

## **Determining the Critical Success Factors of Total Quality Management (TQM) for Sustainable Social Development**

Md. Sajedur Rahman<sup>1</sup>

***ABSTRACT:** Many organizations have looked upon total quality management (TQM) as the way by which they could maintain a competitive edge, in recent years. Thus, this study attempted to identify the critical success factors (CSFs) of total quality management (TQM) implementation. Furthermore, this study has reviewed many related literatures which is closely relevant to critical success factors of TQM and its implementation in various sectors. The review is focused on the implementations, the impacts on the organization's performance and the encouraged indicators to the adoption of TQM in the organization. This study concludes the critical success factors of TQM implementation. Because of lack of identified reason, many organizations do not adopt TQM approach into their organization. However, certain organization already identified the benefits from TQM implementations on their organization performance and they believe this approach could give them a chance to achieving their goals towards sustainable social development.*

***Keywords:** Total Quality Management, Critical Success Factors, Quality programs, Sustainable Social Development.*

### **1. Introduction**

With the rapid globalization of the world economy, corporations in all sectors are faced with a changing competitive environment. They are competing in creating the conditions that will enable them to be competitive in the worldwide market places. Globalization of market economies has forced organizations to focus on maintaining a sustainable competitive edge, which is directly, related to the upkeep of

---

<sup>1</sup> Assistant Professor, Department of Business Administration, School of Business and Industrial Development, Central University of Science and Technology (CUST)-Bangladesh.  
Email: sajedurr@gmail.com

## *Determining the Critical Success Factors of Total Quality Management (TQM) for Sustainable Social Development*

quality - both in terms of products and services. An effective model of such a vision of success is Total Quality Management (TQM), which is an integrative management philosophy for an organization, centered on quality i.e. continuously improving the quality of products, processes and services, based on the participation of all its members and aiming at long-term success through customer satisfaction, and benefits to all members of the organization and to society. The present conditions have forced companies to bring out changes in their practices. This has resulted in the introduction of new quality approaches in lieu of old traditional quality systems to deliver high quality goods and services. Companies that can deliver quality products and services are the ones that will be able to compete on the globalization era (Nkechi Eugenia, 2009). Quality improvement has become a considerable force throughout the world. Although methods to improve and manage quality are numerous, it can be said that TQM is a critical determinant in the success of organizations.

TQM is a concept that has evolved over time and continues to evolve. The Six Sigma concept and its principles evolved out of a similar history with TQM. TQM has changed the face of business as we know it today. By making a good-quality product that sells itself and works reliably for the customer, resulting in customer satisfaction while maintaining the lowest costs possible and selling at the best price the market will bear. TQM principles have determined that individual ownership and pride in workmanship for all departments and employees results in a better-quality goods and services towards sustainable social development.

### **2. Statement of the Problem**

Successful implementation of Total Quality Management (TQM) brings many benefits into the organization. However, in practice many enterprises fail to adopt and implement TQM. Therefore, there is need for a deeper and more systematic assessment of the factors affect on TQM implementation. With this background, this paper attempts to identify and analyze the TQM Critical Success Factors (CSFs). Most of previous research on TQM practices has been done in developed countries.

### **3. Objective of the Study**

Based on the analysis of past research, the purpose of this paper is threefold:

1. To identify critical success factors (CSFs) for TQM implementation,
2. To evaluate the identified factors for effective implementation of TQM and
3. To measure the impact of the TQM CSFs on the operational and the organizational performances in an organization.

#### **4. Methodology of the Study**

In this present study content analysis method has been applied. This paper presents factors determined from a literature study to be important to succeed with the organizational change that TQM implementation. This is a paper based on basically secondary data. Relevant information and data have been collected from books, journals, magazines, national and international dailies, research reports, articles and websites.

#### **5. Literature Review of the Study**

To successfully implement TQM it is important to identify the critical factors required for the implementation process. Saraph et al (1989) defined CSFs as “critical areas of managerial planning and action that must be practiced to achieve effective quality management in a business unit”. These factors may be constructs with latent variables which cannot be measured directly, but can still be assessed indirectly from their manifestation.

**Ahire et al, (1996)**<sup>[2]</sup> expanded the practices even further and identified 12 factors that are critical for the implementation of TQM derived mainly from the literature, these factors are: Top management commitment, Customer focus, Supplier quality management, Design quality management, Benchmarking, use of statistical process control, internal quality information, Employee empowerment, Employee involvement, Employee training, Product quality, and Supplier performance.

**Black and Porter (1996)**<sup>[8]</sup> studied on Baldrige Award criteria, revealing ten critical factors for TQM, these factors are: supplier partnership, People and customer management, customer satisfaction orientation, external interface management, communication of improvement information, strategic quality management, , operational quality planning, quality improvement measurement systems, teamwork structure for improvement, and corporate quality culture.

*Determining the Critical Success Factors of Total Quality Management (TQM) for Sustainable Social Development*

**Fotopoulos et al. (2009)**<sup>[16]</sup> surveyed 370 Greek companies, they find out that, leadership, process management, service design, human resource management, customer focus, Education and Training, and supplier quality management are critical success factors in TQM implementation.

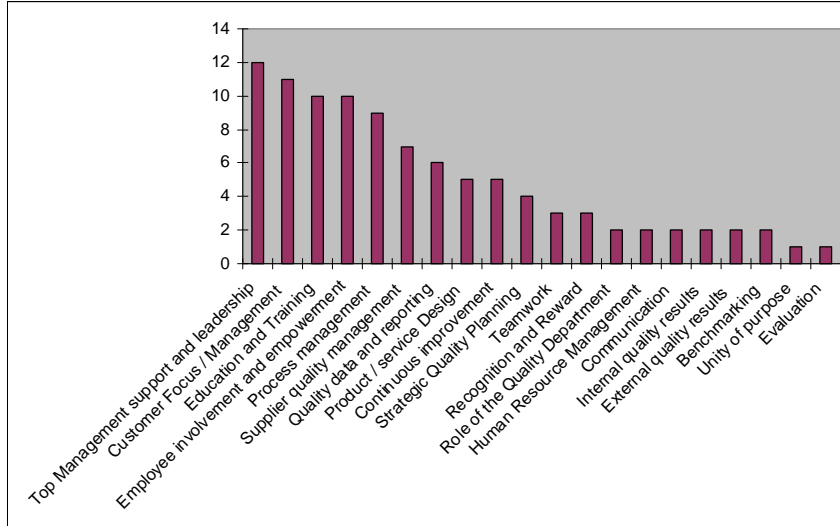
**Saraph et al., (1989)**<sup>[24]</sup> in a pioneering study developed a quality management instrument, identifying eight (8) critical success factors of TQM: Role of divisional top management and quality policy, Role of quality department, Training, Product/service design, Supplier quality management, Process management/operating, Quality data and reporting and Employee relations.

**Sila and Ebrahimpour (2002)**<sup>[25]</sup> examined on reviewing 347 articles on TQM from 1989 to 2000 identified seventy–six studies that employed factor analysis to extract factors for successful implementation of TQM. Out of these, they compiled twenty-five TQM constructs which are widely used by researchers to measure TQM implementation. Their study revealed eight common cores of the factors viz: customer focus and satisfaction, employee training, leadership and top management commitment, teamwork, employee involvement, continuous improvement and innovation, and quality information and performance.

An extensive literature has been carried out to select the various TQM frameworks for this study. The first survey which attempted to identify the critical success factors of TQM, was done by Saraph et al (1989). Some of the other important frameworks given by researchers include that by Flynn et al (1995) which have given details 11 on CSF's of TQM and by Ahire et al (1996) which covers 12 CSF's of TQM. Framework by Zhang et al (2000) gives 11 CSF's of TQM and in addition of these studies, several other empirical studies have also attempted to give a set of various CSF's of TQM. Thus a large number of frameworks are available in literature for manufacturing units to assess their own level of TQM implementation and therefore making it difficult for the organizations to decide upon which set of CSF's to choose. Further TQM is not a step by step technique; rather it is a culture which varies from company to company. Thus implementation of TQM in an organization would demand designing a procedure taking into account the factors and forces prevalent in that organization. (Singla et al, 2008). The below Table has enlisted various researcher based frameworks compared in this study.

	Saraph et. al (1989)	Flynn et al (1994)	Anderson et. al (1995)	Ahire et. al (1996)	Black & Porter (1996)	Wu et. al (1997)	Lee et. al (1999)	Zhang (2000)	Anthony et. al. (2002)	Sila & Ibrahimpour, (2002)	Fotopoulos et. al (2009)	Norhayati et. al. (2015)	Frequency of occurrence
Top Management support and leadership	√	√	√	√	√	√	√	√	√	√	√	√	12
Role of the Quality Department	√								√				2
Education and Training	√		√	√		√	√	√	√	√	√	√	10
Employee involvement and empowerment	√	√	√	√	√	√	√	√		√		√	10
Quality data and reporting	√	√		√		√	√		√				6
Supplier quality management	√	√		√	√			√		√	√		7
Product / service Design	√	√						√		√	√		5
Process management	√	√	√	√		√	√	√		√	√		9
Customer Focus / Management		√	√	√	√	√	√	√	√	√	√	√	11
Unity of purpose			√										1
Benchmarking		√		√									2
Teamwork					√					√		√	3
Strategic Quality Planning					√	√	√	√					4
Continuous improvement			√					√	√	√		√	5
Evaluation								√					1
Recognition and Reward						√	√	√					3
Human Resource Management								√			√		2
Communication									√			√	2
Internal quality results						√	√						2
External quality results						√	√						2

*Determining the Critical Success Factors of Total Quality Management (TQM) for Sustainable Social Development*



**6. Findings: The Critical Success Factors for Effective Implementation of TQM**

The above Table figure shows the comparison of various frameworks as suggested by individual researchers with respect to 12 different CSFs of TQM implementation. Symbol ‘√’ in front of particular CSFs signifies its inclusion in a particular framework. The last column of the table signifies the frequency of occurrence of a particular CSF in all frameworks taken together. The data of frequency of occurrence of CSFs in various research-based frameworks taken together is also shown in figure in the form of a histogram. This figure depicts the CSFs, which got maximum frequency of occurrence. Top Management Support has got the maximum score of 12 and this implies that all the researchers have included this CSF in their framework. CSFs of Customer Focus/Management, Education & Training, Employee involvement and empowerment, process management, supplier quality management have also got a good score, which shows that importance of these CSFs is also emphasized by maximum researchers.

**6.1. Top Management Support and Leadership**

The success of a quality improvement program depends much on the top management commitment. Management commitment involves articulating a vision for the future that is clear and compelling and also providing a strategic leadership. The commitment of top management in creating an organizational climate that empowers employees is necessary. According to Pheng and Jasmine, the degree of management support in TQM implementation is very critical. TQM cannot be

effectively implemented if there is lack of commitment from top management.

Direct involvement of top management allows all decisions to be made quickly and facilitate TQM journey. Top management support is necessary to prove the availability of concrete actions. According Henfusky (1995) the action can be taken to establish the quality policy, establish a quality management structure, attract a whole staff, disseminate information on quality, managing the change process and organize the day of quality.

### **6.2. Customer Focus Management**

Understanding, satisfying and surpassing customer needs and expectations is the primary goal of each organization. Effective TQM implementation requires that great emphasis must be given on customer focus thus achieving high customer satisfaction. The importance of customer satisfaction to the implementation of TQM is seen through three dimensions. The first dimension is the segmentation of customer service to customers is not the same. Organizations need to differentiate services to customers depending on their needs. Red more customers who are served, the more information obtained by the organization. (Gates, 2001) The study by Ross (1999) indicates that a complaint in the service industry represents 26 other clients. If the organization fails to deal with these complaints, it will affect negatively on the organization.

### **6.3. Education and Training**

Training is one of the most important requirements in a successful TQM implementation. Delivery of high-quality services and products requires that employees be equipped with knowledge and skills. All management personnel, supervisors, and employees should accept quality education and training. Training help employees at all levels to understand the quality management system and their roles and responsibilities within it. Training must be viewed as a continuous process. Much research confirms what most organizations already realize, namely, that education and training are an integral and essential part of the TQM initiative (Zhang, 2001). In 2002 Antony et al, identify the following education and training important elements which would lead to successful implementation of total quality management. Blanchard and Thacker (1999) also pointed out that continuous training is not a specialized activity, but the way people behave with the knowledge that all employees ultimately have. Johnson (1994:18) describes that the quality of work could indirectly increase their involvement in the organization. Thus, training can be a tool for achieving quality as recommended by the Stoner et al. (1995:338)

#### **6.4. Employee Involvement and Empowerment**

Employee involvement is frequently recognized as an important TQM CSF. Companies should utilize all employees' skills and abilities. Involvement also instils a better understanding of importance of the product quality in employees and makes them committed to the quality improvement. Employees should feel that they are part of the organization. Employees should be encouraged to control, manage and improve the processes that are within their sphere of responsibility.

According to Chapman (2001), employee engagement can increase the understanding of organizational policies. It involves processes such as lower levels of decision making, adopt the experience, knowledge and the ideas for the advancement of the organization. Employees shall be given due recognition for their contributions and their ideas. It is a psychological process to develop confidence between the members of the organization and encourage them to make decisions and solve problems with each other. Apgar (1999) maintained that job involvement could be produced in the outer and inner self. Internal involvement is influenced by its own commitment. It involves defining the duties of employees entrusted with any evaluated behavior shown by the employee. Involvement also enables management, employees share the resulting performance, and member understanding of the employees will work goals. It is important because without employee engagement, an organization cannot function properly. It is able to provide satisfaction, especially on the quality of working life and increase employee commitment to continuous quality improvement process.

#### **6.5. Process Management**

Process management is a key part of any total quality strategy. There should be strong emphasis on processes that impact on quality of goods and services. Process management focuses on managing processes so that they operate as expected. Thus, to achieve better quality of products and processes, the key processes must be identified and improved continuously. This factor focuses on the extent of the company's commitment in setting and implementing a comprehensive methodology to plan, execute, and develop work systems for all activities within the company. This factor also focuses on promoting excellent policies, procedures, documents and organizational methods. This factor focuses on the organizational structure within the company, and the pursuit of maximum efficiency of coordination between all levels. It points out the importance of having a comprehensive methodology in running the customers' affairs and requirements (Abu-Hamatteh et al, 2003).

### **6.6. Supplier Quality Management**

Supplier quality management is an important aspect of TQM. Selecting a high-quality supplier can improve the quality of products or services, since materials and purchased parts are often a major source of quality problems. Thus, a long-term and cooperative relationship with suppliers is required. The benefits of the development of long-term relationship with suppliers are discussed in.

### **6.7. Quality Data and Reporting**

Data quality monitoring and reporting is an important step for measuring the impact and effectiveness of a data quality program. Measuring and monitoring the data quality of important attributes is essential for the success of business processes in an enterprise. This is the first step towards establishing a continuous data quality improvement process. Data quality metrics collected during the measurement step need to be monitored and compared against the established targets of data quality for a given process.

### **6.8. Product and Service Design**

Product and service design is an important element of successful TQM implementation. The importance of design in the product development process has been emphasized by researchers. Design is recognized as a major determinant of quality. Effective design leads to high level of customer satisfaction.

### **6.9. Continuous Improvement**

Continuous improvement is one of the most important key elements in TQM. Continuous improvement is adopting TQM to improve their performance. Continuous improvement would yield excellence in plan, design, and construction and create a teamwork spirit in the organization. Schminth and Finnegan (1993), views that continuous improvement is able to elevate the performance of an employee who is able to assist in the implementation of TQM provided that the management should reduce the command and control. In TQM, continuous improvement assumes that everything is going well and the value can be increased either slowly or in drastic. It requires the support of all parties because it can lead to progress in their relationship with customers, innovation and organizational development. (Evans and Dean, 2003).

### **6.10. Strategic quality planning**

Strategic quality planning is also an important CSF of TQM. It includes formulation of vision/mission statements, quality policy, use of quality

*Determining the Critical Success Factors of Total Quality Management (TQM) for Sustainable Social Development*

control and other management tool etc. Appropriate systems of quality planning would improve the product quality and therefore customer satisfaction. Quality Strategies and Plans are activities that establish the objectives and requirements for implementing TQM. The plans should be made in such a way that they can be implemented in practice, and should focus on eliminating the major problem areas. When quality plans are drawn up, how to implement them should be well developed. They are useless if they cannot be implemented in practice. All international model such as Deming; Juran; and EQA model focused on this factor because of its importance (Zhang, 2001).

#### **6.11. Teamwork**

According to Rukly (1999), teamwork can unite the entire staff of the organization in the success of quality improvement. In this spirit practiced through cooperation, commitment and participation of staff in the overall quality improvement program initiated by the organization. Therefore, it involves the concerted action of employees, through their role in providing skills, assessment and experience to a particular task.

Teamwork process that resolves the problem of whether small or large, are able to produce innovations that cannot be considered on an individual basis. In terms of physical labor, teamwork is important to the TQM process as it builds self-confidence, improve communication and break the bonds of dependency on the organization (Oakland, 1995). In addition, Schmit and Finnigan (1993:85) consider that teamwork can evaluate the performance of an employee. Besterfield et al. (2003), pursuant there to, teamwork can promote an increase in communication and a co-worker can act as mentors. Teamwork involves face-to-face interactions among members. According to Robbins (2003), it represents a high quality and good performance of an organization as the team dominated by the requirement to implement, achieve and produce a product.

#### **6.12. Recognition and Reward**

According to Oakland (2000), TQM is user-driven. Kemp et al. (1997) consider the recognition procedure as basic to increasing the involvement of all employees in the operation of the business. Many other authors highlight the importance of rewards and recognition in the TQM process (Easton, 1998; Haksever, 1996; Rao *et al.*, 1996; 1999; Li *et al.*, 2001; Dayton, 2001; Martinez-Lorente *et al.*, 1998; Everett, 2002). Firms that are serious about achieving quality and customer satisfaction must integrate these aspects to their recognition and reward system. Johnston & Daniel cited rewards and recognition as one of the

enablers, which maximizes employee's potential and involvement and in doing so become one of the main contributors to the company's journey to quality (Johnston and Daniel, 1991).

#### **6.13. Role of the Quality Department**

The role of the quality department within an organization is to promote and build quality within all departments of the organization. This is in a broad sense. The quality department must help in building systems in place so that they work and communicate effectively about product requirement, performance and testing and be able to identify non-conformity and work with other departments to put in place an effective corrective action and follow-up on its application. Training the manufacturing group can be another role. The role must be complimentary with manufacturing and must not become a policing task. Same time, you must have the absolute powers to stop the production in case a situation demands and work jointly with other departments in correcting the situation.

#### **6.14. Human Resource Management**

Management participation in quality activities is not enough to contribute to quality improvements as costs of total quality is difficult to control by management alone (Khan, 2003). Employees are encouraged to show commitments to quality issues. When workers themselves are committed to delivering quality, they take greater initiative towards meeting product and process specifications; detecting and eliminating bottlenecks; improving product and process designs and setting realistic yet challenging performance targets. This is better enhanced if resources are provided for employees for effective training and developmental activities. The importance is recognized by every quality expert. With TQM, quality becomes everyone's responsibility and the training must be targeted for every level of the company (Arditi and Gunaydin, 1997). Customized training plans or programs should be organized for management, engineers, technicians, home and field office staff, support personnel and field labor in line with quality objectives and goals of the organization.

#### **6.15. Communication (Internal and External)**

The communication process at industry level must improve to create a shared vision for the necessity of implementing the TQM principle and improving the construction processes. The purpose of the communication is not to impose a rigid system from the top, but to prepare the environment for implementing the TQM with support and guidance.

*Determining the Critical Success Factors of Total Quality Management (TQM) for Sustainable Social Development*

According to Schmit and Finnigan (1993), the factor of communication because it helps to allow confidence to others as well as provide encouragement and share the risks. Apart from that, what needs to be in communication is the willingness to listen and learn. According to Apgar (1999), who is able to compete, is an informative, operated by voice, involving two-way communication between employees and management and between organizations with the consumer. Informational means sharing of information developed through the communication process more flexible, informal, mutual respect for each other and focus on priority wise member. Communication by Evans and Dean (2003) is the key to quality improvement as it involves staff to share information through the delivery of a symbolic message as suggested by Stoner et al. (1995)

#### **6.16. Internal Quality Results**

The first and immediate goal of most quality management practices is to improve internal quality performance measures (Steeple, 1992). Internal quality performance (waste, rework etc) is improved when the product components are designed in such a way that is easy to manufacture and assemble. (Rao et al, 1999).

#### **6.17. External Quality Results**

Good quality practices resulting in the improvement of internal quality performance will lead to the improvement of external performance such as competitive market position, profitability and customer satisfaction. (Deming, 1982; 1986). When companies deliver good quality, they generate satisfied customers who reward the organization with continuous patronage and favourable word-of-mouth advertising thus resulting in external quality performance.

#### **6.18. Benchmarking**

Benchmarking is a systematic method by which organizations can measure themselves against the best industry practices. It promotes best superior performance by providing an organized framework through which organizations learn how the best in class do the things, understand how these best practices differ from their own and implement change to close the gap. Many authors see benchmarking as a vital tool in the development of TQM. Benchmarking can be considered as a 'hard' quality practice providing some systematic analysis of the achievement of quality goals. Benchmarking has also been demonstrated to be a catalyst for the success of a number of other organizations change interventions, for example business process re-engineering.

### **6.19. Unity of Purpose**

Total Quality Management is formally defined as management philosophy and company practices that aim to harness the human and material resources of an organization in the most effective way to achieve the objectives of the organization. Total quality management can be summarized as a management system for a customer-focused organization that involves all employees in continual improvement. It uses strategy, data, effective communications and involvement of all level employees to integrate the quality discipline into the culture and activities of the organization. Although an organization may consist of many different functional specialties often organized into vertically structured departments, it is the horizontal processes interconnecting these functions that are the focus of TQM. Basic processes add up to larger processes, and all processes aggregate into the business processes required for defining and implementing strategy. Everyone must understand the vision, mission, and guiding principles as well as the quality policies, objectives, and critical processes of the organization. Business performance must be monitored and communicated continuously. An integrated business system may be modelled after the Baldrige Criteria for Performance Excellence and/or incorporate the ISO 9000 standards. Every organization has a unique work culture, and it is virtually impossible to achieve excellence in its products and services unless a good quality culture has been fostered where everyone works for the quality.

### **6.20. Information Analysis and Evaluation**

Documentation and control of document is an important element which facilitate in the review process, assessment and attainment of quality management in a firm. Review/Audit is an organized effort that promotes quality in designs and construction works.

It is systematic and independent examination to determine whether quality activities and related results comply with planned arrangements, and whether these arrangements are implemented effectively and are suitable to achieve objectives. Quality audit can be used for quality system, processes, products, and services. One purpose of a quality audit is to evaluate the need for improvement or corrective action (ISO 8402, 1994). There are several peer reviews, however, the important once are organizational peer review and projects peer review. The reviews can be focusing on procedures and practices in an organization, designs (aesthetics, functionality capacity, calculations and capacity), standards and regulations, and construction processes. Quality programs should also be reviewed and its status and adequacy to the firm should also be checked regularly. Audit/Review can also be done on Progress and the

*Determining the Critical Success Factors of Total Quality Management (TQM) for Sustainable Social Development*

incorporation of improvements and “lessons learned” into the plan for future years.

**6.21. Quality culture**

Many researchers believe that TQM somehow linked to organizational culture. Culture will affect people’s belief in the implementation of TQM. Creating a culture where all the employees participate in the quality improvement programs is an important CSF. The Lack of a coherent quality culture can present a barrier to cooperation and problem solving across the organization. In order to implement TQM successfully, a culture that is capable of fully supporting implementation is needed.

**7. Recommendations**

Quality management begins with top management commitment however, an appreciable percentage of firm’s top management are not committed to quality management program implementation and improvement. This can be achieved only if top management of these firms develop quality manual and see to its implementation, set objectives and provides requisite training for all of the employees in the firms.

Successful implementation of TQM in the real estate firms can be achieved through developing effective quality management system, persistence, and positive hands on leadership. Accomplishment in quality performance requires that top management should be dedicated to that ambition. In other words, those in top management must provide the initiative, direction commitment, resources for successful quality assurance practices and must support the quality program in the organization if such a program is to be successful.

Finally, it is believed that attention to the eleven factors identified will minimize difficulties related to the implementation of Total quality management and will enhance best performance in companies implementing Total quality management.

**8. Conclusion**

The victory of institutions depends on their management strategy on how to identify, classify, analyze, and react to the effective approach. Although there are more total quality management critical success factors researchers have carried out in various industries, but it is obvious that they are trying to refine the findings of the previous studies. This study reveals that TQM will leave an excellent impact on the institutions goal’s and creates value in enhancing the economic value.

Even though the implementation of TQM brings a wide range of changes in organization, there are lacks of adoption of this approach in several organizations. In conclusion, the proposed conceptual model represents the critical success factors of TQM and its implementation on higher education institutions. It also concludes the impacts on how TQM approach impacts on institutions performance.

### References

- Ahmad, S. and Schroeder, R. (2002), "The importance of recruitment and selection process for sustainability of total quality management", *International Journal of Quality & Reliability Management*, Vol. 19 No. 5, pp. 540-51.
- Ahire, S. L., Golhar, D.Y., and Waller, M.A. (1996), "Development and validation of TQM Implementation Constructs", *Decision Sciences*, Vol.1, No.27, 23-56.
- Anderson J., Rungtusanatham, M., Schroeder, R and Devraj, S. (1995), "A Path analytic mode of a theory of Quality management method", *Decision sciences*, 26 (5), pp 637-658.
- Anderson, M. and Sohal, A. (1999), "A study of the relationship between quality management practices and performance in small businesses", *International Journal of Quality & Reliability Management*, Vol. 16 No. 9, pp. 859-77.
- Antony, J., Leung, K., Knowles, G. and Gosh, S. (2002), "Critical success factors of TQM implementation in Hong Kong industries", *International Journal of Quality and Reliability Management*, 19(5), pp. 55-166.
- Beaumont, N., Schroder, R. and Sohal, A. (2002), "Do foreign-owned firms manage advanced manufacturing technology better?" *International Journal of Operations & Production Management*, Vol. 22 No. 7, pp. 759-71.
- Bentler, B. (1990), "Comparative fit indices in structural models", *Psychological Bulletin*, Vol. 107, pp. 238-46.
- Black, S.A., L. J. Porter (1996): "Identification of the critical factors of TQM", *Decision Sciences*, Vol. 27, No. 1, pp. 1-21
- Brah, S. and Lim, H. (2006), "The effects of technology and TQM on the performance of logistics companies", *International Journal of Physical Distribution & Logistics Management*, Vol. 36 No. 3, pp. 192-209.
- Deming, W. E. (2000), "Out of the Crisis", Cambridge, MIT Press
- Easton, G. and Jarrell, S. (1998), "The effects of total quality management on corporate performance: an empirical investigation", *Journal of Business*, Vol. 71 No. 2, pp. 253-307.
- Fassoula, D. (2006), "Transforming the supply chain", *Journal of Manufacturing Technology Management*, Vol. 17 No. 6, pp. 848-60.
- Feng, J., Prajogo, D., Tan, K. and Sohal, A. (2006), "The impact of TQM practices on performance: a comparative study between Australian and Singaporean organizations", *European Journal of Innovation Management*, Vol. 9 No. 3, pp. 269-78.

*Determining the Critical Success Factors of Total Quality Management (TQM) for Sustainable Social Development*

- Flynn, B. B., Schroeder, R. G. & Sakakibara, S. (1994), "A Framework For Quality Management Research And Associated Instrument", *Journal of Operations Management*, Vol., 11, pp. 339-366
- Flynn, B.B., Scgroeder, R.G., and Sakakibara, S. (1995), "The impact of quality management practices on performance and competitive advantage", *Decision sciences*, 26(5), pp 659-691.
- Fotopoulos, C. B., & Psomas, E. L. (2009). The impact of "soft" and "hard" TQM elements on quality management results. *International Journal of Quality & Reliability Management*, 26(2), 150-163.
- Gulf Organization for Industrial Consulting (2005a), A Report on the Status of SMEs in GCC Countries, Doha, Qatar.
- Gulf Organization for Industrial Consulting (2005b), The 2nd Arabian Symposium on SMEs, Kuwait, May.
- Hafeez, K., Keoy, K. and Hanneman, R. (2006), "E-business capabilities model: validation and comparison between adopter and non-adopter of e-business companies in UK", *Journal of Manufacturing Technology Management*, Vol. 17 No. 6, pp. 806-28.
- Hair, J.F. Jr, Anderson, R., Tatham, R. and Black, W. (1995), *Multivariate Data Analysis*, Prentice-Hall, Upper Saddle River, NJ.
- Hair, J.F. Jr, Black, W.C., Babin, B.J., Anderson, R.E. and Tatham, R.L. (2006), *Multivariate Data Analysis*, Pearson-Prentice Hall, Upper Saddle River, NJ.
- Lee, P.M. and Quazi, H. (1999). "Assessment of quality management performance in organizations", Working Paper, Nanyang Business School, Nanyang Technological University, Singapore.
- Salaheldin, S. I. (2009). Critical success factors for TQM implementation and their impact on performance of SMEs. *International journal of productivity and performance management*, Vol. 58, No. 3, 2009, pp. 215-237.
- Saraph, J. V., Benson, P. G., & Schroeder, R. G. (1989). An instrument for measuring the critical factors of quality management. *Decision Sciences*, 20(4), 810-829.
- Sila, I., & Ebrahimpour, M. (2002). An investigation of the total quality management survey based research published between 1989 and 2000: A literature review. *International Journal of Quality & Reliability Management*, 19(7), 902-970.
- Tamimi, N. (1995). "An empirical investigation of critical TQM factors using exploratory factor analysis", *International Journal of Production Research*, 33(11), pp 304-351.
- Wu, H.Y., Wiebe, H. and Politi, J. (1997). "Self-assessment of Total Quality Management programs", *Engineering Management Journal*, 9(1), pp 2531.
- Yang, C. C. (2006). Establishment of a quality management system for service industries. *Total Quality Management*, 17(9), 1129-1154 Yang, C. C. (2006). Establishment of a quality management system for service industries. *Total Quality Management*, 17(9), 1129-1154
- Zhang, Z., Waszink, A., and Wijngard, J. (2000). "An instrument for measuring TQM implementation for Chinese manufacturing companies", *International Journal of Quality and reliability management*, 17(7), pp. 730-755.