamimi. N et. al., (2003)\textsuperscript{179} reveals five underlying barriers to TQM namely;

1. Inadequate Human Resource Development & Management
2. Lack of Planning for Quality
3. Lack of Leadership for Quality
4. Inadequate resource for TQM
5. Lack of Customer focus

Rashid-Al-Jalahma and David Gallear (2010)\textsuperscript{180} – say implementing TQM practices and neglecting to address potential TQM implementation barriers may not result in achieving desired objectives. The barriers to implement TQM are many and it is important for all organizations to understand and address these barriers both before and during TQM implementation, in order to address this, they reviewed the research works on literature dealing with barriers in implementation process and identified twenty seven significant barriers. These barriers are grouped into following categories- Top management barriers, Planning barriers, Operational barriers, Resource barriers & Cultural barriers.

Jun et al., (2004)\textsuperscript{181} found high employee turnover, lack of training, and resistance to change are major barriers to TQM implementation. Matta et al., (1996)\textsuperscript{182} found cultural change, failure to involve employees, absence of partnership with
suppliers and customers are the major obstacles. Rajeshekar (2007) found that resistance to change and absence of benchmarking are most important barriers.

2.4.8 QUALITY AWARD MODEL

Quality management is a continuous process. Its essential importance requires vigilant protection from compromises driven by short-term considerations or actions. The grounds well in interest in quality of products and services have created a need for commonly accepted global standards or specifications for quality, as standards for routine activities and as a basis for competition. Quality awards are the prizes or rewards granted to the companies with the highest quality of performance in certain aspects of business by organizations. The main goal of quality awards is to assess the performance of the applying company. The criteria of the quality awards can be used by the companies for self-assessment. The self-assessment process allows the organizations to discern clearly the strengths and the areas in which improvement can be done. There are many international quality awards and Indian quality award models.

2.4.8.1 International Quality Award Models

- The Malcolm Baldrige National Quality Award (MBNQA)
- European Quality Award (EQA)
- The Deming Prize
- Australian Quality Award (AQA)
- Canadian Quality Award (CQA)

In USA, self-assessments are carried out against the Malcolm Baldrige National Award (MBNQA) model. European Quality Award (EQA) is used in European countries and Japanese use Deming Prize. The other two quality awards worth mentioning are Australian Quality Award (AQA) and Canadian Quality Award (CQA) which are popular in Australia and Canada respectively. The Criteria of various quality
awards are given in Table 2.2, significant similarities are observed in the criteria of various quality awards. Leadership, Customer Focus and Continues Improvement are common in all the quality award criteria.

<table>
<thead>
<tr>
<th>Table 2.2 Quality Award Models</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MBNQA Award</strong></td>
</tr>
<tr>
<td>Leadership</td>
</tr>
<tr>
<td>Strategic planning</td>
</tr>
<tr>
<td>Customer &amp; Market focus</td>
</tr>
<tr>
<td>Information analysis</td>
</tr>
<tr>
<td>Human Resource focus</td>
</tr>
<tr>
<td>Process Management</td>
</tr>
<tr>
<td>Business Results</td>
</tr>
<tr>
<td>Impact on society</td>
</tr>
<tr>
<td>Business results</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

2.4.8.2 Quality Award Models in India

A number of quality awards are in operation in India. Few of them are –

- Rajiv Gandhi National Quality Award (RGNQA)
- CII - EXIM Award for Business Excellence Model
- Global Peacock National Quality Award (GPNQA)
- Indian Merchant’s Chamber (IMC) Ramakrishna Bajaj National Quality Award
- MAIT Quality Recognition
- Tata Business Excellence Model.
2.5 EMPIRICAL FRAMEWORK

2.5.1 INTRODUCTION

The discussion in this section is a sequel to the discussion that has figured in the previous section. The various factors responsible for success of TQM, impact of TQM on organizational performance, tools of TQM and so on, have been analyzed and interpreted in the preceding section. The theoretical framework so developed and the review of empirical studies that have gone into TQM practices in general and in printing units in particular, together provide the much needed bases required for the analysis and interpretation of various findings of the present empirical inquiry. The review as already pointed out in the introductory section of this chapter, is also intended to show the awareness and comprehension of the researcher as to the nature and extent of the research that has gone into the area of research related to the present topic. The review, also, indirectly identifies the research gaps which lends authenticity and justification to the present piece of research.

Only a few studies on TQM practices have been made at both global and national levels. That is to say that not much research has gone into the field of TQM practices, there are vast areas which remain unexplored. Writing on this aspect, Flynn et al., (1994)\textsuperscript{184} opined that very little empirical researches focus specially on quality management practices despite the prevalence of TQM in the literature. Anisur Rahman et al.,(2013)\textsuperscript{185} carried an investigation to know quality control practices within the manufacturing industries in the Western region of the Kingdom of Saudi Arabia and found that many companies have a low level awareness of TQM implementation and its benefits.

Rahman (2001)\textsuperscript{186} says, while there is a growing body of literature studying the linkage between quality management practices and performance, most research is not
empirically-based. Philip Muturi et al., (2013)\textsuperscript{187} carried a survey in Kenyan small and medium manufacturing industries with the prime purpose of investigating the status and level of quality management practices, they conclude saying that the level of quality management practices implementation among these industries has been far below expectations. Motwani et al., (1994)\textsuperscript{188} carried a study to identify the degree to which quality management practices were present in Indian manufacturing organizations, they found that implementation of TQM in India is at nascent stage. The empirical study carried by Singh (1991)\textsuperscript{189} revealed that very few companies were adopting TQM practices in India. Furthermore, Charu Gupta et al. (2014)\textsuperscript{190} noted that little discussion has focused on Total Quality Management (TQM) implementation methodologies and that further work in the area is called for.

In this regard, it is pertinent to point out that most of the works that pass through this section are of western region and on the TQM practices of the firms located in the west and especially in the USA. And a few works are on the companies located in Asia. Of course, a few works are also done by Indian researchers on the firms located in India. But, the majority of the works western or eastern-are of manufacturing and service and only countable on printing press. Some researchers, mostly academicians working in the universities, research institutes and affiliated colleges in Karnataka and Tamil Nadu have also done some works in TQM related matters, if not directly on the TQM practices of printing press, such works are also reviewed in this section.

Another thing which demands attention in this introductory section is the academic fact that hardly any research has gone into the TQM practices of the printing press located in North Karnataka. The topic is yet to catch the attention of the research scholars working in the various universities and their post-graduate centers in Karnataka.
2.5.2. EMPIRICAL FRAMEWORK RELATED TO FACTORS RESPONSIBLE FOR THE SUCCESS OF TQM

S B Mallur et al., (2010)\textsuperscript{191} carried an empirical survey to know the status of TQM practices in North Karnataka manufacturing SMEs, their results revealed that TQM implementation among these units has been far below South Asian countries, they also identified that these SMEs lack in leadership commitment, process quality improvement, employee involvement, and work environment culture. Paige Cornelison (2013)\textsuperscript{192} conducted a survey on printing units across the country of California and found that factors such as Customer focus, employee involvement, and continuous improvement are indispensable in quality improvement process and he also observed that the vast majority of employees of printing companies have heard of Total Quality Management-but often do not actually have a clear understanding of what Total Quality Management is. John D. Miller (1995)\textsuperscript{193} in his dissertation entitled “A Case Study of the Effects of Implementing Total Quality Management at Perry Printing Corporation and Implications for Adult Learning”, he concludes that employee involvement and participation, quality tools, communication, training are critical factors. Goyal et al., (2010)\textsuperscript{194} conducted a study in India whose main objective was to improve the quality of print jobs and they concluded that continuous improvement and training are important factors. Davor Donevski et al., (2009)\textsuperscript{195} carried a survey on thirty small, mid-sized and large Croatian print shops to know the status of TQM implementation and they concluded that, they have not yet adopted the concepts of TQM and technology imposed quality and process management, quality control and Continuous improvements are important factors.

Ooi et al., (2008); Hoang et al., (2006), an extensive literature review of these studies have provided different set of factors considered essential to the success of TQM implementation, but no study has identified a common set of factors for successful implementation of TQM, though we have many quality award models which provide a useful frame work for industries and helps in implementing TQM and measure business performance. According to Bayraktar et al., (2008) leadership, vision, measurement and evaluation, process control and improvement, program design, quality system improvement, employee involvement, recognition and award, education and training, stake holder’s focus are identified to be the most important factors. A study on ISO 9000 certified organizations of Taiwan performed by Jeng (1998) examined linkage between quality management & business performance & found that customer focus as the most powerful practice.

Based on the empirical studies Ho and Fung, (1994); Mann and kehoe, (1995); Powell (1995); Black and Porter (1996); Choi and Eboch, (1998), a total of forty eight significant TQM factors are identified and are categorized into eight major TQM practices namely, Top management Commitment, Quality planning, Customer and market focus, Employees focus, Information management, Process Control, Supplier management, and Quality measurement. A number of other scholars (Capon et al., (1995); Curkovic et al., (2000); Dean and Bowen, (1994); Evans and Lindsay (1999); Juran (1995); Ahire et al., (1996); Flynn et al., (1994); Samson and Trziovski, (1999); Saraph et al., (1989), have supported that the identified eight factors given above adequately explain the context of TQM.
2.5.3 EMPIRICAL FRAMEWORK RELATED TO IMPACT OF TQM ON BUSINESS PERFORMANCE

A considerable body of empirical evidence suggests that TQM implementation improves business performance. Lee et al. (2003)\textsuperscript{220} investigated the existing status of TQM practices in 112 SMEs (manufacturing firms) of China and observed a positive influence of TQM on firms performance. Dr. Vinod Singhal and Dr. Kevin B. Handricks (2000)\textsuperscript{221} surveyed 600 quality award winners, among which 75\% were from Manufacturing Sector and the other 25\% from service sector. They examined performance over two to five year periods. The first period—the post implementation period, and the second period—the implementation period, to measure the performance, benchmark firms were generated by matching each award winner with benchmark firm of similar size from the same industry, and the result was, there was no significant difference in performance during implementation period, while the results of the post-implementation period indicated that quality award winners outperformed the benchmarks on almost every performance measures. Brah et al. (2002)\textsuperscript{222}; Powell, (1995)\textsuperscript{223}, conclude that TQM adopting firms obtain a competitive advantage over firms that do not adopt TQM. Therese A, Jioner (2007)\textsuperscript{224}; Douglas and Judge’s (2001)\textsuperscript{225}, support saying that the degree of implementation of TQM practices is positively related to business performance. Christos B., Fotopoulos and Evangelos L., Psomas (2009)\textsuperscript{226}; Raj Kumar, Dixit Garg and T-K Garg (2009)\textsuperscript{227}; M. Waqas Raja, Mohmood Ahmad Bodla, Shahab Alam, Malik (2011)\textsuperscript{228}; discussed the impact of TQM on Business performance and found that there is positive impact like increase in profits, improved competitive position, improved performance and increased sales, while customer satisfaction is measured by decline in customer complaints, increase in loyalty and customer retention rate.
Parzinger and Nath (2000)\textsuperscript{229} examined the link between TQM & software quality & found that TQM implementation improves the software quality & performance. Hassan and Kerr (2003)\textsuperscript{230} studied the relationship between TQM practices & organization performance in service organizations and discovered that TQM leads to higher productivity and quality performance. Prajogo and Brown (2004)\textsuperscript{231} conducted an empirical study within Australian organizations to investigate the relationship between TQM and business performance, the results indicated a strong and positive linkage. Brah and Lee (2002)\textsuperscript{232} examined the relationship between TQM & organizational performance of Singapore Companies, and found that TQM leads to business performance and have positive co-relation. A study utilizing structural equation modeling (SEM) approach by Sanchez - Rodriguez et al., (2006)\textsuperscript{233} provided insights into the current Information Technology (IT) and TQM on operational and business performance, they found TQM generates significant positive gains on operational & business performance. In support to this Prajogo and Sohal (2004)\textsuperscript{234} also employed SEM approach for data collected from 194 Australian firms to examine the multidimensionality of TQM in relation to business performance and found that TQM has positive co-relation with business performance. An empirical study conducted by Arumugam et al., (2008)\textsuperscript{235} explored relationship between TQM and business performance on ISO 9001:2000 certified manufacturing organizations in Malaysia and revealed that TQM partially co-related with business performance. Anderson & Sohal (1999)\textsuperscript{236} studied the impact of TQM and related improvements strategies on performance of Australian SME’s by using Australian quality awards frame work to determine the relationship between TQM practices and business performance and observed a positive co-relation between TQM practices and organizational performance of SME’s. Vincent K. Chong., Michael J. Rundus (2004)\textsuperscript{237} explored the impact of
TQM on organizational performance by questionnaire survey from eighty nine managers of manufacturing firms, results showed that there is a positive co-relation between TQM and organizational performance. Chong Y., Lee and Kelce (2003) investigated TQM practices in 112 SME’s of China and its impact on their performance, positive influence of TQM was observed on performance.

Performance of SME’s was observed in Malaysia by Sohail and Hoong (2003); in India by Mahadevappa B. and Koreshwar G. (2004); in Portugal by Sousa, Aspin Wall and Rodrigues (2005); in Spain by Bou and Beltrain (2005); in Turkey by Demirbag and Zaim (2006); in Pakistan by Shahab Alam Malik, Muhammad Zahid Iqbal, Razia Shaukat & Jaiyong (2010), all researchers were of the view that TQM is very much required for continuous improvement of the overall business performance.


Table 2.3 shows the different empirical studies of TQM practices and their positive significance with their business performances.
Table 2.3 Examining effect of TQM practices on performance

<table>
<thead>
<tr>
<th>Study</th>
<th>Research examining the effect of TQM practices on quality, business &amp; organizational performance</th>
<th>Sig</th>
<th>r</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vinuesa &amp; Hoque 258</td>
<td>TQM practices are positively associated with quality performance</td>
<td>P&lt; 0.01</td>
<td>0.42</td>
</tr>
<tr>
<td>Zehir et al., (2012) 259</td>
<td>TQM practices are positively associated with quality performance indicators.</td>
<td>P&lt; 0.01</td>
<td>0.439 to 0.559</td>
</tr>
<tr>
<td>Prajogo (2005) 260</td>
<td>TQM Model has significant strong impact on quality performance in the organization</td>
<td>P&lt; 0.05</td>
<td>0.56* β value</td>
</tr>
<tr>
<td>Venues (2014) 261</td>
<td>TQM practices are positively associated with the business performance</td>
<td>P&lt; 0.01</td>
<td>0.35</td>
</tr>
<tr>
<td>Solis et al., (1998) 262</td>
<td>Business performance is highly co-related with TQM implementation</td>
<td>P&lt; 0.01</td>
<td>n. a.</td>
</tr>
<tr>
<td>Gadonne &amp; Sharma (2002) 263</td>
<td>TQM practices improve business performance</td>
<td>P&lt; 0.05</td>
<td>0.013 to 0.572</td>
</tr>
<tr>
<td>Lagrosen S &amp; Lagrosen Y (2003) 264</td>
<td>TQM have significant impact on improving business performance</td>
<td>P&lt; 0.05</td>
<td>0.038</td>
</tr>
<tr>
<td>Karani &amp; Bichanga (2012) 265</td>
<td>Organization’s performance is highly co-related with TQM implementation</td>
<td>P&lt; 0.01</td>
<td>0.87</td>
</tr>
<tr>
<td>Joiner (2007) 266</td>
<td>High co-relation between TQM practices and organizational performance</td>
<td>P&lt; 0.01</td>
<td>0.63</td>
</tr>
<tr>
<td>Malik et al., (2008) 267</td>
<td>Positive co-relation between TQM practices and organizational performance</td>
<td>P&lt; 0.01</td>
<td>.18 to .84</td>
</tr>
<tr>
<td>Terziovski &amp; Samson (1999) 268</td>
<td>TQM has a significantly positive effect on organizational performance</td>
<td>P&lt; 0.01</td>
<td>42.88**F value</td>
</tr>
<tr>
<td>Chong &amp; Rundos (2004) 269</td>
<td>TQM practices focused on product design are positively associated with organizational performance</td>
<td>P&lt; 0.05</td>
<td>0.251</td>
</tr>
<tr>
<td>Musran munizu (2013) 270</td>
<td>TQM practices has a significant positive effect towards organization performance</td>
<td>P&lt; 0.05</td>
<td>0.285</td>
</tr>
</tbody>
</table>

Note:- N.A.= not available, * = β value, **= F value, r= person correlation coefficient, Sig = significance.

2.5.4 EMPIRICAL FRAMEWORK RELATED TO TQM TOOLS

Melsa J L (2000) 271 says that there are a wide range of TQM tools, there is no tool that is best for every application and the knowledgeable practitioner is aware of rich variety of tools and uses the appropriate one(s).

Goyal et al., (2010) 272 in his case study on News paper printing press says using “Five why” or “Why- Why” analysis and using daily control charts there was significant quality improvement and also reduction in paper waste.

John D Miller (1995) 273 in his case study to know the effect of TQM on printing press, he concludes that participation and involvement of employees is very
much necessary for success of TQM, he also found various quality tools like diagrams and control charts are used for process improvement.

Paige Cornelison (2013)\(^{274}\) in his case study to know the effectiveness of TQM in printing press, he surveyed premier press in Portland, Oregon Co. and found that they used several TQM tools like “Five why” and “Five S’”s, Smyth Co. used TQM tools like Root cause analysis and control charts and concludes that implementing these tools the companies increased their profit by reducing their manufacturing cost.

Mukandan R Team Consultant Chennai in his case study, to know TQM practices in Indian organizations finds that Perfect Machine Tools treat quality as leadership and uses flow chart as quality tool, Modi treat quality as System and uses quality improvement process chart as quality tool, Ranbaxy treat quality as manufacturing and uses quality production chart as quality tool, Thermax treat quality as after sales service and uses cause and effect diagram as quality tool to ensure timely spares, Hindus Lever treat quality as marketing and uses marketing flow chart as quality tool, Infosys treat quality as HRD and uses quality flow chart to HRD as quality tool, and concludes that using these tools these companies are flourishing well.

2.6 CONCLUDING REMARKS

A succinct summary of the two Principle Components of this Chapter is given here as a part of recollection exercise.

Most of the important practices of TQM and not all- are discussed in some detail. While doing so, their distinction, interrelations, and bearing on customer satisfaction, competitive advantage and business performance are also interpreted with a view to lending authenticity to this exercise, the discussion is supported by some of the works of researchers on TQM- the topics that have passed through the theoretical
framework (section 2.4.4; 2.4.5; 2.4.6; 2.4.7; 2.4.8) include elements of TQM, critical success factors of TQM, tools of TQM, barriers to implementation of TQM, quality award models, and so on.

The empirical framework carries the review of some of the important empirical studies done on factors responsible for success of TQM, impact of TQM on business performance, tools of TQM. It is pertinent to note that most of the works are of western region and that too concentrated in USA and few Asian countries, and most of them are manufacturing & service industries, only a few works are on printing units. Researchers have opined that there is a paucity of works on TQM of printing units in India in general and in North Karnataka in particular. There is also lack of research interest in academicians in the study area of this research inquiry. Thus, objective one “it is planned to make a relatively comprehensive survey of the theoretical and empirical works pertaining to different TQM practices” gets fulfilled with it.

From the above theoretical and empirical framework, the researcher draws the following conclusions:

The problems faced and benefits resulting from implementing TQM in printing press are under researched. Though implementation of TQM in manufacturing sector began in 1995, its implementation is at nascent stage in the Indian printing sector. The neglected sector is in need for an earnest effort to assess the extent of awareness and implementation of TQM in select printing units which upholds the second objective “it is intended to know the extent of awareness of TQM among the respondents of the select printing units”.

Only awareness is not enough to improve the performance, this awareness must be implemented to get the results. There is a need to offer insight into to know the level of implementation of TQM in select printing units, with an intention to know the level
There are many hindrances for implementing TQM. Researchers have identified several important barriers for implementing TQM. The main barriers include ‘poor implementation’, ‘cultural differences’, ‘lack of leadership commitment’, ‘lack of customer focus’, ‘lack of HRM’, ‘lack of training’, lack of benchmarking,. There is a need to offer insight into barriers that hinder effective implementation of TQM in select printing units, which upholds the fourth objective “To identify the major barriers to TQM implementation in the select printing units”.

The number of critical success factors of TQM implementation identified by different researchers varies from six to eight. From the empirical studies it is clear that most of the researchers Saraph et al., (1989), Bayraktar et al., (2008), Capon et al., (1995), Flynn et al., (1994); concluded that top management commitment, customer focus, employee involvement; supplier partnership; performance measurement are very important critical success factors of TQM. With a view to identify the critical success factors of TQM of select printing units, the fifth objective “it is intended to identify the major success factors in the select printing units” is set.

The empirical framework reveals that the implementation of TQM has a positive impact on business performance. From the empirical research it is clear that there is positive impact like increased sales, customer satisfaction. With a view to know the impact of TQM on business performance of select printing units, the sixth and seventh objective “to determine the influence of TQM practices on the business performance of select printing units in terms of turn over” & “to evaluate the impact of TQM practices of select printing units on customer satisfaction” are set.
The empirical framework reveals that the tools of TQM are very important and the companies implementing these tools increased their profit by reducing their manufacturing cost. With an intention to benefit the printing units in general and that of select printing units in particular. The researcher makes an attempt to design a print Job flow chart of printing unit, design cause and effect diagram to trace the problems and design cause and effect diagram to find the solutions for the problems, which upholds the eighth objective “To observe the printing process and to design a printing Job flow chart, design cause and effect diagram to trace the problems, design cause and effect diagram to find the solutions for the problems”.

The researcher draws on this review, while interpreting her own empirical findings pertaining to the 130 select printing units. She also makes an attempt to draw her conclusions, based on her own findings. However, she does make reference to the findings of other researchers wherever appropriate. Of course, the principal purpose of the review exercise is to lend authenticity and justification to the present research inquiry, inter alia, by showing the researcher’s awareness and comprehension of the research efforts that have been made by others on the related topics here and elsewhere.
REFERENCES


80. Craig Cochranm (2009) Becoming a customer focused organization. Georgia institute of technology


221. Dr. Vinod Singhal and Dr. Kevin B. Handricks (2000), The impact of Total Quality Management (TQM) on Financial Performance, Evidence from Quality Award Winners.


CHAPTER - 3

PROFILE OF STUDY AREA AND THE SELECT PRINTING UNITS

3.1 Introduction

3.2 Chapter - Specific Methodology

3.3 Some Reflection on the region’s History

3.3.1 Governance and Administrative set up

3.3.2 Natural Resources

3.3.3 Population and Demography

3.3.4 Industrial Development

3.3.5 Social Sector Development

3.3.6 Economic Infrastructure

3.3.7 Human Development

3.4 Profiles of select Printing units

3.4.1 An Overview of the select Printing units

3.4.1.1 Profile of Multi-colour Printing units

3.4.1.2 Profile of Single-colour Printing units.

3.5 Concluding Remarks

References