

SUCCESS FACTOR IN THE IMPLEMENTATION OF TQM IN PUBLIC SERVICE AGENCIES

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ABSTRAK

Secara khususnya kajian ini bertujuan untuk mengetahui ciri-ciri yang membawa kepada kejayaan pelaksanaan TQM di agensi kerajaan. Kajian telah dijalankan ke atas enam buah agensi kerajaan yang menjadi calon Anugerah Kualiti Perdana Menteri. Kajian ini menggunakan kaedah penyelidikan kualitatif di mana data dikutip melalui temu duga tidak berstruktur. Dokumen yang mengandungi maklumat tentang TQM juga dikutip daripada informan dan dijadikan sebagai sumber data. Data analisis secara induktif melalui proses membentuk kategori, mengkod data dan mengkategorikan data.

Kajian ini menunjukkan bahawa ciri yang membawa kejayaan dalam pelaksanaan TQM di agensi-agensi kerajaan terlibat ialah: (1) kepimpinan yang baik, (2) penglibatan dan komitmen setiap peringkat kakitangan, (3) memenuhi kepuasan pengguna, (4) penghargaan dan pengiktirafan, (5) kerja berpasukan, (6) kesedaran, dan (7) iklim organisasi yang kondusif.

Kesimpulannya, walaupun cara pelaksanaan TQM di agensi-agensi kerajaan yang dikaji didapati sejajar dengan pelaksanaan TQM di Barat dan di Jepun, namun terdapat beberapa keunikan dalam pelaksanaan TQM di agensi yang diteliti. Keunikan tersebut ialah tentang skop latihan mengenai TQM (merangkumi juga latihan keagamaan) dan keprihatinan organisasi (mengambil kira aspek budaya) terhadap kakitangan.

ABSTRACT

This study aims specifically to determine factors contributing to the success of TQM implementation in selected government agencies. A total of six

government agencies nominated for the Prime Minister Quality Awards were studied. A qualitative method was employed in which data were collected through unstructured interviews. Documents pertaining to the implementation of TQM in the respective agencies were also used as a source of data. Data were analyzed inductively by developing categories, coding, and categorization.

The findings reveal that factors contributing to the success of TQM implementation were: (1) good leadership, (2) involvement and commitment of all level of staff, (3) meeting customer satisfaction, (4) reward and recognition, (5) teamwork, (6) awareness, and (7) organizational climates.

Although, TQM implementation in these selected government agencies were in line with the method suggested in the literature, there appear to be some uniqueness in the scope of training and the concerns of the organization towards their staff. The emphases on religious values and concerns for culture have played a pivotal role in shaping the implementation and the success of TQM in public service agencies.

INTRODUCTION

There have been a plethora of definitions of TQM in numerous literature related to quality. Some see TQM as a systematic way of guaranteeing that all activities within an organization happen as planned (Crosby, 1992). Most, however, see TQM as total organization-wide effort to achieve customer satisfaction (Brown, 1992; Schiller, 1991; Stemple, 1993). Feigenbaum (1983) gives a definition of TQM as an: ...effective system for integrating the quality-development, quality-maintenance and, quality-improvement efforts of the various groups in an organization so as to enable marketing, engineering, production and, service at the economical levels which allows for full customer satisfaction.

In Malaysia, TQM was officially introduced to the public service agencies in July 1992 (PKPA, 1992). Prior to this introduction the Public Service Department introduced numerous quality effort. Such efforts include Innovative Awards, Quality Control Circle, Service Counter Quality and various campaigns to instill awareness of quality among public agency employees (INTAN, 1992). The highest national quality award is the Prime Minister Quality Award (INTAN, 1993). The award, introduced in 1990, is presented to any agency, public or private, that has successfully practised quality system in their respective

organization. Later, all efforts were merged into what is known as the implementation of TQM in the public service system (Ahmad Sarji, 1993).

The date, 11th July 1996 marked a new beginning for quality movement in the public service, for on this day the *Guidelines for Implementation of MS 9000 in the Civil Service* was launched by the Chief Secretary to the Government (MAMPU Online, 1999a). It was anticipated that the implementation of this standard would help towards the development of a more effective quality management system. Such a system could ensure that goods and services produced would have features that meet customer satisfaction.

A survey conducted in 1999 revealed that 229 agencies were at various stages of implementing MS ISO 9000, 13 agencies have received the MS ISO 2000 Quality System Certification while another 18 agencies have applied to MAMPU for compliance audits on their respective quality systems which are based on the MS ISO 9000 standard (MAMPU Online, 1999b). Generally, the commitment of public agencies to the implementation of MS ISO 9000 have been very encouraging. This pattern is reflected in the report of the implementation produced by MAMPU. The data shows that as of the year 2001, close to 800 agencies were involved in the implementation, with more than 200 agencies achieving the standard and had received the award (MAMPU, 2003). In view of this enthusiasm, the objective of the Government to implement MS ISO 9000 in all agencies can be achieved although it calls for a tight implementation schedule and detailed planning (MAMPU Online, 1999b).

The implementation of TQM is now in its tenth year. However, although public service agencies have already espoused the TQM concept, some questions regarding its implementation remain unanswered. This is due to the fact that certain quarters still find the concept of TQM obscure and elusive (Ho & Cheng, 1999). Noteworthy here is the fact that quality in the public sector domain, traditionally, has always been as a response to quality "problem" or failures (Donnelly, 1999). Consequently, the practitioners of TQM make numerous interpretations that naturally lead to the existence of a great variety of implementation strategies. Some see TQM as a means of increasing customer orientation, timeliness and service performance, and at the same time, reduction in costs (Berman & West, 1995), while others thought of it as an effort to dismantle the "bureaucratic" culture (Kirkpatrick & Lucio, 1995). Some criticize the quality initiatives in the public sector

as part of a government agenda to reform public services based largely upon private sector practices. Such practices, they argue, cannot be applied directly to public services (Erridge *et al.*, 1998). What is startling is the fact that even the gurus of quality like Deming and Crosby also differs in their approach towards the implementation of TQM (Katz, 1993). Despite these differences some organizations have been able to successfully implement TQM. So what are the factors that contribute toward successful implementation of TQM in such organizations?

LITERATURE REVIEW

Overview of TQM

TQM has enabled management leaders to evaluate and further understand the needs to satisfy customer expectation of their products or services. Customer satisfaction is the fore of TQM and the concept is strongly related to quality. Ronald Armstrong fortifies this relationship further by arguing that consumers want products to satisfy not just their basic needs, but also their expectation of safety, life-span, and pride of ownership (Hakes, 1991). Brown (1992) also stresses that the quality of a product must satisfy customer needs. However, Brown goes further by insisting that even the design and characteristics of the product or service should satisfy customer expectation. Others define quality as satisfying needs (Crosby, 1979), appropriate for usage (Juran *et al.* 1979), and fulfilling customer expectation (Feigenbaum, 1983).

Another concept related to TQM is total management. Drucker (1974) defines management as a function, a discipline and a job that needs to be done in order to achieve certain organizational standards. Ishikawa (1985) defines total management as an integration of all levels of personnel and division such as individual employees, managers, specialists, subcontractors and affiliate bodies. So, total management can be defined as all individuals in an organization (irrespective of their status and divisions) working together in teams to overcome any weaknesses (Deming, 1986).

Schiller (1991) notes that the ability to arrive at certain organizational performance standards depends largely on the customers and not just on a manager or a worker. This is because customers determine the continuous demand for a product or service (Schiller, 1991). There-

fore, customer satisfaction should be the base to evaluate organizational performance (Stemple, 1993). Nonetheless, since customer satisfaction is continuously changing, henceforth efforts should be undertaken to meet this demand by continuously upgrading the quality of products and services. Such activities are very much in line with the continuous improvement concept as advocated by Deming (1986).

Factors Contributing Towards The Success of TQM

Studies have also been carried out to determine factors contributing to the successful implementation of TQM (Arvinder & Michael, 1997; Cyr, 1992; Ishikawa, 1985; Price & Chen, 1993; Shores, 1990). These authors propose various explanations on TQM reflecting diverse understanding of the concept. Cyr (1992) believes that activities in quality improvement of products and services are the pillar of TQM philosophy. There are six elements necessary to ensure success in carrying out activities of quality improvement; (1) team work, (2) leadership, (3) training, (4) cultural change, (5) full participation at all levels, and (6) recognition and rewards (Cyr, 1992).

However, Shores (1990) listed only three major elements of TQM; (1) objective, (2) strategy, and (3) system. According to Shores the objectives of TQM is to achieve customer satisfaction, while the strategy of TQM refers to activities related to quality improvement, productivity and flexibility. The last element, the system of TQM refers to the management system, total involvement, customer focus, analysis on systematic process improvement, and statistical process control.

Tenner and De Toro (1992) also listed three major components of TQM; (1) objective, (2) quality principal, and (3) supportive elements. Here, the objective of TQM is to carry out continuous quality improvement activities. While Quality principles are thought to consist of components like; (1) focus, (2) quality improvement process, and (3) total involvement.

However, Price and Chen (1993) suggest that; (1) employees, (2) continuous improvement, (3) process, and (4) customers are pillars of TQM. As for Kravchuck and Leighton (1993) believe in strong managerial leadership and a hospitable administrative culture as contingent for successful implementation of TQM. However, a follow-up research by Arvinder and Michael (1997) found that the success of TQM implementation is primarily attributed to a hospitable TQM culture. On the other hand, Ishikawa (1985) suggests four components of TQM namely; (1) main objective, which is to achieve customer satisfaction, (2) focus

on quality control, which include profit and cost control, stock, sale and output control, and delivery control, (3) total involvement of people at all levels and divisions, including managers, staffs, subcontractors, distribution systems and affiliate organizations, and (4) continuous training. Based on Arvinder and Michael (1997), Cyr (1992), Price and Chen (1993), Shores (1990), and Ishikawa (1985), it can be concluded that TQM is a continuous quality improvement effort of products and services. Such efforts can only be effective if characteristics important to TQM implementation exist in the organization. Such characteristics include: (1) leadership, (2) cultural change, (3) total involvement, (4) recognition and award, (5) customer satisfaction, (6) team work, (7) training, (8) communication, and (9) evaluation.

METHODOLOGY

Six public agencies with an excellent quality management system were chosen for the study. These agencies were finalists among 17 nominees for the Prime Minister Quality Awards. Data were collected from two sources, namely, interviews and documents.

Semi-structured interviews were conducted with the TQM manager representing each agency. The interviews were audio taped and transcribed in verbatim. The interview guide used in the study was developed after conducting preliminary interviews with TQM managers from three other agencies (excluding the six agencies being studied).

Documents related to the implementation of TQM for these agencies were also collected and used in this study. These documents include yearly reports, reports on TQM activities, copies of transparencies, customers' charter and, organizational charts. The documents were coded and separated from their original text in verbatim. Data from the document were grouped and categorized into factors related to the successful implementation of TQM.

Data were analyzed using the constant comparative method as presented by Glaser and Strauss (1967). The researcher analyzed the transcripts and coded data that appeared to address the research question, comparing segments of data with each other within each interview transcripts. Next, themes and concepts were compared across interviews. From this process a set of themes were inductively derived. The themes reflect success factors for the implementations of TQM from the perspective of these informants.

FINDINGS

The study found that there are seven characteristics that contribute to successful implementation of TQM in the public agencies being studied. These characteristics are: (1) leadership, (2) participation and commitment, (3) customer satisfaction, (4) rewards and recognition, (5) team work, (6) awareness, and (7) organizational climate.

Four informants attributed the success of TQM implementation to leadership. One informant even put the blame for the failure of an organization on leadership. The data revealed that a leader must possess qualities such as: visionary, supportive of quality improvement, committed and interested in quality efforts, provide aspirations and motivations in continuous change processes, frequently meet with his/her staff, organize study visits to other organizations, and participate in quality improvement activities.

The successful implementation of TQM also depends on the participation and commitment of all individuals. Four informants report this factor to be important. Individuals at all levels, whether they are department heads, officers or support staff, need to give their commitment and participate in quality improvement efforts. One need not be in a quality team in order to participate in quality efforts, for it can also be done by giving suggestions on quality improvements through suggestion boxes by those outside of the team. Customer participation in quality efforts is also found to be important. One agency even includes customer representatives in their quality structure and sits in the Division Board. Customer satisfaction refers to both internal and external customers. All agencies studied gives strong emphasis to customer satisfaction in their activities related to the improvement of quality. In fact, one agency rated customer satisfaction as an important factor contributing towards the successful implementation of TQM. The research also found that the customer's charter is used as a means of communicating quality commitment of an agency to its clients.

Five agencies awarded their staff with various rewards as a means of recognizing their contribution to the respective agencies. There are awards that recognize creativity like patent award, innovation award, scientist award, and publication award. Other types of awards include: excellent service award, long service award, "good deeds" award, best staff of the month, best staff of the year, best attendance, best quality circle award, documentation system quality award, and physical health award. Interestingly, one agency was found to have

been giving out awards as far back as 1974, while another had created a special award for support staff and called it the Director Quality Award.

Team work and team spirit in an organization are important for the success of TQM implementation in three agencies. These agencies used various approaches, namely sports and recreation, to instill team spirit among their staff. An organizational song was also found to be able to foster the spirit of team work.

Awareness about quality was also reported to be an important factor contributing to the successful implementation of TQM in three agencies. One agency distributed work progress report of a branch to all other branches. This was to enable each branch to make a comparison of their work progress. Awareness can further be increased if directors frequently asked for work progress. Another informant related how religious talks held four times a week for the agency's senior officers had helped in instilling awareness about quality improvement and positive change in attitudes towards work among staff. The concept of 7 S was employed by another agency to help change their staff attitude. The 7 S concept (strategy, system, skill, staff, shared values) specifically meant to enable staff to mould their shared values to that of the organizational values.

Efforts were carried out in four agencies to create a conducive and comfortable working environment for their staff, because they believed that such an environment is important for TQM implementation efforts to be successful. Efforts to create such a climate included creating: (1) an open management system, (2) an effective communication system, (3) concern for staff, (4) a close relation, and (5) a comfortable work environment.

DISCUSSION

Findings from this study concerning factors contributing to the success of TQM implementation are consistent to that of TQM literature (Arvinder & Michael, 1997; Cyr, 1992; Ishikawa, 1985; Price & Chen, 1993; Shores, 1990). The revelation that leadership plays an important role in ensuring successful implementation of TQM echo Deming's propositions (Deming, 1986) that leaders must create a working environment that embolden creativity and reduce hindrances to carrying out effective quality work. Tenner and De Toro (1992) insist that lead-

ers must be actively involved in the implementation of TQM, build commitment, generate confidence and show appreciation to subordinates. Similarly Cyr (1992) notes that the implementation of TQM requires dedicated leaders who are able to stimulate his or her workforce to embark on quality improvement activities. Without a dedicated leader, the implementation of TQM will fail miserably (Schmidt & Finnigan, 1992). Besides, leaders should also be a good role model and provide guidance for their subordinates (Matshushita, 1987).

The discovery that participation and commitment of all individuals or total involvement as important for the success of TQM implementation, is parallel to Schmidt and Finnigan's (1992) notion that every work process involves people at all levels. These people may be external or internal customers to the organization. The effort of one agency to include a customer representative in its quality structure is commendable. In fact Ishikawa (1985) had earlier suggested the scope of people to be participating in quality activities to include interested parties from outside of an organization. The concept of "Zero defect" brought about by Shingo (1985) will be difficult to achieve without participation and commitment of all interested parties (Crosby, 1979). Likewise, Deming (1986) goes a step further by suggesting that vendors be made business partners to guarantee quality.

The core of TQM is to assure customer satisfaction (Ishikawa, 1985). Shores (1990) insists that customer satisfaction is crucial for the success of a business. Businesses will be badly affected if customers are not satisfied, for they can influence the demand of a product or service (Schiller, 1991). According to Goodman *et al.* (1993) an organization will lose an income from one customer for every six unsatisfied customer. It is refreshing to note here that all agencies involved in this study put strong emphasis on customer satisfaction in their quality improvement activities. Efforts to satisfy the customer should not be focused only to reacting to problems or complaints of customers, but to include invigorating activities that are potentially problematic to customer (Goodman *et al.*, 1993).

Numerous quality awards introduced by agencies involved in this study show that they are serious in recognizing the contribution of their staff towards quality improvement. Recognition and rewards can give a deep sense of satisfaction among staff members and it can be given in many forms, including monetary. That is why, according to Cyr (1992), every effort made by staff members that result in quality improvement in the implementation of TQM must be rewarded. Such moves provide proof to them that their efforts are given due recogni-

tion by the organization. To give further weight, successful efforts should also be publicized organization wide (Cyr, 1992).

Team work and team spirit are found to have contributed to the successful implementation of TQM in this study. Quality improvement efforts cannot be carried out alone by an individual, but rather by the collective efforts of many people. With team efforts, skill of staff members at various levels can be mobilized effectively (Lawler III, 1992) and hence productive works are optimized (Cyr, 1992). The skills and knowledge of staff members should be treated as an asset that would help improve the quality of products and services (Shores, 1990). Noteworthy here is the fact that team work can only be formed if there exists quality circles or groups and structures. This is due to the fact that quality improvement activities are garnered through quality circles (Kinlaw, 1992). Thus, Juran (1993) suggests that all organizations develop quality circles specifically for quality improvement purposes. As for quality structure, Schultz and Vollum (1992) recommend total involvement of staff at all levels through the formation of various committees such as: (1) Steering committee; (2) Departmental level committee; (3) Coordinator; (4) Management committee; (5) Process Improvement Advisor; and (6) Process Improvement Circles.

Efforts to create awareness on quality improvement among staff in agencies being studied prove to be important in successfully implementing TQM. Most agencies provide training as a means of instilling awareness about TQM among their staff. Training includes activities such as lectures, workshops, courses and study visits. Since quality improvement efforts require skillful staff, Price and Chen (1993) suggest that the staff be exposed to training on data collection and data analysis, effective use of technical and quality hardware, and communication and interaction skills so as to enable active involvement in quality improvement activities. Individuals at all levels should be given training about TQM. The training should be based on their stipulated role in the quality circle (Spemley, 1992). Spemley also insists that those managers who have undergone training on TQM should embark on teaching their subordinates about TQM.

Conducive organizational climate is crucial towards successful implementation of TQM. Taguiri as quoted by Owens (1995), describes the organizational climate as comprising of four dimensions: (1) *Ecology*, referring to physical and material factors; (2) *Millieu*, the social dimension of the organization; (3) *Social system*, referring to organizational and administrative factors, and (4) culture, referring to values, norms

and belief systems. Various efforts to create conducive and interesting working environments show that all four dimensions of organizational climate as advocated by Taguiri have been attended to. Installing an effective communication system as part of this effort is crucial, and according to Shores (1990), a frail communication system will eventually weaken the spirit of staff members in their effort to improve quality.

One unique factor emerging from the study is the organizational concern about its staff members. Moreover, as far as providing for the welfare and facilities, these agencies go beyond the individual staff member to include family members of staff as well as the agencies' customers. This matter is given prominence in the implementation of TQM in these agencies. Consequently, such treatment results in contentedness among staff and makes them feel proud of their organization. Such feeling is helpful towards reducing the effect of internal conflict that could prevent organizational effectiveness.

Another factor could be attributed to the local culture. According to Ismail (1988), the traditional Malay culture includes values such as kindness, humility, generosity, carefulness, uphold treaty, truthfulness, patience, helpfulness, unity, respect for parents, respect for leaders and upholding traditional customs. Mehrota (1992) who insists that beside technology, system and behavioral science, other unconventional approaches could also lead to increase in productivity. Activities such as: quality circle, workers, suggestion scheme, team work, sports and drama clubs, religious groups, canteen committee, contests and, open forums are examples of unconventional approaches. All of Mehrota's (1992) suggestions seem to have been taken up by these public service agencies.

CONCLUSION

The success of TQM implementation in the public service agencies studied is due to good leadership quality, staff commitment, total involvement, customer satisfaction, rewards and recognition, team work, awareness of the importance of quality improvement, and conducive organizational climate. These agencies also show their concerns that go beyond the staff to include staff family members and consumers and their families. Religious values and the Malay culture have also played a pivotal role in shaping the implementation and success of TQM in public service agencies.

REFERENCES

- Ahmad Sarji A. (1993). *Improvement and Development in the Public Service for the Year 1992*. Report by Tan Sri Ahmad Sarji bin Abdul Hamid, Chief Secretary to the Government, Government of Malaysia. Kuala Lumpur: Percetakan Nasional Berhad.
- Arvinder, L. & Michael, S. (1997). A model of institutionalizing TQM in a state government agency. *International Journal of Quality & Reliability Management*, 14 (8), 753-767.
- Bermann, E. & West, J. (1995). Municipal commitment to total quality management: a survey of recent progress. *Public Admin Review*, 55(1), 57-66.
- Brown, S. (1992). *Total Quality Service*. Ontario: Prentice Hall Canada, Inc.
- Crosby, P. (1979). *Quality is Free: The Art of Making Quality Certain*. New York: McGraw-Hill.
- Cyr, J. (1992). Building success through process improvement: a simple philosophy to understand, but not easy to make it reality. *CMA Magazine*, March, 24-28.
- Deming, E. (1986). *Out of the Crisis*. Massachusetts: MIT.
- Drucker, P. (1974). *Management: Task, Responsibilities and Practices*. New York: Harper & Row.
- Donnelly, M. (1992). *Making the Difference: Quality Strategy in the Public Sector Managing Service Quality*, 9 (1), 47-52.
- Erridge, A., Fee, R. & McIlroy, J. (1998). Public sector quality: Political project or legitimate goal?. *International Journal of Public Sector Management*, 11 (5), 341-535.
- Feigenbaum, A. (1983). *Total Quality Control* (3rd edn.). New York: McGraw-Hill.
- Glaser, G. & Strauss, L. (1967). *The Discovery of Grounded Theory*. Chicago: Aldine.
- Goodman J., Broetzmann, S. & Ward, D. (1993). Preventing TQM problems: measured steps towards customer driven quality improvement. *National Productivity Review*, Autumn, 555-571.
- Hakes, C. (1991). *Total Quality Management: The Key to Business Improvement. A Pera International Executive Briefing*. London: Chapman & Hall.
- Ho, C. & Cheng, W. (1990). Quest for value mix. *Managing Service Quality*, 9 (3), 204-208.
- INTAN (1992). *Kemajuan Pentadbiran Awam di Malaysia: Development of Public Administration in Malaysia Selected Speeches of Tan Sri Dato' Seri Ahmad Sarji Abdul Hamid, Chief Secretary to the Government, Malaysia*. Kuala Lumpur: INTAN.
- INTAN (1993). *P & Q Buletin Produktiviti dan Kualiti*, 2 (1), 3.

- Ishikawa, K. (1985). *What is Total Quality Control? The Japanese Way* (translated by David, J). New Jersey: Prentice-Hall.
- Ismail, H. (1988). *Masyarakat dan Budaya Melayu*. Kuala Lumpur: Dewan Bahasa dan Pustaka.
- Juran, J. (1993). Made in USA: a renaissance in quality. *Harvard Business Review*, July-August, 42-50.
- Juran, J., Gryna, F. & Bingham, R. (1979). *Quality Handbook*. New York: McGraw-Hill.
- Katz, R. (1988). The quality conflict: Crosby vs Deming. *Quality Digest*, 13(11), 40-43.
- Kinlaw, D. (1992). *Continuous Improvement and Measurement for Total Quality: A Team-Based Approach*. Illinois: Business One Irwin.
- Kirkpatrick, I. & Lucio, M. (1995). *The Politics of Quality in Public Sector*. Routledge: London.
- Lawler III, E. (1992). *The Ultimate Advantage: Creating the High Involvement Organization*. San Francisco: Jossey-Bass Publishers.
- MAMPU (2003). *The Implementation of MS ISO 9000 in the Public Service*. <http://www.mampu.gov.my>.
- MAMPU Online (1999a). Implementation of MS ISO 9000. <http://home.mampu.gov.my>.
- MAMPU Online (1999b). *Status of ISO 9000 Implementation in Government*. http://home.mampu.gov.my/ISO9000/iso_index.htm (10 Aug, 1999).
- Matsushita, K. (1987). *Bukan Kerana Periuk Nasi Sahaja: Suatu Etos Niaga, Suatu Etika Pengurusan* (translated by Rajendran, M.). Kyoto LPHP Institut, Inc.
- Mehrotra, R. (1992). Work culture and work ethos. *Jurnal Produktiviti*, 12, 4-17.
- Owens, R. (1995). *Organizational Behavior in Education* (5th edn.). Needham Heights, MA: Allyn Bacon.
- Pekeliling Kemajuan Pentadbiran Awam Bil. 1 (1992). *Panduan Pengurusan Kualiti Menyeluruh (TQM) bagi Perkhidmatan Awam*. Malaysia: Jabatan Perdana Menteri.
- Price, M. & Chen, E. (1993). Total quality management in small high technology company. *California Management Review*, 35 (3), 96-117.
- Schmidt, W. & Finnigan, J. (1992). *The Race Without a Finish Line: America's Quest for Total Quality Organization*. San Francisco: Jossey-Bass.
- Schiller, B. (1991). *The Economy Today* (5th edn.). New York: McGraw-Hill.
- Schultz, L. & Vollum, J. (1992). Introduction: the transformation model. In J. Persico (Ed.). *The TQM Transformation: A Model for Organizational Change*. New York: Quality Resources.

- Shingo, S. (1985). *Zero Quality Control: Source Inspection and The Poka-Yoke System* (translated by Dillon, A.). Cambridge: Productivity Press.
- Shores, A. (1990). *A TQM Approach to Achieving Manufacturing Excellence*. Wisconsin: Quality Press.
- Spencer, P. (1992). *World Class Performance Through Total Quality: A Practical Guide to Implementation*. London: Chapman & Hall.
- Stemple, R. (1993). Introduction to total quality management. In J. Ross (Ed.), *Total Quality Management: Text, Cases and Reading*. Florida: St. Lucie Press.