

Teachers' Perception towards Total Quality Management Practices in Malaysian Higher Learning Institutions

Ahasanul Haque¹, Abdullah Sarwar^{1*}, Farzana Yasmin²

¹Department of Business Administration, Faculty of Economics and Management Sciences,
International Islamic University, Kuala Lumpur, Malaysia

²Faculty of Business and Professional Studies, Management Science University, Kuala Lumpur, Malaysia
Email: belaliium@gmail.com

Received July 2013

The service industry is a rapidly changing industry and this dynamic culture offers a challenge for the service companies to lead or to actually survive in this competitive environment. As the education industry is a part of the overall service industry, this raises the need for a solid base to be developed to reach for high quality service in the education industry. Though, adoption of TQM in the higher educational institutions is of common practice in the Western world, however, the history of TQM adoption in the Malaysian higher educational institutions is not very long. Therefore, the main purpose of this study was to identify the factors influencing the level of TQM practices in the Malaysian higher learning institutions based on the teacher's perceptions. In doing so, this study was conducted in both types of Malaysian higher educational institutions (public and private). Total 300 questionnaires were distributed randomly, out of which 206 were returned. After collecting the data, statistical tests were performed using SPSS and Amos. This study has got satisfactory results. Results also show identical results with the previous studies. However, this study has pointed out that there is still room for improvement that affecting the level of TQM practices in the Malaysian educational institutions. Finally, future directions are provided at the end of the paper.

Keywords: TQM; Higher Learning Institution; Malaysia; Quality of Life

Introduction

The service industry is a rapidly changing industry and this dynamic culture offers a challenge for the service companies to lead or to actually survive in this competitive environment. As the education industry is a part of the overall service industry where students are the customers; this particular factor raises the need for a solid base to be developed to reach for high quality service in the education industry. Hence, adaptation of Total Quality Management (TQM) tool can provide the needed quality which will enhance the success of the business.

Adoption of TQM in the higher educational institutions is of common practice in the Western world (e.g. UK, USA, Australia, Europe) those adopted TQM in their higher learning institutions with an aim to improve the overall quality of the university to attract more students both from home and abroad (Idrus, 1995). This strategy paid well for them in reaping a generous amount of revenue from the foreign students (Rampa, 2004). Thus, it is not unusual to observe the great potential of the education industry that has significantly contributed to the developed and the developing countries in terms of sizable economic advantages and benefits.

Though, there are many countries presently offering high quality education around the globe; however, Malaysia's acceptability as an international destination for education is yet to come. Thus, there is a need for investigating the teachers' perception on the current level of TQM practices in Malaysian higher learning institutions to identify the present barriers

which have been overlooked by the academicians till date. Consequently, this study attempts to address the issue to introduce some important indicators of TQM practices currently existed in the Malaysian higher learning institutions. In addition, policy makers need to find the requirements for sustainable quality education in Malaysia.

Literature Review

The history of TQM is dated back in 1950's when Japanese manufacturing industry introduced the concept (Hashmi, 2007). When the Japanese realized that there is a need to introduce some special technique through which the overall operational process might improve, they gave birth to the concept of TQM (Deming, 1986). According to Brocka and Brocka (1992), TQM is a continuous management process where a whole lot of deliberation is needed in improving the performance of every level of operation by proper management of the both resources; human as well as capital. Töremen, Karakus and Yasan (2009) stated that, organizations are the places which have a defined set of aims and objectives to be achieved. As such, they cannot be thought of as separate from the outside world. To remain competitive, there is always a need to monitor every change that took place inside the organization. This helps in achieving better output for the overall organization. Hence, TQM has become the most vital tool that ensures the organization's goals are achieved and performances are improved (Günbayı & Cevik, 2004).

Furthermore, many studies in the literature developed and validated TQM critical factors or practices in both manufactur-

*Corresponding author.

ing and service sectors. According to Waldman (1993), these are called “elements”, whereas Dean and Helms (1996) described them as “practices”, Hellsten and Kelfsjo (2000) named them as “techniques”, Reed, Lemak and Montgomery (1996) identified them as “processes” and Sitkin, Sutcliffe and Schroeder (1994) mentioned them as “principles”.

Total Quality Management in Education Industry

As a modern management approach, TQM can be used successfully in education sector that are mainly focused on increasing the customer satisfaction (Munoz, 1999). Recent researches on TQM have brought a widely updated plan for educational reforms and modernization of educational organizations (Mutlu, 2001). The TQM principles have broad applications in educational organizations and have produced desirable outcomes (Munoz, 1999). With these applications, educational institution’s improvement has become a continual process (Sallis, 2002). There is a considerable proximity between the principles of TQM and the principles of effective schools (Balci, 2002). The practice of TQM at schools has provided with a perspective to look at the handicaps facing effective schools and with a tool to remove the obstacles in the way of effective schools (Hamedoglu, 2002; Sallis, 2002). In this aspect, the principles of TQM are appropriate for educational settings.

“Rapid economic growth, global competition, downsizing, privatization, corporate mergers and the liberalization of global education have caused a surge in demand for TQM implementation in Malaysian higher learning institutions” (Tay, 2001: p. 258). It has become the most prestigious quality indicator for measuring the overall quality of an educational institution (Thiagarajan, 1996). As quality is a fundamental issue in education, the Malaysian government has also emphasized in improving the overall education quality for both public and private universities with an aim to attract more foreign students (MOE, 2012). Moreover, the Malaysian government also encourages both private and public universities to acquire quality certification (ISO 9000, 9002) and TQM adoption with the purpose of meeting international standards (Tenth Malaysia Plan, 2010). However, the current practices of TQM among the various higher learning institutions in Malaysia are not much satisfactory (Ariffin Ahmed & Zain, 2000). Hence, there is a need to upgrade the TQM practices in Malaysia.

Attitude towards Implementation

The absence of standards and attitudes in the implementation process creates differences in the way employees work, resulting in educational institution’s maintainability problems (Newby, 1999). Poor documentation of the development process, in turn, makes educational institutions difficult to maintain and to improve (Bostan, 2005). In the education industry, the end product is the students as well as the employees’ satisfaction (Mutlu, 2001). Past studies (Bonnie, 2011; Hashmi, 2007; Oakland & Oakland, 2001; Zhang, 2000) have found that difficulty in implementing TQM are the attitude, leadership commitment, lack of understanding and lack of resources. Basing on the above literature review, the following hypothesis is drawn:

H1: There is a significant relationship between Attitude towards Implementation and Teachers’ Perception towards TQM practices.

Leadership Commitment

Strong leadership and their commitment towards the best practices are of vital importance for any organizations. Thus, there is a need to practice the TQM process in every level of the organizational functionality (Sisman & Turan, 2002). As a human focused approach, TQM can make important contributions to the increase of quality of education and the improvement of educational organizations (Hyde, 1992). As, both the inputs and outputs of the educational organizations are human beings, and human beings are the main actors at all levels and in all processes of these organizations, without the satisfaction of human beings (both as customers and providers), it is very hard to ensure the effectiveness of educational organizations (Hashmi, 2007). Therefore, quality issue at this basic level should matter, if management wants to attain a high quality education system (Lezotte, 1992). Therefore, top management should be committed towards their employees with an aim to improve the overall performance (Sisman & Turan, 2002). Basing on the above literature review, the following hypothesis is drawn:

H2: There is a significant relationship between leadership commitment and teachers’ perception towards TQM practices through attitude towards implementation.

Employee Participation

According to Stevens (1993), employees are the vital part of the organization. They are the people who actually execute the tasks. Thus, they should be involved in the decision making process as they sometimes know better thing than the top management (Chapman & Al-Khawaldeh, 2002). As such, this will help the top management in avoiding the misunderstandings among the employees. Besides, the misunderstanding and change in design problems, there is an additional serious one which is the customers’ increased expectations (Lam, 1996). This makes it really hard to meet the deadline and have a product with a quality high enough to impress the client (Boselie & Wiele, 2002). Hence, there is a need to understand the employees’ requirements with an aim to increase productivity (Guimaraes, 1997). According to Dahlgard and Dahlgard (2006: p. 271), “in an organization’s management, primarily senior management decided how the business should operate, including what the policies and objectives to be; how it should be organized; what jobs to be established; and how they should be done. In early days, it was an unquestioned axiom that if everyone did what the upper management required, the business would be successful”. Basing on the above literature review, the following hypothesis is drawn:

H3: There is a significant relationship between employee participation and teachers’ perception towards TQM practices through attitude towards implementation.

Change Management

Both teachers (Yigit & Bayrakdar, 2003) and managers (Yıldız, 2006) are aware of their lack of knowledge and skills and the need for a change to implement TQM effectively. There are some psychological, educational, managerial, economical, cultural and systematic problems in the way of successful TQM applications (Hamedoglu, 2002). But the educational institutions have the necessary potential and determination to solve these problems (Aydm & Sentürk, 2007). Determining the problems and the obstacles in the way of successful TQM im-

plementations, and to take necessary measures to remove these obstacles are important factors for the effectiveness of educational institutions and in general for the whole education system. For this, it is necessary to continually check the quality process and control the success of practices. Basing on the above literature review, the following hypothesis is drawn:

H4: There is a significant relationship between change management and teachers' perception towards TQM practices through attitude towards implementation.

Methodology

This study was conducted on a random sampling of 300 faculty members working at various private as well as public higher learning institutions in Malaysia. The survey was conducted from December 2012 till March 2013. Data has been gathered from total four (04) public universities and nine (09) private universities. Total 300 questionnaires were distributed out of which 206 were returned which were valid and usable for further analysis. The rate of return was quite impressive (83.67%). This is understandable that their profession had played a significant role as they understand the requirement for the research project.

The reliability of measures in this study was analyzed basing on the guidelines provided by Pallant (2005) and Sekaran and Bougie (2010) where only factors with Cronbach's alpha of 0.6 were considered as reliable. In this study, the Cronbach's alpha is 0.839 which is considered very reliable. Moreover, this study only addressed the content and construct validity as both were deemed to be sufficient in analyzing the validity of its measurements (Pallant, 2005). The content validity in this study was assessed by thoroughly reviewing the available literature on TQM. On the other hand, for construct validity was achieved through factor analysis. For this study, the KMO value is .723 (Table 1) which is acceptable with the significance at .000 (Hair et al., 2010).

Results and Discussion

EFA (Exploratory Factor Analysis) was conducted to identify the adequate dimensions or factors that appropriately explain each of the variables identified for this study. Varimax rotation was used in conducting the factor analyses of the variables. In this study, .50 was considered acceptable threshold (cut off) for exploratory study (Hair et al., 2010; Sarwar, Haque, & Yasmin, 2013; Sarwar, Haque, & Ismail, 2012). Total five factors were extracted which were then renamed as attitude towards implementation, leadership commitment, employee participation, employee empowerment and teachers' perception towards TQM practices. Results from the factor analysis also show that 79.46 percent of variance was explained by these five extracted variables.

Finally, for testing the hypothesis, SEM was employed. However, before running the final model for this study, CFA (Confirmatory Factor Analysis) was employed to assess the unidimensionality among variables. This also confirmed the validity and reliability of the measurement items (Haque, Sarwar, Yasmin, Anwar, & Nuruzzaman, 2012). Goodness of Fit (GOF) was assessed which were suggested by Hair et al. (2010).

However, in the first model run, the GOF indices were not achieved. Hence, MI indices were used to find out the multicollinearity problems. The model was then re-specified as shown in Figure 1.

The modified model (Figure 1) with the GOF indices was

Table 1.
KMO and Bartlett's test.

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.723
	Approx. Chi-Square	519.553
Bartlett's Test of Sphericity	df	136
	Sig.	.000

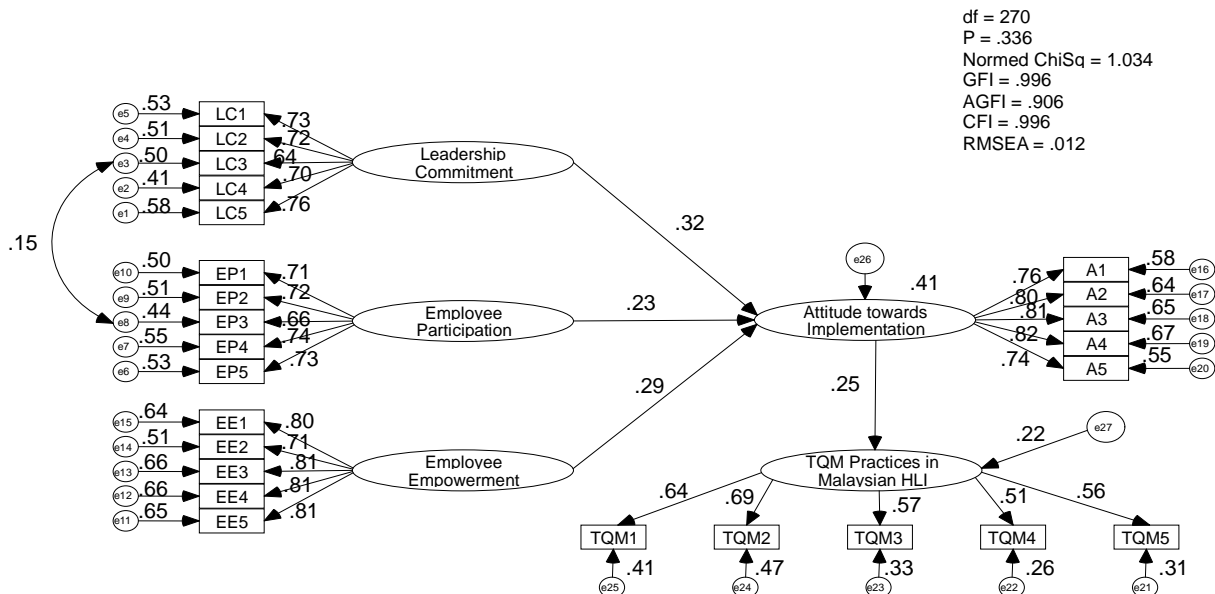


Figure 1.
Structural model.

Table 4.
Regression weights: (default model).

Hypothesis	Standardized Regression Weights		Estimate	S.E.	C.R.	P	
H1	Teachers' Perception towards TQM Practices	<---	Attitude towards Implementation	.096	.051	1.882	.001
H2	Attitude towards Implementation	<---	Leadership Commitment	.019	.077	.247	.000
H3	Attitude towards Implementation	<---	Employee Participation	.036	.080	.453	.000
H4	Attitude towards Implementation	<---	Employee Empowerment	.086	.068	1.265	.019

deemed to be the final model for this study. This model confirmed that leadership commitment (with path coefficient of 0.32), employee participation (with path coefficient of 0.23) and employee empowerment (with path coefficient of 0.29) have significant direct relationship with teachers' perception towards TQM practices through attitude towards implementation. Furthermore, it also indicates that there is also a significant relationship between the attitude towards implementation and TQM practices in Malaysian higher learning institutions (with path coefficient of 0.25).

For hypothesis 1, the regression weight for Attitude towards Implementation in the prediction of Teachers' Perception towards TQM Practices is significantly different from zero at the 0.05 level (two-tailed). Hence, the H1 is accepted. Therefore, in order to increase the work efficiency, management should clarify the university principles in such a way that all the employees do not feel much pressure which in turn will increase the work efficiency and will ease the TQM practices among the employees.

For hypothesis 2, the regression weight for Leadership Commitment in the prediction of Attitude towards Implementation is significantly different from zero at the 0.05 level (two-tailed). Hence, the H2 is also accepted. This indicates that setting definite standards and having strong management among the work processes will ease the level of TQM practices among the employees.

For hypothesis 3, the regression weight for Employee Participation in the prediction of Attitude towards Implementation is significantly different from zero at the 0.05 level (two-tailed). Thus, H3 is accepted. Thus, it proves that employee's participation in the decision making process is very important for that influence on the level of TQM practices in Malaysian educational institutions.

Finally, for hypothesis 4, the regression weight for Employee Empowerment in the prediction of Attitude towards Implementation is significantly different from zero at the 0.05 level (two-tailed). Thus, H4 is also accepted. This indicates that increasing the practice of empowerment among the faculty members will increase the level of TQM practices. Therefore, faculty members should be empowered to participate in quality improvement process which will ensure effective and constant communication to motivate faculty members.

Conclusion and Recommendation

There are many factors that influence level of TQM practices in Malaysian educational institutions. However, this study only discussed based on the teacher's perception the level of TQM practices in Malaysian educational institutions. In doing so, this study was conducted in both types of Malaysian educational

institutions (public and private). The main purpose of this study was to identify the factors influencing the level of TQM practices in the Malaysian higher learning institutions based on the teacher's perceptions. Results show identical results with the previous studies.

However, this study has pointed out that there is still room for improvement that affects the level of TQM practices in the Malaysian educational institutions. Therefore, there is a need to clarify the TQM policies that can significantly improve the TQM practices among the employees. Furthermore, determining the problems and the obstacles in the way of successful TQM implementations and to take necessary measures to remove these obstacles are important factors for the effectiveness of educational institutions and in general for the whole education system. For this, it is necessary to continually check the quality process and control the success of practices which involves change management.

This study significantly contributed to the theoretical enhancement of the current level of knowledge that studied the unique factors in the education industry that increase the applicability of TQM. Moreover, practically, the study findings will help both the academicians and the managements involved in the education industry to get more knowledge in increasing the overall university performances. Hence, in this arena of the globalization of education, Malaysia is still in dire need to develop a competitive edge in international education before it can emerge as a key player in the education business.

This study opens an area for further investigation on the TQM implementation into the Malaysian higher learning institutions. Hence, future studies should also conduct from the students' point of view as students are the customers in this service industry.

REFERENCES

- Ariffin Ahmed Z., & Zain, O. (2000). Total quality management practice in Malaysia: How much is written? *The Journal of the Malaysian Institute of Management*, 35, 15-27.
- Aydın, A., & Sentürk, I. (2007). Application of total quality management in education [sample of primary schools]. *Journal of Social Sciences*, 17, 313-329.
- Balci, A. (2002). *Organizational development*. PegemA: Ankara.
- Bentler, P. M. (1995). Multivariate analysis with latent variables: Causal modeling. *Annual Review of Psychology*, 31, 419-456. <http://dx.doi.org/10.1146/annurev.ps.31.020180.002223>
- Bonnie, F. (2011). TQM workforce factors and employee involvement: The pivotal role of teamwork. *Journal of Managerial Issues*, 2, 13-20.
- Boselie, P., & Wiele, T. V. D. (2002). Employee perceptions of HRM and TQM and the effects on satisfaction and intention to leave. *Managing Service Quality*, 12, 165-172. <http://dx.doi.org/10.1108/09604520210429231>

- Bostan, F. (2005). *The assessment of the total quality management practice at the boarding region schools of primary education*. Unpublished Master's Thesis, Adana: Cukurova University.
- Brocka, B., & Brocka, S. (1992). *Quality management: Implementing the best ideas of the masters*. Irwin, Inc.
- Chapman, R., & Al-Khawaldeh, K. (2002). Quality management worldwide: TQM and labour productivity in Jordanian industrial companies. *The TQM Magazine*, 14, 248-262. <http://dx.doi.org/10.1108/09544780210429861>
- Charles, N. W. (1991). *TQM: A step-by-step guide to implementation*. ASQC Quality Press.
- Cinar, O., Atalay, S., & Buyikkasap, E. (2003). The role of education faculties on total quality management education. *Kastamonu Journal of Education*, 11, 297-304.
- Coate, L. E. (1990). Implementing total quality management in a university setting. In: A. Lawrence, J. Deborah, & S. Teeter, (Eds.), *Total quality management in higher education*. San Francisco: Josse-Bass Inc., Publishers.
- Cook, J., & Wall, T. (1980). New work attitude measure of trust, organizational commitment and personal need non-fulfillment. *Journal of Occupational Psychology*, 53, 39-52. <http://dx.doi.org/10.1111/j.2044-8325.1980.tb00005.x>
- Cruikshank, M. T. (2000). *Developing a quality culture within a school of nursing in higher education*. Unpublished PhD thesis, Hawkesbury: University of Western Sydney.
- Dahlgaard, J. J., & Dahlgaard-Park, S. M. (2006). Lean production, six sigma quality, TQM and company culture. *The TQM Magazine*, 18, 263-281. <http://dx.doi.org/10.1108/09544780610659998>
- Dean, M. B., & Helms, M. M. (1996). The implementation of total quality management into public sector agencies: A case study of the Tennessee Valley Authority. *Benchmarking for Quality Management and Technology*, 17, 1127-1138.
- Deming, W. E. (1986). *Out of the crisis*. Cambridge, MA: Massachusetts Institute of Technology.
- Garvin, D. A. (1983). Quality on the line. *Harvard Business Review*, 61, 64-75.
- Guimaraes, T. (1997). Assessing employee turnover intentions before/after TQM. *International Journal of Quality & Reliability Management*, 14, 46-63. <http://dx.doi.org/10.1108/02656719710156770>
- Günbayı, I., & Cevik, V. (2004). An investigation on the opinions of teachers and managers about total quality management. *Journal of National Education*, 163, 5-17.
- Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham R. L. (2010). *Multivariate data analysis*. New Jersey: Pierson Hall.
- Hamedoglu, M. A. (2002). *The obstacles of total quality management applications in elementary education*. Unpublished Master's Thesis, Sakarya: Sakarya University.
- Hashmi, K. (2007). Introduction and implementation of total quality management (TQM). *Journal of electronics and Quality Management*, 6, 45-57.
- Haque, A., Sarwar, A. A. M., Yasmin, F., Anwar, A., & Nuruzzaman. (2012). The impact of customer perceived service quality on customer satisfaction for private health centre in Malaysia: A structural equation modeling approach. *Information Management and Business Review*, 4, 257-267.
- Hellsten, U., & Klefsjo, B. (2000). TQM as a management system consisting of values, techniques and tools. *The TQM Magazine*, 12, 238-244. <http://dx.doi.org/10.1108/09544780010325822>
- Hyde, A. (1992). The proverbs of total quality management: Recharting the path to quality improvement in the public sector. *Public Productivity and Management Review*, 16, 25-37. <http://dx.doi.org/10.2307/3380803>
- Idrus, N. (1995). Empowerment as a manifestation of total quality: A study in three countries. *Total Quality Management*, 6, 603-612. <http://dx.doi.org/10.1080/09544129550035251>
- Imai, M. (1986). *Kaizen, the key to japan's competitive success*. New York, NY: McGraw-Hill.
- Kline, R. B. (2011). *Principles and practices of structural equation modeling* (3rd ed.). New York: The Guilford Press.
- Lezotte, L. W. (1992). *Creating the total quality effective school*. Oke- mos, MI: Effective Schools Products Ltd.
- McCulloch, M. (1993). Total quality management: Its relevance for higher education. *Quality Assurance in Education*, 1, 127-133. <http://dx.doi.org/10.1108/09684889310044655>
- McNealy, R. M. (1993). *Making quality happen*. London: Chapman & Hall.
- Md Ariff, M. S., Zaidin, N., & Sulong, N. (2011). *Total quality management implementation in higher education: Concerns and challenges faced by the faculty*. Paper presented at the ICIT conference, 1-23.
- Ministry of Education (MOE) (2012). Malaysian Ministry of Education Act 1995. <http://www.moe.gov.my/>
- Munoz, M. A. (1999). *Total quality management in higher education: Lessons learned from an information technology office*. www.eric.ed.gov
- Mutlu, S. (2001). *The facility of the total quality management at the primary schools according to the opinions of teachers and administrators*. Unpublished Master's Thesis, Adana: Cukurova University.
- Newby, P. (1999). Culture and quality in higher education. *Higher Education Policy*, 12, 261-275. [http://dx.doi.org/10.1016/S0952-8733\(99\)00014-8](http://dx.doi.org/10.1016/S0952-8733(99)00014-8)
- Noorliza, K. (1999). *The impact of TQM practice on employees' work-related attitudes*. Unpublished MBA Thesis, Penang: University Science Malaysia.
- Oakland, J. S., & Oakland, S. (2001). Current people management activities in world-class organizations. *Total Quality Management*, 12, 773-785. <http://dx.doi.org/10.1080/09544120120075370>
- Ozden, Y. (2002). *New Values in Education*. PegemA, Ankara.
- Ozevren, M. (2000). *TQM: Basic concepts and practices*. Alfa Yayınları, Istanbul.
- Pallant, J. (2005). *SPSS survival manual: A step by step guide to data analysis using SPSS for windows*. Version 12. Allen & Unwin, Sydney.
- Rampa, S. H. (2004). *The relationship between total quality management and school improvement*. Unpublished doctoral thesis, Pretoria: University of Pretoria. <http://upetd.up.ac.za/thesis/available/etd-03302005-115311/>
- Reed, R., Lemak, D. J., & Montgomery, J. C. (1996). Beyond process: TQM content and firm performance. *Academy of Management Review*, 21, 173-202.
- Sallis, E. (2002). *Total quality management in education* (3rd ed.). London: Kogan Page.
- Sarwar, A., Haque, A., & Yasmin, F. (2013). The usage of social network as a marketing tool: Malaysian muslim consumers' perspective. *International Journal of Academic Research in Economics and Management Science*, 2, 93-102.
- Sarwar, A., Haque, A., & Ismail, A. Z. (2012). Measuring students' perception towards university selection: An empirical investigation on Malaysian postgraduate students. *International Journal of Research in Commerce, Economics & Management*, 2, 13-20.
- Sekaran, U., & Bougie, R. (2010). *Research methods for business: A skill-building approach* (5th ed.). Haddington: John Wiley & Sons.
- Senge, P. M. (1990). *The fifth discipline: The art and practice of the learning organization*. New York, NY: Doubleday.
- Sisman, M., & Turan, S. (2002). TQM in education. *Academy of Management Review*, 2, 33-42.
- Sitkin, S., Sutcliffe, K., & Schroeder, R. (1994). Distinguishing control from learning in total quality management: A contingency perspective. *Academy of Management Review*, 19, 537-564.
- Spanbauer, S. J. (1989). *Measuring and costing quality in education*. Appleton, Wisconsin: Fox Valley Technical College Foundation.
- Stevens, D. P. (1993). Avoiding failure with total quality. *Quality (QUA)*, December, 18-22.
- Tay, A. (2001). Management's perception of MBA graduates in Malaysia. *Journal of Management Development*, 20, 258-274. <http://dx.doi.org/10.1108/02621710110386499>
- Tenth Malaysia Plan (2010). Creating the Environment for Unleashing Economic Growth. In: *10th Malaysia Plan: 2011-2015*, 133.
- Terry, P. M. (1996). *Using TQM principles to implement school-based management*. Paper presented at the 14th Annual International Conference of the International Association of Management, Toronto,

August.

- Thiagarajan, T. (1996). *An empirical study of total quality management in Malaysia: A proposed framework of generic application*. Unpublished PhD Thesis, University of Bradford.
- Töremen, F., Karakus, M., & Yasan, T. (2009). Total quality management practices in Turkish primary schools. *Quality Assurance in Education, 17*, 30-44. <http://dx.doi.org/10.1108/09684880910929917>
- Tribus, M. (1993). Quality management in education. *Journal for Quality and Participation, 16*, 12-21.
- Waldman, D. A. (1993). A theoretical consideration of leadership and total quality management. *The Leadership Quarterly, 4*, 65-79. [http://dx.doi.org/10.1016/1048-9843\(93\)90004-D](http://dx.doi.org/10.1016/1048-9843(93)90004-D)
- Yigit, B., & Bayrakdar, M. (2003). Teachers' perceptions on the applicability of TQM principles at primary schools. *Journal of National Education, 158*, 723-741.
- Yıldız, E. (2006). *Total quality management in secondary schools: The case of Iskenderun*. Unpublished Master's Thesis, Hatay: Mustafa Kemal University.
- Zain, O., Goon, C. A., & Wan Aris, W. H. (1998). Quality services: Policies and practices in Malaysia. *Library Management, 19*, 11-21.
- Zainudin, A. (2012). *A handbook on SEM: Structural equation modeling using amos graphics* (4th ed.). Kelantan: University Technology MARA Press.
- Zhang, Z. H. (2000). Developing a model of quality management methods and evaluating their effects on business performance. *Total Quality Management, 11*, 129-137. <http://dx.doi.org/10.1080/0954412007071>