ISSN: 2308-5096(P) ISSN 2311-620X (O)
[International Journal of Ethics in Social Sciences
Vol.2, No.1, June 2014]

An Empirical Study on Total Quality Management Practices in Some Selected Manufacturing Companies in Bangladesh

Md. Zahid Hossain Bhuiyan[1]

Md. Azizur Rahman[2]

Syeda Tanjila Shahnewaz[3]

Abstract

This paper is about total quality management (TQM) practices in some selected manufacturing companies in Bangladesh. The empirical study reports the main findings based on the survey of 150 executives of 15 selected manufacturing companies thereby taking 10 executives from each company. These 10 executives include CEO, head of HR & administration, head of accounts & finance, head of marketing, production manager, quality control manager, finance manager, manager-R & D, production supervisor and HR executive. The main research issues of the study are: examining the relationship between TQM and organizational financial performance, relationship between employees' involvement and TQM results, factors influencing successful implementation of TQM and measuring employees' job satisfaction & commitment. The major findings of the study are: (i) there exists significant positive relationship between TQM practices and organizational financial performance, measured in terms of return on sales (ROS) and return on investment (ROI) (ii) the study reveals that majority of the respondents fall under medium involvement group signifying that employees' involvement in TQM practices have been satisfactory, (iii) the study also indicates that CSFs as mentioned in table 5, have no relationship with TQM practices in the selected companies and (iv) the study points out that employees' job satisfaction & commitment have been moderately related to TQM practices. The findings obtained from the study would be useful to the academicians interested to undertake further research in the vital aspects of HRM. The concerned management would also get the findings of the study helpful in improving TQM practices in the selected companies in Bangladesh.

Key Words: *Total Quality Management, Employees' involvement & commitment, Organizational financial performance, Critical success factor, Job satisfaction, ROI, ROS.*

---

[1] Assistant Professor of Management, Department of Business Administration, International Islamic University Chittagong, Bangladesh, E-mail: zahidsita@yahoo.com, Cell: +8801726104444

[2] Assistant Professor of Finance, Department of Business Administration, International Islamic University Chittagong, Bangladesh, E-mail: aziz_fin_2004@yahoo.com, +8801712176306

[3] Lecturer in Finance, Southeast University, Bangladesh, E-mail: syeda.tanjila@yahoo.com, +8801912700558

1. Introduction

Total Quality Management (TQM) is defined as both a philosophy and a set of guiding principles that represent the foundation of an excellent organization (Bester field *et al*., 1999). It has become an accepted technique to ensure survival in today's industrial economy. Deming (1995) stated that the success of quality management efforts depends on the effective integration of various management subsystems. Several recent studies have attempted to predict customer perceptions of quality in service industries while others engaged in theory-building or principles related to TQM. In addition, some claimed that the successful implementation of TQM could generate improved products and services, as well as reduced costs, more satisfied customers and employees, and improved financial performance (Garvin (1991; Hendriks & Singhal, 1997. Over the past decades, Total quality management (TQM) has been considered as an essential element in organizations that was instrumental in increasing their competitive advantage and overall performance towards achieving world-class status (Lakhe & Mohanty, 1995; Zhang, 2000). The function of TQM is extensively recognized as being a critical determinant in the success and survival of any organization, whether in manufacturing or service industries (Demirbag, Koh, Tatoglu, & Zaim, 2006). Total quality management (TQM) is a key strategy for maintaining competitive advantage and is a way of managing organizations to improve its overall effectiveness and performance towards achieving world-class status (Zhang et al., 2000; Chapman and Al-Khawaldeh, 2002). In today's manufacturing environment, TQM is used as a powerful tool to quantify the way a business functions. Research has confirmed the strategic benefits of quality programs and better quality is proven to contribute to greater market share and return on investment (Cole, 1992; Philips et al., 1983), lower manufacturing costs; improve productivity and improve the area of strategic performance (Garvin, 1983). Outsourced semiconductor assembly and test (OSAT) industry has become the spotlight of global manufacturing industries and is considered to be one of the major contributors to the global economy, and thus, quality management is strategically and tactically important for gaining a competitive advantage (Yang et al., 2003). With the rapid globalization of the Qatari economy, manufacturing firms are faced with a changing competitive environment. They are competing in creating the conditions that will enable them to be competitive in the domestic and international markets. Accordingly, all manufacturing firms seek to adopt and implement a set of operations management practices that have been successful elsewhere and that will help them to identify changes in their environment and to respond proactively through continuous improvement (Fassoula, 2006). One form of operations management practices is TQM which has received great attention in the last two decades (Jung and Wang, 2006). Thus far, much have been written on TQM and its value in improving the performance of manufacturing industries in general. Literature on TQM implementation suggests that the TQM practices are positively associated with operational performance (Choi and Eboch, 1998), but they marginally affect organizational performance (Broetzmann et al., 1995).

Realizing the significance of TQM in the context of employees' satisfaction and commitment, improving the quality of and services, reducing operating cost thereby increasing ROI and ROS etc., the researcher has motivated to undertake the present study in the context of manufacturing industries in Bangladesh.

2. Objectives Of The Study

Broad Objective:

The prime objective of the study is to critically investigate the total quality management practices in some selected manufacturing companies in Bangladesh. However, to achieving this broad objective, the study covers the following specific objectives:

Specific Objectives:

i. To examine the relationship between TQM and organizational financial performance
ii. To examine the relationship between employees' involvement and TQM practices
iii. To identify the factors influencing successful implementation of TQM and
iv. To measure employees' job satisfaction & commitment with TQM

3. Methodology Of The Study

The study is based on the survey of 150 executives of 15 selected private sector listed manufacturing companies operating in Bangladesh, thereby taking 10 executives from each company on the basis of purposive sampling method. These 10 executives include CEO, head of HR & administration, head of accounts & finance, head of marketing, production manager, quality control manager, finance manager, manager-R & D, production supervisor and HR executive.

In the present study, 5 pharmaceutical industries, 5 food & beverage industries and 5 textile industries were selected purposely that have been shown in appendix 1. The requisite primary data were collected from the respondents on the basis of structured questionnaires by direct interview method. Some of the data were collected by using 5 point Likert scale. The major secondary sources of data were collected by the researchers from the annual reports and annual account statements and websites of the companies. In the study, the main measures of financial performance of the companies have been ROI, ROS, ROTA, ROCE, and EPS etc. But, only ROI and ROS have been used in order to examine the relationship between financial performance and TQM, relationship between employee involvement and TQM, relationship between critical success factors and TQM and the relationship between employees' satisfaction & commitment and TQM etc. on the selected companies. The collected data were processed by using SPSS program and the report prepared and presented in the existing form.

4. Literature Review

The study reviews the related literatures on the subject in the following way:

Salaheldin (2009) demonstrated some critical success factors for TQM implementation and their impact on performance of SMEs. The empirical analysis revealed that there exists the

substantial positive effect of the TQM implementation on both the operational and organizational performances of the SMEs. The results showed the central role of the strategic factors in the successful implementation of TQM programs within the SMEs.

Powell (1995) indicated in his study that most features generally associated with TQM such as quality training, process improvement, and benchmarking do not generally produce advantage, but that certain tacit, behavioral, imperfectly imitable features such as open culture, employee empowerment, and executive commitment can produce advantage.

Flynn, B. B. et al (1995) in the exploratory investigation of the relationship of specific quality management practices to quality performance, a framework was constructed. It focused on both core quality management practices and on the infrastructure that creates an environment supportive of their use.

Daniel I. Prajogo et al 2005 explored the relationship between total quality management (TQM) practices and organizational culture with the purpose of identifying the particular cultures that determine the successful implementation of TQM practices. Interestingly, hierarchical culture was found to have a significant relationship with certain practices of TQM.

Mile, T. and Samson, D. (1999) tested the strength of the relationship between TQM practice and organizational performance with and without the covariates, company size, industry type, and ISO 9000 certification status. The study concluded that there were significant differences in the relationship between TQM and organizational performance across industry sectors and different size companies, particularly on the effect of defect rates, warranty costs and innovation of new products.

Karia, N. and Assari, A.H. (2006) examined the impact of total quality management (TQM) practices on employees' work-related attitudes, such as job involvement, job satisfaction, career satisfaction, and organizational commitment. The results indicated that training and education had a significant positive effect on job involvement, job satisfaction and organizational commitment. Empowerment and teamwork significantly enhanced job involvement, job satisfaction, career satisfaction, and organizational commitment.

Anderson, M. and Sohal, A. S. (1999), the paper examined the relationship between quality management practices and performance in small businesses.

Ching-Chow (2006) Confirmed that HRM significantly affects TQM practices. The study concluded that HRM practices have a significantly positive effect on the implementation of TQM. Implementing HRM practices can also have a significant effect on employee and customer satisfaction.

Agus, A. and Abdullah M. (2000) reviewed total quality management (TQM) practices in public listed manufacturing companies in Malaysia. The findings of the study indicated that the length of TQM implementation has a significant impact on the companies' financial performance. The industrial manufacturing companies exhibit higher TQM scores than the consumer manufacturing companies.

Hua, H. et al (2000) examined several relationships, such as the relationship between total quality management (TQM) practices and business results, between ISO 9000 standards and TQM, and between employee involvement and TQM results, etc.

P.L. Goh, K. Ridgway (1994) examined the implementation of Total Quality Management in small and medium-sized manufacturing companies. The study identified five major components of TQM and assessed the performance of the companies relative to these components.

Rahman, Z. and Siddiqui, J. (2006) found to be catching fast in India as a synergy between TQM and IS accrues benefits for improving the quality of products and services – the most common ones being greater customer satisfaction, increased productivity of IS personnel and enhanced quality of services and products.

Keng-Boon Ooi et at (2012) examined the multidimensionality of TQM practices and its relationship with knowledge sharing as perceived by middle management employees in Malaysia's ISO 9001:2000 certified firms of manufacturing sectors. The analytical results revealed that training and development, customer focus, and teamwork showed a positive association with middle management employees' knowledge sharing.

Dizgah, M. R. (2012) investigated the relationship between TQM practices and Organizational Performance. In the study have got mixed result, the relationship between TQM practices and Organizational Performance is positive but one principle (consultation) have negative relationship.

Garcı´a-Bernal, J. and Ramı´rez-Aleso´n M. (2010) examined how firms can increase the benefits traditionally linked to this approach to management. The empirical results showed that adopting total quality management in a way that is consistent with organizational design postulates increases the organizational performance benefits of TQM.

Shammot, M. M. (2011) investigated the links between quality and high organizational performance, taking in account that achieving quality is the responsibility of all the organization members. And how total quality management practices can influence the customer behavior.

Ooi, K. B. et al (2005) examined employees' perceptions of TQM practices and its impact on job satisfaction within a large Malaysian outsourced semiconductor assembly and test (OSAT) organization. The results revealed that teamwork, organizational trust, organizational culture and customer focus are positively associated with employees' job satisfaction.

All the studies reviewed so far are related to foreign context. That means, these studies were based on companies located abroad. So far our knowledge goes, no comprehensive studies based on Bangladeshi companies specially manufacturing has so far been conducted. Hence, there is dearth of literature in this vital area of management. The present study will definitely contribute to the existing stock of knowledge to this issue.

5. Findings And Discussions:

The main findings of the study have been analyzed in the following sub-sections:

5.1 Relationship between TQM and organizational performance

Before establishing relationship between TQM and organizational performance, first of all we are to identify elements of TQM and criteria of measuring organizational financial performance.

5.1.1. Elements of Total quality management (TQM):

The American society for quality defines total quality management (TQM) as, a business philosophy related to an organization's management system that:

- Seeks to improve the results, including the financial performance.
- Guarantees long term survival through a consistent focus on improving customer satisfaction.
- Meets the needs of all its stakeholders including customers, employees, owners and suppliers overall, TQM.
- Institutionalizes a never ending process of improvement.
- Emphasize and is driven by the needs to meet and exceed customer's needs and expectations.
- Works to eliminate waste and rework.
- Harnesses the brain power of all people within the organization (AL-Damen, 2006, p. 39).

This definition lead managers to belief that TQM comprises all organizational activities, and that the TQM is the foundation of activates, which include:

i. Commitment by top management and all employees.
ii. Responding to the customer needs and requirements order to satisfy him.
iii. Reducing development Cycle times.
iv. Using Just In time System to gain the seven Zeros.
v. Creating improvement teams.
vi. Reducing product and service costs.
vii. Using a system approach to facilitate improvement.
viii. Shifting from vertical to horizontal structure chart.
ix. Focusing on employees empowerment (Al Fayyad, 2005)

5.1.2. **TQM practices and Organizational Performance**

Over the last two decades, many studies have reported on the implementation of total quality management (TQM) principles and methods in organizations around the world. However, until recently, there have been only a few attempts to empirically establish the link between TQM practice and organizational performance.

In the following sub-sections, TQM practices and organizational performance in the context of the related companies have been discussed. Some authors as for example, Rahman, A. and Ather M. T. (2009) have identified as many as 11 aspects of TQM practices. These aspects have been placed before our respondents to rate the important of these aspects. There responses have been tabulated bellow:

Table 01: TQM practices in the selected companies

N=150

Sl. No.	Aspects of TQM Practices	Rating Scale					Weighted Average Score	Rank
		Highly un-important	Unimportant	Neutral	Important	Highly Important		
1	Positive attitude of top management	0	10	0	120	20	4.00	4th
2	Top management support for employees education and training	0	15	0	120	15	3.90	5th
3	Establishment of long term cooperative relation with suppliers	0	25	0	110	15	3.77	6th
4	Conducting regular quality audit	0	30	0	110	10	3.67	7.5th
5	Total employee satisfaction	0	10	0	110	30	4.07	1st
6	Employee involvement in decision making	0	40	0	100	10	3.53	11th
7	Employee empowerment	0	35	0	100	15	3.64	9th
8	Continuous improvement	0	12	0	110	28	4.03	3rd
9	Employees commitment to the success of the organization	0	15	0	100	35	4.04	2nd
10	Employees' rewards and penalties	0	30	0	110	10	3.67	7.5th
11	Long-term partnerships with suppliers and customers	0	35	0	105	10	3.60	10th

Source: Compiled by the researcher on the basis of data collected from field survey.

The table reveals that of the eleven mentioned TQM aspects, total employee satisfaction ranks first with WAS of 4.07 followed by employees commitment to the success of the organization with WAS of 4.04, continuous improvement with WAS of 4.03, positive attitude of top management with WAS of 4.00, top management support for employees education and training with WAS of 3.90, establishment of long term cooperative relation with suppliers with WAS of 3.77, conducting regular quality audit and employees' rewards and penalties each of WAS of 3.67 , employee empowerment with WAS of 3.64, and long-term partnerships with suppliers, customers with WAS of 3.60 and employee involvement in decision making with WAS of 3.53. All the WAS signify the importance of the TQM aspects according to the opinions of the selected respondents. It is to be mentioned here that the WAS of all the TQM aspects have been 3.50 and above in the scale of 5 point.

5.1.3. Importance of Financial Performance Measures

It is important to measure the success of new initiatives like TQM with measures of financial performance for two reasons: 1) most technologies and investments are justified on the basis of their impact on financial and accounting measures, not operational measures and, 2) financial performance measures are the only internally generated measures that directly reflect whether the company's strategy, implementation, and execution are generating wealth by contributing to firm value. For these reasons, even though impacts of initiatives are not easily quantified, financial performance measures are the most important measures of the efficacy of these initiatives. Financial performance measures indicate whether the company's strategy, implementation, and execution are contributing to bottom-line improvement. Typical financial goals have to do with profitability.

5.1.4. TQM and Financial Performance

Many empirical studies have examined relationships between managerial practices, dimensions of quality, and business performance. Samson and Terziovski (1999) examined the relationship between total quality management practices and operational performance. The study showed that the relationship between TQM practice and organizational performance is significant in a cross-sectional sense, in that TQM practice intensity explains a significant proportion of variance in performance. Kaynak (2003) examined the relationships between the practices of quality management and various levels of organizational performance. Based on a comprehensive literature review, the study identified the relationships among TQM practices and examined the direct and indirect effects of these practices on various performance levels. Choi and Eboch (1998) found some paradoxical relations among TQM practices, plant performance, and customer satisfaction. Curkovic, Vickery, and Droge (1999) examined relationships between competitive dimensions of quality.

Relationship between TQM practices and financial performances:

In this study, of the various measures of financial performances namely gross profit margin, return on sale (ROS), return on investment (ROI), return on total assets, return on equity,

return on capital employed, earning per share etc. ; only the two important measures such as ROI and ROS have been analyzed. Table 2 and 3 show the positions of ROS and ROI respectively in the selected companies during the period of 2007 to 20011.

Table 2: Positions of ROS during 2007 to 2011

S.N.	Company	2007	2008	2009	2010	2011	Average	Rank
1	AFL	0.89	1.03	(0.49)	0.39	0.34	0.43	15th
2	BL	2.18	1.87	1.47	2.74	4.21	2.33	11th
3	FFL	3.74	3.67	4.13	4.97	11.12	6.17	7th
4	RFCL	0.64	13.94	15.57	1.72	0.81	6.53	6th
5	NTCL	9.26	15.63	19.57	22.85	9.32	16.45	2nd
6	ASM	3.06	3.86	0.80	0.87	0.61	1.84	13th
7	MKDL	1.33	1.12	1.42	3.60	3.79	2.25	12th
8	BSL	(4.50)	2.02	2.02	2.72	7.00	2.75	9th
9	TSML	(2.22)	(1.60)	(2.26)	0.67	1.86	0.51	14th
10	STL	11.13	7.84	6.96	11.72	8.80	9.29	4th
11	SPL	17.37	16.73	19.25	18.21	18.80	18.07	1st
12	ISPL	3.30	4.11	3.85	3.74	4.03	3.85	8th
13	APL	2.23	2.64	2.72	2.74	2.80	2.63	10th
14	GSL	2.83	7.57	10.71	11.29	5.96	7.67	5th
15	BPL	9.82	13.60	12.83	16.20	15.19	14.05	3rd

Source: Annual Reports of the selected companies

Table 3: Positions of ROI during 2007 to 2011

S.N.	Company	2007	2008	2009	2010	2011	Average	Rank
1	AFL	1.92	1.94	(0.71)	0.60	0.60	0.94	14th
2	BL	1.96	1.80	1.29	1.49	2.50	1.80	12th
3	FFL	2.98	2.93	3.84	4.19	8.06	4.98	6th
4	RFCL	0.88	2.79	2.71	1.66	2.43	2.10	10th
5	NTCL	1.97	4.86	6.77	10.91	3.13	5.61	5th
6	ASM	4.98	4.44	0.88	0.93	0.76	2.40	8th
7	MKDL	1.37	1.39	1.45	3.91	3.70	2.36	9th
8	BSL	(1.22)	0.77	.077	0.74	2.72	1.00	13th
9	TSML	(1.44)	(1.00)	(.99)	0.44	1.35	0.36	15th
10	STL	6.45	4.11	4.36	7.08	7.36	5.87	4th
11	SPL	13.74	12.22	15.51	14.38	12.15	13.60	1st
12	ISPL	5.30	6.98	6.84	7.87	8.43	7.26	3rd
13	APL	2.24	1.85	1.93	2.08	2.13	2.04	11th
14	GSL	3.31	8.44	15.63	15.68	9.21	10.45	2nd
15	BPL	4.99	6.45	2.95	4.84	4.88	4.55	7th

Source: Annual Reports of the selected companies

It is evident from table 2 that the sample company SPL ranks first in terms of average ROS of 18.07 % followed by sample company NTCL with average ROS of 16.45%, sample company BPL with average ROS of 14.05%, sample company STL with average ROS of 9.29%, GSL with average ROS of 7.67%, RFCL with average ROS of 6.53%, FFL with average ROS of 6.17% and so on. All these figures of ROS signify that the average ROS of these seven companies has been satisfactory during the period since these values exceed the standard norm of ROS equivalent to 4% and above as opined by some authors as far example Weston, J. F. and Brigham. FE (1969). The other 8 companies namely AAFL, BL, ASM, MKDL, BCL, TSML, ISPL and APL have been fallen into unsatisfactory ROS group since their average ROS has been below 4%.

Table 3 reveals that the SPL occupies first rank in terms of average ROI of 13.6% followed by GSL with average ROI of 10.45%. Only these two companies fall under satisfactory ROI group since there ROI exceed standard norm of 10% as opined by some authors namely Weston, J. F. and Brigham. FE (1969). But the ROI of the remaining companies such as AFL, BL, FFL, RFCL, NTCL, ASM, MKDL, BSL, TSML, STL, ISPL, APL and BPL have been bellow this standard norm of 10%, thereby falling in under unsatisfactory ROI group.

At this stage, it is essential to examine the relationship between TQM aspects and ROS and ROI respectively. Now the question arises as to the quantification of TQM practices. In this study, WAS of rating the importance of TQM aspects as shown in table 1 have been taken as the proxy of the TQM aspects. The relationship between WAS of TQM aspects and ROS and ROI respectively has been presented in Appendix 2 & 3. The appendices reveal that r between WAS and ROS has been calculated at 0.5905 and r between WAS and ROI has been calculated at 0.9729. These values of r reveal that the correlation between WAS and ROS and ROI have been highly statistically significant at 5% level. This signifies that ROS and ROI of the selected companies have been influenced by TQM aspects significantly.

5.2. Relationship between employees' involvement and TQM results

Employee involvement is viewed as a key factor for successful TQM implementation (Bank, 1992). In order to explore the relationship between employee involvement and TQM results, we divided the companies investigated into three groups, namely `low involvement' group (average value of employees' involvement dimension is 3.00 or less), `medium involvement' group (between 3.00 and 4.00) and `high involvement' group (4.00 or more).

Table 4: TQM results of low, medium and high level of employee involvement

Sl. No.	Level of Employee involvement	Frequency	Percent
1	Low involvement	35	23.33
2	Medium involvement	85	56.67
3	High involvement	30	20
	Total	150	100

Source: Compiled by the researcher on the basis of data collected from field survey.

Table 4 shows about 23% of the respondents are in the low involvement group, more than half of the sample companies about 57% are in the medium involvement group and only 20% are in the high involvement group. Thus, it can be said that majority of the respondents fall in medium involvement group indicating thereby that employee involvement in TQM practices have been satisfactory in the selected companies.

5.3. Factors influencing successful implementation of TQM

The critical factors of TQM are almost invariant across countries. The leaders, policy makers and strategists, human resource managers, process managers, information managers, marketing and supply chain managers focus on certain factors of TQM, of course, with suitable adaptations, as critical factors that contribute to the success of TQM. The critical success factors (CSFs) of TQM identified by the authors namely Mallur, Shekharappa Bheemappa, Hiregouder, N. L. and Sequeira, A. H., (2012) are Leadership & Top Management Commitment (LTMC), Vision and Plan Statement(VPS), Supplier Quality Management (SQM), System Process Quality Improvement (SPQI), Total employee involvement (TEI), Education and Training(ET), Performance appraisal, Recognition(PAR), Customer Focus Satisfaction and(CFS), Evaluation (En), Work Environment and Culture (WEC), Continuous Improvement (CI), and Communication(Co). These CSFs have been placed before our researchers to rate the importance of the same. These responses are tabulated bellow:

Table 5: Opinions of respondents on Critical Success Factors of TQM

N=150

Sl. No.	Specific CSF	Rating Scale					Weighted Average Score	Rank
		Highly un-important	Unimportant	Neutral	Important	Highly Important		
1	LTMC	0	0	0	110	40	4.27	2nd
2	VPS	0	0	0	105	45	4.30	1st
3	SQM	0	0	0	115	35	4.23	3rd
4	SPQI	0	20	0	95	35	4.00	10th
5	TEI	0	0	0	120	30	4.20	4th
6	ET	0	0	0	125	25	4.17	6th
7	PAR	0	0	0	128	22	4.15	7th
8	CFS	0	30	0	100	20	3.73	11th
9	WEC	0	0	0	122	28	4.19	5th
10	CI	0	0	0	130	20	4.13	8th
11	Co	0	0	0	135	15	4.10	9th

Source: Compiled by the researcher on the basis of data collected from field survey.

It is evident from table 5 that the CSF-VPS occupies the first rank as regards importance opined by the respondents with WAS of 4.30 followed by CSF-LTMS with WAS of 4.27, CSF-SQM with WAS of 4.23, CSF-TEI with WAS of 4.20, CSF-WEC with WAS of 4.19, CSF-ET with WAS of 4.17, CSF-PAR with WAS of 4.15, CSF-CI with WAS of 4.13, CSF-Co with WAS of 4.10 and CSF-SPQI with WAS of 4.00 and so on. From all these figures, it can be said that these 10 CSFs have been prominent in the selected companies.

Now it is essential to examine the relationship between WAS of TQM aspects shown in table 1 and the WAS of CSF in order to know the influence of these factors on the TQM practices in the selected companies. Appendix 4 presents the relationship between WAS of TQM aspects and WAS of CSF. It is revealed in the appendix that r between these two variables is -0.02605 which is equivalent to no correlation in the language of statistics. Although, the CSFs have been important to the respondents, but, in reality, they have no influence on TQM practice in the selected companies.

5.4. Measuring employees' job satisfaction & commitment

This research is particularly important, and seeks to explore the degree of impact, in which the implementation of TQM practices poses to benefit the employees within a major Bangladeshi OSAT organization, and further measuring the relationship between TQM and employees' job satisfaction apart from identifying problem areas, their possible remedies respectively and also prominent improvements. The purpose of this investigation is four-fold. Firstly, to identify a set of soft TQM principles that would prove to be an effective guide in the measurement of employees' job satisfaction. Secondly, to present a model as a systematic way to measure the extent of impact employees' perceptions have in relation to the implementation of soft TQM practices on employees' job satisfaction, which have become an integral component of an organization where job satisfaction is vital. Thirdly, it is to explore the relationship between TQM practices and job satisfaction and lastly, to assess which TQM practice is strongly associated with job satisfaction?

Variable measurements

Independent variables: A total of 20 questions captured the five TQM variables under investigation. The questionnaires on TQM dimensions were grouped into eleven elements; namely, salary, fringe benefits, promotion, congenial atmosphere, job security, reward and recognition, customer focus, organizational culture, organizational trust and teamwork and agency relation. The importance of the five constructs out of eleven of TQM practices are described below:

a. Reward and recognition: This principle can be defined as benefits, such as increased salary, bonuses and promotion resulting from the annual review of performance, which is conferred for public acknowledgement of superior performance with respect to goals (Juran and Gryna, 1993). This construct was measured by a five-item scale adopted from Zhang et al. (2000).

The items were measured on a five-point Likert format which ranged from (i) "highly unimportant" to (v) "highly important".

b. Customer focus: This principle can be defined as the degree to which firms continuously satisfy customer needs and expectations (Philips et al., 1983). This construct was measured by a five-item scale developed by Zhang (2000). Responses were on five-point Likert format and ranged from (i) "highly unimportant" to (v) "highly important".

c. Organizational culture: This principle refers to a set of values and guiding beliefs shared by members within an organization. It is not only able to change, guide and display but also give significant contributions by influencing the thought, feeling, interaction and performance within the organization (Yusof and Ali, 2000).

d. Organizational trust: This principle refers to the extent to which the organization trusts their employees' capabilities and abilities to have control over their work, to run or to make changes to the organization (Noorliza and Zainal, 2000). This construct was measured by a four-item scale developed by Lau and Idris (2001). Responses were on a five-point Likert type format ranging from (i) "highly unimportant" to (v) "highly important".

e. Teamwork: This principle refers to the extent to which the organization practices to increase employees' control in their work and allow them to work together. This construct was measured with a four-item scale developed by Zhang et al. (2000). Responses on a five-point Likert format ranged from (i) "highly unimportant" to (v) "highly important.

Table 6: Importance of determinants of employee satisfaction and commitment

Sl. No.	Specific Determinants of Employee Job Satisfactions	Rating Scale					Weighted Average Score	Rank
		Highly un-important	Unimportant	Neutral	Important	Highly Important		
1	Salary (S)	0	0	0	20	130	4.87	1st
2	Fringe Benefits (FB)	0	0	0	40	110	4.73	2nd
3	Promotion (P)	0	0	0	87	63	4.42	3rd
4	Congenial Atmosphere (CA)	0	0	0	100	50	4.33	4th
5	Job Security (JS)	0	0	0	120	30	4.20	5th
6	Team Work (TW)	0	0	0	125	25	4.17	6th
7	Co-worker/Customer Focus (CF)	0	0	0	128	22	4.15	7th
8	Organization Culture (OC)	0	33	0	96	21	3.70	11th
9	Organization Trust (OT)	0	17	0	103	30	3.97	8th
10	Reward and Recognition (RR)	0	23	0	101	26	3.87	9.5th
11	Agency Relation (AR)	0	27	0	89	34	3.87	9.5th

Source: Compiled by the researcher on the basis of data collected from field survey.

The above table reveals that in respect of the importance of employees' job satisfaction and commitment, salary ranks the top most position with WAS of 4.87 followed by fringe benefit with WAS of 4.73, promotion with WAS of 4.42, congenial atmosphere with WAS of 4.33, job security with WAS of 4.20, team work with WAS of 4.17, co-worker with WAS of 4.15, organization trust with WAS of 3.97, reward and recognition and agency Relation each with WAS of 3.87 and organization culture with WAS of 3.70. All these WAS signify that the above mentioned determinants of employees' job satisfaction and commitment have been prominent in the selected companies.

At this stage, we are examining the relationship between WAS of job satisfaction determinants and WAS of TQM aspects in order to know whether determinants of job satisfaction have influenced TQM aspects. Appendix 5 presents the relationship between these two variables. It is revealed in the appendix that r between WAS of determinants of job satisfaction and WAS of TQM aspects has been calculated 0.16063. This value of r indicates that there exists limited correlation between determinants of job satisfaction and WAS of TQM aspects.

5. Conclusion

The current study has examined the relationships between TQM practices and organizational financial performances, employees' involvement and TQM practices. The study has also examined the critical success factors for implementation of TQM and has measured employees' satisfaction and commitment and TQM practices. The study has pointed out the positive and significant relationship between TQM practices and ROI and ROS respectively. The major determinants of employee's job satisfaction and TQM practices have also been found moderately related to each other. All these analyses reveal the significance of TQM practices in the selected companies. The better the TQM practices, the better the financial performances measured in terms of ROS and ROI. Therefore, the concerned authorities of the sample companies should take proper measures for the better TQM practices in their companies which in turn would ensure increased ROS and ROI.

References:

Anderson, M. and Sohal, A. S. 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. 859-877.

Agus, A. and Abdullah M. 2000, 'Total quality management practices in manufacturing companies in Malaysia: An exploratory analysis', *Total Quality Management,* Vol. 11, Iss. 8, pp. 1041-1051.

Al-Damen, Rula (2006). Developing An Excellence Assessment Model for Jordanian Businesses, Amman: Amman Arab University for Graduate studies, p.39.

Al Fayyad, Mahmoud (2005). The impact of Employees Empowerment on organizational competiveness of Jordan Medical Manufacturing Companies, Amman Arab University.

Besterfield, D.H. Total Quality Management. New Jersey: Prentice Hall Incorporation. 1999.

Broetzmann, S., Kemp, J., Rossano, M. and Marwaha, J. (1995), "Customer satisfaction-lip service or management tool?", Managing Service Quality, Vol. 5, pp. 13-18.

Bank, J. (1992) *The Essence of Total Quality Management* (New York, Prentice Hall).

Chapman, R. and Al-Khawaldeh, K. (2002), "Quality management worldwide: TQM and labour productivity in Jordanian industrial companies", The TQM Magazine, Vol. 14 No. 4, pp. 248-62.

Cole, R.E. (1992), "The quality revolution", Production and Operations Management, Vol. 1 No. 1, pp. 118-20.

Choi, T. and Eboch, K. (1998), "The TQM paradox: relations among TQM practices, plant performance, and customer satisfaction", Journal of Operations Management, Vol. 17 No. 1, pp. 59-75.

Choi, T. Y., & Eboch, K. 1998, The TQM paradox: Relations among TQM practices, plant performance, and customer satisfaction, *Journal of Operations Management, Vol.17, No. 1*, pp. 59-75

Ching-Chow Yang, (2006) 'The impact of human resource management practices on the implementation of total quality management: An empirical study on high-tech firms', *The TQM Magazine,* Vol. 18 Iss: 2, pp.162 – 173.

Curkovic, S., Vickery, S. K., & Droge, C. 1999, Quality and business performance: An empirical study of first-tier automotive suppliers, *Quality Management Journal, Vol.6, No. 2*, pp. 29-40.

Deming W.E. Out of the Crisis. MIT Press, Cambridge, MA.1995.

Demirbag, M., Koh, S. C. L., Tatoglu, E., & Zaim, S. 2006. TQM and market orientation's impact on SMEs' performance. Industrial Management & Data Systems, 106(8): 1206–1228.

Dizgah, M. R. 2012, 'The Relationship between TQM Practices and Organizational Performance in the Insurance Industry of Guilan Province', *Journal of Basic and Applied Scientific Research,* Vol. 2, No. 4, pp. 3397-3402.

Daniel I. Prajogo, Christopher M. McDermott 2005, 'The relationship between total quality management practices and organizational culture', *International Journal of Operations & Production Management,* Vol. 25 Iss: 11, pp.1101 – 1122.

Flynn, B. B., Schroeder G. R. and Sakakibara, S., 1995, 'The Impact of Quality Management Practices on Performance and Competitive Advantage, *Decision Sciences*', Vol. 26, Iss. 5, pp. 659-691.

Fassoula, D. (2006), "Transforming the supply chain", Journal of Manufacturing Technology Management, Vol. 17 No. 6, pp. 848-60.

Garvin, D. A. *Managing quality*: *The strategic and competitive edge*. New York. 1991.

Garvin, D.A. (1983), "Quality on the line", Harvard Business Review, Vol. 61, pp. 64-75.

Garcı´a-Bernal, J. and Ramı´rez-Aleso´n M. 2010, 'Increasing the organizational performance benefits of TQM: an approach based on organizational design', Total Quality Management, Vol. 21, No. 4, pp. 363–382.

Hendricks, K. B. & Singhal, R. V. Does implementing an effective TQM program actually improve operating performance? Empirical evidence from firms that have won quality awards. *Management Science*, 1997, *43* (9), 1258-1274.

al Hua, H. et 2000, 'An empirical study on quality management practices in Shanghai manufacturing industries', *Total Quality Management,* Vol. 11, Iss. 8, pp. 1111-1122.

Juran, J.M. and Gryna, F.M. (1993), Quality Planning and Analysis: From Product Development through Use, McGraw-Hill, New York, NY.

Jung, J. and Wang, Y. (2006), "Relationship between total quality management (TQM) and continuous improvement of international project management (CIIPM)", Technovation, Vol. 26 Nos 5-6, pp. 716-22.

Kaynak, H. 2003, 'The relationship Between Total Quality Management Practices and their Effects on Firm Performance' *Journal of Operations Management,* Vol. 21, Iss. 4, pp. 405-435.

Karia, N. and Assari, A.H. 2006, 'The effects of total quality management practices on employees' work-related attitudes', *The TQM Magazine*, Vol. 18, Iss 1, pp.30 – 43.

Keng-Boon Ooi et at 2012, 'TQM practices and knowledge sharing: An empirical study of Malaysia's manufacturing organizations', *Asia Pasific Journal Management,* Vol. 29, pp. 59-78.

Lakhe, R. R., & Mohanty, R. P. 1995. Understanding TQM in service systems. International Journal of Quality & Reliability Management, 12(9): 139–153.

Lau, H.C. and Idris, M.A. (2001), "Research and concepts: the soft foundation of the critical success factors on TQM implementation in Malaysia", The TQM Magazine, Vol. 13 No. 1, pp. 51-60.

Mile, T. and Samson, D. 1999, 'The Link Between Total Quality Management Practice and Organizational Performance', *International Journal of Quality & Reliability Management,* Vol. 16, Iss: 3, pp.226 – 237.

Mallur, Shekharappa Bheemappa, Hiregouder, N. L. and Sequeira, A. H., 2012, The Relationship between TQM Practices and Business Excellence in Small and Medium Sized Manufacturing Enterprises of North Karnataka Region. Available at SSRN: http://ssrn.com/abstract=2041439 or http://dx.doi.org/10.2139/ssrn.2041439.

Noorliza, K. and Zainal, A.A. (2000), "Quality practices that pay: empowerment and teamwork", Malaysian Management Review, Vol. 35 No. 2, pp. 66-76.

Ooi, K. B. et al 2005, 'Does TQM influence employees' job satisfaction? An empirical case analysis', *International Journal of Quality & Reliability Management*, Vol. 24 No. 1, pp. 62-77.

Philips, L.W., Chang, D.R. and Buzzell, R.D. (1983), "Product quality, cost position business performance: a test of some key hypotheses", Journal of Marketing, Vol. 46, pp. 26-43.

Powell, C. T. 1995, 'Total Quality Management as Competitive Advantage: A Review and Empirical Study', *Strategic Management Journal, Vol. 16, Iss. 1, pp. 15-37.*

P.L. Goh, K. Ridgway, (1994) 'The Implementation of Total Quality Management in Small and Medium-sized Manufacturing Companies', *The TQM Magazine,* Vol. 6 Iss: 2, pp.54 – 60.

Rahman, Z. and Siddiqui, J. 2006, 'Exploring total quality management for information systems in Indian firms: Application and benefits', *Business Process Management Journal,* Vol. 12 Iss: 5, pp.622 – 631.

Rahman, A. and Ather M. T. 2009, 'Implementation of TQM in Manufacturing Industries in the Kingdom of Saudi Arabia', conference paper, *Fundación Tekniker,* Eibar, Spain.

Salaheldin, I.S. 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, pp. 215-237.

Samson, D. and Terziovski, M. 1999, 'The Relationship between Total Quality Management Practices and Operational Performance', *Journal of Operations Management,* Vol. 17, Iss. 4, pp. 393–409.

Shammot, M. M. 2011, 'Quality Management Practices and Their Impact on Organizational Performance, and Customer Behavior', *European Journal of Economics, Finance and Administrative Sciences,* Iss. 34, pp. 155-161.

Weston, J. F. and Brigham. FE, 1969, Managerial Finance, Holtrenehart and Winston, N. Y.

Weston, J. F. and Brigham. FE, 1969, Managerial Finance, Holtrenehart and Winston, N. Y. ibid.

Yang, T., Chen, M.C. and Su, C.T. (2003), "Quality management practice in semiconductor manufacturing industries – empirical studies in Taiwan", Integrated Manufacturing Systems, Vol. 14 No. 2, pp. 153-159,

Yusof, A.A. and Ali, J. (2000), "Managing culture in organization", Malaysian Management Review, Vol. 35 No. 2, pp. 60-65.

Zhang, Z. H. 2000. Implementation of total quality management: An empirical study of Chinese manufacturing firms. Unpublished Doctoral thesis, University of Groningen, Groningen, The Netherlands.

Zhang, Z.H., Waszink, A.B. and Wijngaard, J. (2000), "An instrument for measuring TQM implementation for Chinese manufacturing companies", International Journal of Quality & Reliability Management, Vol. 17 No. 7, pp. 730-55.

Zhang, Z.H., Waszink, A.B. and Wijngaard, J. (2000), "An instrument for measuring TQM implementation for Chinese manufacturing companies", International Journal of Quality & Reliability Management, Vol. 17 No. 7, pp. 730-55.

Zhang, Z.H., Waszink, A.B. and Wijngaard, J. (2000), "An instrument for measuring TQM implementation for Chinese manufacturing companies", International Journal of Quality & Reliability Management, Vol. 17 No. 7, pp. 730-55. ibid.

Zhang, Z.H. (2000), "Implementation of total quality management: an empirical study of Chinese manufacturing firms", PhD unpublished thesis, University of Groningen, Groningen.