

**THE IMPLEMENTATION OF ISO 9000 QUALITY  
MANAGEMENT SYSTEM AND BUSINESS PERFORMANCE  
OF CONTRACTORS IN MALAYSIA**

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**UNIVERSITI UTARA MALAYSIA  
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**THE IMPLEMENTATION OF ISO 9000 QUALITY MANAGEMENT  
SYSTEM AND BUSINESS PERFORMANCE OF CONTRACTORS  
IN MALAYSIA**

This dissertation is submitted to the Director, Centre for Graduate Studies,  
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By

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## **ABSTRACT (ENGLISH)**

This study investigates the implementation of ISO 9000 quality management practices and perceived business performance of contractors in Malaysia. The ISO 9000 quality management system practices were operationalised using four variables; they are management responsibility, resource management, product realisation, and measurement, analysis and improvement. The dependent variable is perceived business performance. The objectives of this study are: 1) to determine whether there are differences in perceived business performance, management responsibility, resource management, product realisation, and measurement, analysis and improvement between the ISO 9000 certified companies and non-ISO 9000 certified companies, 2) to determine whether there are relationships between ISO 9000 quality management practices and perceived business performance of contractors in Malaysia, and 3) to identify the most influencing variable in the ISO 9000 quality management practices that affects perceived business performance of the contractor, as well as identify the extent to which the variable may affect business performance. There are two main hypotheses, and 10 specific hypotheses that were posited and tested. The study was based on a survey design and the time horizon was cross-sectional. The survey was carried out randomly on contractors operating in Peninsular of Malaysia. The numbers of respondents for ISO 9000 and non-ISO 9000 participated in this study were 54 and 270 companies, respectively. The study hypotheses were tested using *t*-test, correlation and multivariate analyses. The results supported all the hypotheses of the study. The results suggest that there are differences between the ISO 9000 and non-ISO 9000 certified companies, in terms of perceived business performance, management responsibility, resource management, product realisation, and measurement, analysis and improvement. The results of correlational analyses revealed that there are associations between the implementation of ISO 9000 quality management and perceived business performance of contractors in Malaysia. Regression analyses also revealed that three variables in the ISO 9000 quality management practices indicated positive relationship with perceived business performance of contractors in Malaysia, and these are management responsibility, product realisation, and resource management. This study concluded that there are differences in terms of perceived business performance, management responsibility, resource management, product realisation, and measurement, analysis and improvement between ISO 9000 certified contractors and non-ISO 9000 certified contractors. The constructs in the ISO 9000 Quality Management System are found to be associated with perceived business performance of contractors.

## ABSTRAK (BAHASA MELAYU)

Kajian ini menyelidik perhubungan di antara pelaksanaan sistem pengurusan kualiti ISO 9000 dan persepsi terhadap prestasi perniagaan kontraktor di Malaysia. Sistem pengurusan kualiti ISO 9000 diwakili oleh empat angkubah tidak bersandar, iaitu 1) tanggungjawab pengurusan, 2) pengurusan sumber, 3) realisasi produk, dan 4) pengukuran, analisis dan penambahbaikan. Angkubah bersandar ialah prestasi perniagaan. Objektif kajian ini adalah: 1) menentukan sama ada terdapat perbezaan persepsi terhadap prestasi perniagaan, tanggungjawab pengurusan, pengurusan sumber, realisasi produk, dan pengukuran, analisa dan penambahbaikan di antara kontraktor yang mempunyai sistem pengurusan kualiti ISO 9000 dan kontraktor yang tidak mempunyai sistem pengurusan kualiti ISO 9000, 2) menentukan sama ada terdapat perkaitan di antara sistem pengurusan kualiti ISO 9000 dan persepsi prestasi perniagaan kontraktor di Malaysia, dan 3) mengkaji angkubah manakah di dalam sistem pengurusan kualiti ISO 9000 yang memberi kesan kepada persepsi prestasi perniagaan, dan sejauh mana ianya mempengaruhi prestasi perniagaan kontraktor di Malaysia. Terdapat dua hipotesis utama dan sepuluh hipotesis spesifik yang telah dikemuka dan diuji. Kajian ini adalah berbentuk tinjauan dan bersifat keratan rentas. Tinjauan telah dijalankan ke atas kontraktor yang dipilih secara rawak yang beroperasi di Semenanjung Malaysia. Jumlah responden di kalangan kontraktor yang mempunyai pengiktirafan ISO 9000 dan tidak diiktiraf masing-masing adalah 54 dan 270 orang. Hipotesis kajian telah diuji dengan menggunakan analisa *t*, analisa korelasi dan analisa multivariat. Kesemua hasil kajian menyokong hipotesis yang telah dibentuk itu. Kajian ini telah mendapati terdapat perbezaan terhadap persepsi prestasi perniagaan, tanggungjawab pengurusan, pengurusan sumber, realisasi produk, dan pengukuran, analisa dan penambahbaikan di antara kontraktor yang mempunyai pengiktirafan ISO 9000 berbanding dengan kontraktor yang tidak mempunyai pengiktirafan ISO 9000. Analisa korelasi pula menunjukkan terdapat perkaitan di antara angkubah-angkubah sistem pengurusan kualiti ISO 9000 dan persepsi prestasi perniagaan kontraktor di Malaysia. Analisa regresi pula telah menunjukkan tiga angkubah, iaitu realisasi produk, pengurusan sumber, dan tanggungjawab pengurusan berupaya untuk dijadikan peramal kepada persepsi prestasi perniagaan kontraktor di Malaysia. Kesimpulan kajian ini adalah terdapat perbezaan dari segi persepsi prestasi perniagaan, tanggungjawab pengurusan, pengurusan sumber, realisasi produk, dan pengukuran, analisa dan penambahbaikan di antara kontraktor yang mempunyai pengiktirafan ISO 9000 dengan kontraktor yang tidak mempunyai pengiktirafan ISO 9000. Kontruk di dalam sistem pengurusan kualiti ISO 9000 didapati mempunyai perkaitan dengan persepsi prestasi perniagaan kontraktor.

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## **CHAPTER 1**

### **INTRODUCTION OF THE RESEARCH**

#### **1.1 Background of the Study**

Malaysia is known as one of the fastest growing countries in South East Asia. The Vision 2020 initiated by the fourth prime minister of Malaysia, Tun Dr. Mahathir Mohamed, gives the nation a long-term goal to strive for by the year 2020, that is, to be a developed nation. Every individual, organisation, sector and industry is responsible in ensuring the success of the Vision, hence, there are many challenges that the country needs to face. Therefore, every organisation has to equip themselves with all the strategies that will lead to stronger entities. There are many opportunities for the Malaysian companies to compete with the foreign companies locally and internationally. It is essential for all Malaysian companies to be very competitive. Consequently, the ability to sustain in the competitive environment is now becoming the agenda of every organisation.

The common strategies of any organisation to compete are the ability to produce new products (Oakland, 1993; Pan, 2003), deployment of new technology in production (Oakland, 1993; Beckmerhagen *et al.*, 2003), training programmes (Oakland, 1993; Quazi *et al.*, 2004), application of quality control techniques

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## REFERENCES

- Aarts, F.M. & Vos, E. (2001). The impact of ISO registration on New Zealand firm's performance: A financial perspective. *The Total Quality Management Magazine*, 13(3), 180-191.
- Abdul Naveed Tariq (2002). *Organisational Context and its Impact on Level of Quality Management in Small and Medium Scale Enterprises of Pakistan*. Ph.D Dissertation, Universiti Putra Malaysia, Malaysia.
- Abdul Rashid Abdul Aziz (2002). The realities of applying total quality management in the construction industry. *Structural Survey*, 20(2), 88-96.
- Abdullah, J.V.B.T. (2001). Globalisation. *National Seminar on Future Trends in Construction and Manufacturing Towards a Borderless World*, October 2001.
- Adam, C & Neely, A. (2000). The performance prism to boost M&A success. *Measuring Business Excellence*, 4(3), 19-23.
- Adam, E., Corbett, L.M., Flores, B.E., Harrison, N.J., Lee, T.S., Rho, B.H., Ribera, J., Samson, D. & Westbrook, R. (1997). An international study of quality improvement approach and firm performance. *International Journal of Operations and Production Management*, 17(9), 842-873.
- Adu, K.A. (1998). Marketing activities and business performance: Evidence from foreign and domestic manufacturing firms in a liberalised developing economy. *Marketing Intelligence & Planning*, 16(7), 436-442.
- Adu, K.A., Fyall, A. & Singh, S. (2001). Marketing effectiveness and business performance in the financial services industry. *Journal of Services Marketing*, 15(1), 18-34.
- Ahire, L. S, & O'Shaughnessy, K.C. (1998). The role of top management commitment in quality management: an empirical analysis of the auto parts industry. *International Journal of Quality Science*, 3(1), 5-37.
- Ahmed, A.R., Williams, T., Hibberd, P., & Gronow, S. (1998). Measuring the effectiveness of quality assurance systems in the construction industry. *Property Management*, 16(4), 222-228.
- Ahmed, N. U., Montagno, R.V. & Firenze, R.J. (1998). Organizational performance and environmental consciousness: An empirical study. *Management Decision*, 36(2), 57-62.
- Alreck, P. L. & Settle, R. B. (1995). *The Survey Research Handbook*, (2<sup>nd</sup> ed.). Boston: Irwin.

- Anderson, J.C., Rungtusanatham, M. & Schroeder, R.G. (1994). A theory of quality management underlying the Deming management method. *The Academy of Management Review*, 19(3), 472-509.
- Anderson, M. & Sohal, A.S. (1999). A study of the relationship between quality management practices and performance in small businesses. *International Journal Of Quality & Reliability Management*, 16(9), 859-877.
- Anderson, S.W., Daly, J.D. & Johnson, M.F. (1999). Why firms seek ISO 9000 certification: regulatory compliance or competitive advantage?. *Production and Operations Management*, 8(1), 28-43.
- Atkin, K.T. & Potheary, J. (1994). Checklist of critical success factors for building projects. *Journal of Management in Engineering*, 9(3), 204-221.
- Augustyn, M.M. & Pheby, J.D. (2000). ISO 9000 and performance of small tourism enterprises: a focus on Westons Cider Company. *Managing Service Quality*, 10, 374-388.
- Auty, S. & Long, G. (1999). "Tribal warfare" and gaps affecting internal service quality, *International Journal of Service Industry Management*, 10 (1), 7-22.
- Avery, S. (1994). ISO 9000 certification: does it help or hinder?. *Purchasing*, 116(1), 101-105.
- Bailan, E. S. (1982). *How to Design, Analyze, and Write Doctoral Research*. University Press America.
- Barnes, F.C. (1988). ISO 9000 Myth and Reality: A Reasonable Approach to ISO 9000. *SAM Advanced Management Journal*, 63(2), 23-30.
- Barret, P. (2000). Systems and relationships for construction quality. *International Journal of Quality & Reliability Management*, 17(4/5), 377-392.
- Bauban, R.D & Kracum, J.J. (1995). Innovation – what more can we do? *Journal of Construction Engineering and Management*, 122(3), 265-273.
- Beckmerhagen, I.A., Berg, H.P., Karapetrovic, S. V. & Willborn, W.O. (2003). Integration of management systems: focus on safety in the nuclear industry. *International Journal of Quality & Reliability Management*, 20(2), 210-228.
- Beechner, A. B. & Koch, J. E. (1997). Integrating ISO 9000 and ISO 14000, *Quality Progress*, 30 (2): 33-36.

- Bentler, P. & Bonett, D. G. (1980). Significance tests and goodness of fit in the analysis of covariance structures, *Psychological Bulletin*, 88 (1): 588-606.
- Bernstein, H.M, Kissinger, J.P. & Kirksey, W. (1998). Moving innovation into practice. *Civil Engineering in the Asia Region Proceedings*. ASCE, 250-259.
- Berry, L. L. & Parasuraman, A. (1991) *Marketing Services: Competing through quality*, New York: The Free-Press.
- Berry, L. L. (1991). The employee as customer, *Journal of Retail banking*, 3 (1), 271-278.
- Berry, T. H. (1991). *Managing the Total Quality Transformation*. New York: McGraw-Hill. Inc.
- Bitton, D., DeWitt, D.J., Turbyfill, C. (1990). Benchmarking Database Systems A Systematic Approach. *VLDB*, 8-19.
- Bond III, E.U. & Fink, R.L. (2003). Customer satisfaction and the marketing-quality interface. *The Journal of Business and Industrial Marketing*, 18(3), 204-218.
- Bontis, N., Keow, W.C.C. & Richardson, S. (2001). Intellectual capital and business performance in Malaysian industries. *Journal Of Intellectual Capital*, 1(1), 85-100.
- Bossink, B.A.G. (2002). Innovative quality management practices in the Dutch construction industry. *International Journal of Quality & Reliability Management*, 19(2), 170-186.
- Brah, S. A., Wong, J. L., & Rao, B. M. (2000). TQM and business performance in the service sector: a Singapore study, *International Journal of Operation and Production Management*, 20 (11), 1293-1312.
- Brah, S.A. & Ong, A.L. (2000). Understanding the benchmarking process in Singapore, *International Journal of Quality & Reliability Management*. 17(3), 259-275.
- Brehm, S. S., Kassir, S. M. & Fein, S. (1999). *Social Psychology*, (4<sup>th</sup> ed.). Boston: Houghton Mifflin.
- Brocka., B. & Brocka, M. S. (1992). *Quality Management? Implementing the Best Ideas of the Masters*, New York: Irwin, Inc.
- Bryde, J.D. (2001). Modelling project management performance. *International Journal of Quality & Reliability Management*, 20(2), 229-254.
- BSI (1987). ([http:// www.connet.org/searchAll.jsp](http://www.connet.org/searchAll.jsp))

- Business Times* (1999). ISO 9000: rise in company productivity?. *Business Times*, 28 October, Malaysia.
- Buttle, F. (1996). An investigation of the willingness of UK certificated firm to recommend ISO 9000. *International Journal of Quality Science*, 1(2), 40-50.
- Buttle, F. (1996a). ISO 9000: Marketing motivations and benefit. *International Journal of Quality and Reliability Management*, 14(9), 936-947.
- Carlsson, D. & Carlsson, M. (1996). Experiences of implementing ISO 9000 in Swedish industry. *International of Quality & Reliability Management*, 13(7), 36-47.
- Carr, A. (1997). The learning organization: New lessons/thinking for the management of change and management development? *The Journal of Management Development*, 16(4), 224 – 231
- Carr, A. (2000). Critical theory and the management of change in organizations. *Journal of Organizational Change Management*, 13(3), 208-220
- Carr, W. (1998). Learning for leadership. *Leadership and Organization Development Journal*, 17(6), 46-52.
- Caruana, A. & Pitt, L. (1997). INTQUAL – an internal measure of service quality and the link between quality and business performance. *European Journal of Marketing*, 13(8), 604 – 616.
- Chan, A.P.C & Chan, A.P.L. (2004). Key performance for measuring construction success. *Benchmarking: An International Journal*, 11(2), 203-221.
- Chen, H.C. (1999). A study of factors affecting the implementation of ISO 9000 in Taiwan's construction industry (China), University of Northern Iowa.
- Chen, W.H. & Lu, R.S.Y. (1996). A Chinese approach to quality transformation. *International Journal of Quality and Reliability Management*, 15(1), 72-84.
- Chew, Y.S. & Chai, L.N. (1996). *ISO 9002 in the Malaysian Construction Industry: Guide and Implementation*. McGraw-Hill Book Co, Kuala Lumpur.
- Chua, C.C., Goh, M. & Wan, T.B. (2003). Does ISO 9000 certification improve business performance?. *International Journal of Quality & Reliability Management*, 20(8), 936-953.
- Churchill, G. A. Jr. (1979). A paradigm for developing better measures of marketing constructs, *Journal of Marketing Research*, 16 (1): 64-73.

- CIDB (2002). *Issues and Challenges in Malaysian construction industry*. CIDB, Kuala Lumpur.
- CIDB (2002). *Tinjauan Industri Pembinaan: 2001-2002*. CIDB. Kuala Lumpur.
- CIOB (1982). ([http:// www.ciobinternational.org/openArticle](http://www.ciobinternational.org/openArticle) )
- Collins Birmingham University International Language Database (Cobuild) English Language Dictionary* (1987). London: Collins
- Crosby, P. B. (1979). *Quality is Free*, New York: McGraw-Hill.
- Crosby, P.B. (1984). *Quality Without Tears*, International edition, New York: McGraw-Hill.
- Crosby, P.B. (1989). *Let's Talk Quality: 96 Questions that You Always Wanted to Ask Phil Crosby*, New York: McGraw-Hill.
- Cusumano, J.L.G. & Selen, W.J. (1997). A comparison of international quality standards: Divergence and agreement. *Business Process Management Journal*, 3(3), 205-217.
- Dahlgaard, J.J., Kristensen, K., Kanji, G.K., Juhl, H.H. & Sohal, A.S. (1998). Quality Management practices: A comparative study between East and West. *International Journal of Quality & Reliability Management*, 15(8/9), 812-826.
- Dalrymple, J., Edgeman, R.L., Finster, M., Cusumano, J.L.G., Hensler, D.A. & Parr, W.C. (1999). Next generation quality management: multinational, multidisciplinary and performance-focused. *The TQM Magazine*, 11(3), 138-141.
- Davis, D. & Cosenza, R. M. (1988). *Business Research for Decision Making*, (2<sup>nd</sup> ed.). Boston: PWS-Kent Publishing.
- Deming, W. E. (1982). *Quality, Productivity and Competitive Position*, Cambridge, Mass: Center for Advanced Engineering Study, MIT Press.
- Deming, W.E. (1986). *Out of the Crisis*. Cambridge, Mass: Centre for Advanced Engineering Study, MIT Press.
- Department of Trade and Industry (1990), ([http:// www.dti.gov.uk](http://www.dti.gov.uk))
- Dess, G.G. & Robinson, R.B. (1984). Measuring organizational performance in the absence of objective measure: the case of the privately held firm and conglomerate business unit. *Strategic Management Journal*, 5, 265-273.

- Dixon, J.R., Nanni, A.J. & Vollmann, T.E. (1990). *The new performance challenge: measuring operations for world class competition*. Dow Jones: Irwin Homewood IL.
- Eccles, R.G. & Pyburn, P.J. (1992). Creating a Comprehensive System to Measure Performance. *Management Accounting*, October Issue, 41-44.
- Edum-Fotwe, F.T., Gibb, A.G.F. & Benford-Miller, M. (2004). Reconciling construction innovation and standardisation on major projects. *Engineering, Construction and Architectural Management*, 11(5), 366-372.
- EFQM (1999). *The European Quality Award 1999 Information Brochure*. Brussels: European Foundation for Quality Management.
- Emory, C. W. & Cooper, D. R. (1991) *Business Research Methods*, (4<sup>th</sup> ed.). Homewood: Irwin.
- European Foundation for Quality Management (1997), *Self-Assessment: Guidelines for (Private) Companies*. European Foundation for Quality Management, Belgium
- Feigenbaum, A. V. (1956). *Total quality control*. New York: McGraw-Hill.
- Feigenbaum, A. V. (1991). *Total Quality Control*, (3<sup>rd</sup> ed.). New York: McGraw-Hill.
- Feigenbaum, A.V. (1983). *Total quality control: Engineering and Management*, (3<sup>rd</sup> ed.). New York: McGraw-Hill.
- Feng, Y.C (1998). Performance evaluation of ISO 9000 registered companies in Taiwan. *The TQM Magazine*, 10(2), 132-138.
- Feurer, R. & Chaharbaghi, K. (1996). Competitive environments, dynamic strategy development capabilities and business performance. *Benchmarking for Quality Management & Technology*, 3(3), 32-49.
- Flanagan, K., Richardson, W. & Jennie, P. (1986). Mapping the direction of project success. *Project Management Journal*, 2(1), 34-40.
- Flynn, B. B., Schroeder, R. G. & Sakakibara, S. (1994). A framework for quality management research and an associated measurement instrument, *Journal of Operations Management*, 11 (1), 339-366.
- Flynn, B. B., Schroeder, R. G. & Sakakibara, S. (1995). The Impact of Quality Management Practices on Performance and Competitive Advantage, *Decision Sciences*, 26 (5), 659-692.



- Flynn, B.B. (1994). The relationship between quality management practices, infrastructure and first product innovation. *Benchmarking for Quality Management and Technology*, 1, 48-64.
- Forker, L.B., Vickery, S.K. & Droge, C.L.M. (1996). The contribution of quality to business performance. *International Journal of Operations & Production Management*, 3, 32-49.
- Fryer, B. (1990). *The Practice of Construction Management – Second Edition*. Oxford, BSP Professional.
- Fuentes, C.M., Benavent, F.B., Moreno, M.A.E., Cruz, T.F.G. & Val, M.P. (2003). ISO 9000-based quality assurance approached and their relationship with strategic analysis. *International Journal of Quality & Reliability Management*, 20(20), 664-690.
- Gabor, A. (1990). *The Man Who Discovered Quality: How W. Edwards Deming Brought the Quality Revolution to America: The Stories of Ford, Xerox, and Gm*. New York: The Free Press.
- Garvin, D. A. (1988). *Managing Quality: The Strategic and Competitive Edge*, New York: The Free Press.
- Garvin, D.A. (1984). What Does Product Quality Really Mean?. *Sloan Management Review*, 26(1), 25-43.
- Gibson, J.L., Ivancevich, M.J. & Donnelly, J.H. (1987). *Organizations: Behavior, Structure and Process*, (4<sup>th</sup> ed.). Texas: Business Publications, Inc.
- Giles, R. (1997). ISO 9000 perspective for the construction industry in the UK. *Training For Quality*, 5(4), 178-181.
- Gupta, A. (2000). Quality Management practices of ISO 9000 vs. non-ISO companies: A case of Indian industry. *Industrial Management & Data Systems*, 100(9), 451-455.
- Hair, J. F. Jr., Anderson, R. E., Tatham, R. L. & Black, W. C. (1998). *Multivariate Data Analysis with Readings*, (5<sup>th</sup> ed.). New Jersey: Prentice-Hall, Inc.
- Harris. F. & McCaffer (2001). *Modern Construction Management*. London, Granada Publishing Ltd.
- Hart, C.W. & Bogan, C.E. (1992). *The Baldrige*, McGraw-Hill, New York, NY.
- Hasegawa, F. (1986). *Built by Japan – Competitive Strategy of the Japanese Construction Industry*. New York, Wiley Publications.

- Helms, M.M., Dibrell, C. & Wright, P. (1997). Competitive strategies and business performance: Some evidence from the adhesives and sealants industry. *Management Decision*, 35(9), 6899-703.
- Hendriks, K. B. & Singhal, V. R. (1997). Does implementing an effective TQM program actually improve operating performance? Empirical evidence from firms that have won quality awards, *Management Science*, 43 (9), 1258-1274.
- Ho, S. K. (1995). *TQM : An Integrated Approach*, London: Kogan Page Limited.
- Ho, S.K. (1999). Change for the better via ISO 9000 and TQM. *Management Decision*, 37(4), 381-385.
- Huarnag, F. & Chen, Y-Z. (2002). Relationship of TQM philosophy, methods and performance: A survey in Taiwan. *Industrial Management & Data Systems*, 102(4), 226-234.
- Huarnag, F. (1998). Integrating ISO 9000 with TQM spirits: A Survey. *Industrial Management and Data Systems*, 98(8), 373-379.
- Iaquinto, A. (1999). Can winners be losers? The case of the Deming prize for quality and performance among large Japanese manufacturing firms. *Managerial Auditing Journal*, 14(1/2), 28-35.
- Idris, M.A., Mcewan, W. & Belavendram, N. (1996). The adoption of ISO 9000 and total quality management in Malaysia. *The TQM Magazine*, 8(5), 65-68.
- Institution of Surveyors Malaysia, <http://ism.org.my>
- Ishikawa, K. (1976). *Guide to Quality Control*, (2<sup>nd</sup> ed.). White Plains, New York: UNIPUB, Kraus International.
- Ishikawa, K. (1985). *What is Total Quality Control? The Japanese Way*. New York: Prentice-Hall.
- Ishikawa, K. (1990). *Introduction to Quality Control*, UK: Chapman & Hall.
- ISO (1997, June 30). *Quality Management Principles and Guidelines on their Application*. London: BSI Standards. (ISO/TC 176/SC 2/N 376/30)
- ISO (1999, February 22). ISO 9001:2000 Quality Management Systems – Requirements. Switzerland: ISO Central Secretariat. (ISO/CD2 9001:2000, ISO/TC 176/SC2/N434/22)
- ISO (2000), *Quality Management Systems – Fundamentals and Vocabulary*. International Organisation for Standardisation: Geneva. (Final Draft International Standard)

- ISO 9000 (2000), *Quality Management Systems – Fundamentals and Vocabulary*, Final Draft International Standard, International Organisation for Standardisation, Geneva.
- Jeng, Y.C. (1998). Performance evaluation of ISO 9000 registered companies in Taiwan. *The TQM Magazine*, 10(2), 132-138.
- Johnson, P.M. (2001). Linking QS-9000 to quality performance outcomes. *The TQM Magazine*, 13(30), 161-168.
- Jones, R., Arndt, G. & Kustin, R. (1997). ISO 9000 Among Australian companies: Impact of time and reasons for seeking certification on perceptions of benefits received. *International Journal of Quality and Reliability Management*, 14(7), 650-660.
- Juran, J. M. & Gryna, F. M. (1988). *Juran Quality Control Handbook*, (4<sup>th</sup> ed.), New York: McGraw-Hill.
- Juran, J. M. & Gryna, F. M. (1993). *Quality Planning and Analysis: From Product Development through Use*, New York: McGraw-Hill.
- Juran, J. M. (1986). Quality Trilogy, *Quality Progress*, 19 (8): 14-24.
- Juran, J. M. (1988). *Juran on Planning for Quality*, New York: Free Press.
- Juran, J. M. (1992). *Juran on quality by design: The new steps for planning quality into goods and services*, New York: The Free Press.
- Juran, J.M. (1989). *Juran on Leadership for Quality: An Executive Handbook*, New York: The Free Press.
- Kam, C.W. & Tang, S.L. (1997). Development and implementation of quality assurance in public construction works in Singapore and Hong Kong. *International Journal of Quality and Reliability Management*, 14(9), 909-928.
- Kamal Naser, Yusuf Karbhari & Mohammad Zulkifli Mokhtar (2004). Impact of ISO 9000 registration on company performance: Evidence from Malaysia. *Managerial Auditing Journal*, 19(4), 509-516.
- Kangari, R., & Miyatake, Y. (1997). Developing and Managing Innovative Construction Technologies in Japan, *ASCE Journal of Construction Engineering and Management*, 123(1), 72-84.
- Kanji, G. K. & Asher, M. (1993). Total quality management process: A systematic approach. *Total Quality Management*, 4 (3), 10-12.

- Kaplan, R.S., & Norton, D.P. (1996). Using balanced scorecard as a strategic management system. *Harvard Business Review*, 74(1), 75-85.
- Karapetrovic, S. & W. Willborn (1988). Audit and self-assessment in quality management, comparison and compatibility. *Managerial Auditing Journal*, 16(6), 366-377.
- Karapetrovic, S. (2002). Strategies for the integration of management systems and standards. *TQM Magazine*, 14(1), 61-67.
- Kaye, P.J. (2000). ISO 9000: should your company seek certification?. *Pennsylvania CPA Journal*, 70(4), 7-8.
- Keagan, D.P., Elier, R.G. & Jones, C.R. (1989). Are your performance measures obsolete?'. *Management Accounting*, 70(1), 45-50.
- Kennerley, M. & Neely, A. (2002). A framework of the factors affecting the evolution of performance measurement systems. *International Journal of Operations & Production Management*. 22(11), 1222-1245.
- Kerlinger, F. (1973). *Foundations of Behavioral Research*, New York: Holt, Rinehart and Winston.
- Khairul Anuar Mohd Ali (2002). *Hubungan Amalan Pengurusan Kualiti Cemerlang dengan Kepuasan Pelanggan Dalam dan Prestasi Organisasi Pihak Berkuasa Tempatan di Semenanjung Malaysia*. Ph.D. Dissertation, Universiti Utara Malaysia, Malaysia.
- Koskella, L., & Howell, G. (2002), *The Underlying Theory of Project Management is Obsolete*. Proceedings of PMI Research Conference, 293-302.
- Kotler, P. (2000). *Marketing Management: analysis, planning, implementation and control*, (10<sup>th</sup> ed.). New Jersey: Prentice Hall.
- Krasachol, L. & Tannock, J.D.T. (1999). A study of TQM implementation in Thailand. *International Journal of Quality and Reliability Management*, 16(5), 418-432.
- Krejcie, R. & Morgan, D. (1970). Determining sample size for research activities, *Educational and Psychological Measurement*, 30 (3), 607-610.
- Kuwaiti, M.E. & Kay, J.M. (2000). The role of performance measurement in business process re-engineering. *International Journal of Operations & Production Management*, 20(2), 1411-1426.

- Laborde, M. & Sanvido, V. (1994). Introducing new process technologies into construction companies. *Journal of Construction Engineering & Management*, 120(3), 448-509.
- Laquinto, A.L. (1999). Can winner be losers? The case of the Deming Prize for quality and performance among large Japanese manufacturing firms. *Managerial Auditing Journal*, 14(1/2), 28-35.
- Larsen, B. (2001). One measurement is better than 1000 opinions: is it?. *Managerial Auditing Journal*, 16(2), 63-68.
- Laszlo, G.P. (2000). ISO 9000-2000 version: Implications for applicants and examiners. *The TQM Magazine*, 12(5), 336-339.
- Latham, J. (1994). Project Management: cost, time and quality. *International Journal of Project Management*, 17(6), 337-342.
- Lee, D.J., Pae, J.H. & Wong, Y.H. (2000). A model of close business relationships in China (Guanxi). *European Journal of Marketing*, 35(1/2), 51-69.
- Lee, T.Y. (1998). The development of ISO 9000 certification and the future of quality management: A survey of certified firms in Hong Kong. *International Journal of Quality & Reliability Management*, 15(2), 162-177.
- Lee, T.Y., Leung, H.K.N. & Chan, K.C.C. (1999). Improving quality management on the basis of ISO 9000. *The TQM Magazine*, 11(2), 88-94.
- Leung, H.K.N., Chan, K.C.C. & Poon, C. (1999). Software tools for ISO 9000 certification. *Managerial Auditing Journal*, 14(1/2), 51-57.
- Leung, H.K.N., Chan, K.C.C. & Lee, T.Y. (1999). Costs and benefits of ISO 9000 series: A practical study. *International Journal of Quality and Reliability Management*, 16(7), 675-690.
- Li, L.X. (2000). An analysis of sources of competitiveness and performance of Chinese manufacturers. *International Journal of Operations and Production Management*, 20(3), 299-315.
- Lipovatz, D. (1998). Leadership performance in Greek enterprises using the EQA framework. *The TQM Magazine*, 10 (3), 194-203.
- Lipovatz, D., Stenos, F. & Vaka, A. (1999). Implementation of ISO 9000 quality systems in Greek enterprises. *International Journal of Quality and Reliability Management*, 16(6), 534-551.

- Longman, A. & Mullins, J. (2004). Project management: key tool for implementing strategy. *Journal of Business Strategy*, 25(5), 64-60.
- Love, P.E.D. & Holt, G.D. (2000). Construction business performance measurement: The SPM alternative. *Business Performance Rate of Company's Employment Management Journal*, 6(5), 408-416.
- Love, P.E.D. & Li, H. (1998). From BPR to CPR – Conceptualising re-engineering in construction. *Business Process Management Journal*, Vol. 4, Number 4, pp. 291-305.
- Love, P.E.D., Smith, J. & Li, H. (1999). The propagation of rework benchmark metrics for construction. *International Journal of Quality & Reliability Management*, 16(7), 638-658.
- Loveman, G.W. (1998), Employee satisfaction, customer loyalty, and financial performance: an empirical examination of the service profit chain in retail banking, *Journal of Service Research*, 1 (1), 18-31.
- Low, S.P. & Hennie, F.O. (1997). The effective maintenance of quality management systems in the construction industry. *International Journal of Quality and Reliability Management*, 14(8), 768-790.
- Low, S.P. & Yeo, H.K.C. (1998). A construction quality costs quantifying system for the building industry. *International Journal of Quality & Reliability Management*, 15(3), 329-349.
- Lynch, R.L. (1992). *Measure Up! The Essential Guide to Measuring Business Performance*. Mandarin, London.
- Lynn, G. (1998). ISO certification ensures product quality. *Computer Dealer News*, 14(33), 32.
- MacAdam, R. & Fulton, F. (2002). The impact of the ISO 9000:2000 quality standards in small software firms. *Managing Service Quality*, 12(5), 336-345.
- Madu, C.N. (1998). An empirical assessment of quality: Research considerations. *International Journal of Quality Science*, 3(4), 348-355.
- Magd, H., Kadasah, N. & Curry, A. (2003). ISO 9000 implementation: a study of manufacturing companies in Saudi Arabia. *Managerial Auditing Journal*, 18(4), 313-322.
- Malhotra, N. K. (1999). *Marketing research: An applied orientation*, (3<sup>rd</sup> ed.). New Jersey: Prentice Hall.

- Mallak, L.A., Bringelson, L.S. & Lyth, D.M. (1997). A cultural study of ISO 9000 certification. *International Journal of Quality and Reliability Management*, 14(9), 328-348.
- McAdam, R. & Mckeown, M. (1999). Life after ISO 9000: An analysis of the impact of ISO 9000 and Total Quality Management on small businesses in Northern Ireland. *Total Quality Management*, 10(2), 229.
- Mccabe, S. (1996). Creating excellence in construction companies: UK contractors' experiences of quality initiatives. *The TQM Magazine*, 8(6), 14-19.
- McKim, J., Wong, W.S. & Yeong C.M. (2000). Time and cost performance of building contracts in Australia and Taiwan. *Journal of Construction Procurement*, 34(4), 45-48.
- McLachlan, V.N. (1996). In praise of ISO 9000. *The TQM Magazine*, 8(3), 21-23.
- Meegan, S.T. & Taylor, W.A. (1997). Factors influencing a successful transition from ISO 9000 to TQM - the influence of understanding and motivation. *International Journal of Quality and Reliability Management*, 14(2), 100-117.
- Merriam-Webster's collegiate dictionary* (1993). Springfield, MA: Merriam-Webster.
- Miles, M. P., Munilla, L.S. & Russel, G.R. (1997). Marketing and Environmental Registration/Certification: What Industrial Marketers Should Understand About ISO 14000. *Industrial Marketing Management*, 26(4), 363-370.
- Miller, C. D. (1991). *Handbook of Research Design and Social Measurement*, Newsbury Park, California: Sage Publication.
- Miller, E., & Rice, A.K. (1967). *Systems of Organisation*. London: Tavistock Publications.
- Mohd Khairuddin Hashim. (2000). Business strategy and performance in Malaysian SMEs: A recent survey. *Malaysian Management Review*, December Issue, 1-10.
- Mohd Saidin Ayob (2002). The shortage of skilled workers, *Decisions Science*, 21(5), 54-32.
- Motwani, J. & Keirnan, S. (1998). Case study: A supplier's journey to achieving quality certification. *Logistics Information Management*, 11(1), 53-57.
- Motwani, J. (2001). Critical factors and performance measures of TQM, *The TQM Magazine*, 13 (4), 292-300.

- Mowday, R. T., Steers, R. M. & Porter, L. W. (1979). The Measurement of Organizational Commitment, *Journal of Vocational Behavior*, 14 (2), 224-247.
- Murphy, K. R. & Davidshofer, C. O. (1998). *Psychological Testing: Principles and Applications*, (4<sup>th</sup> ed.). New Jersey: Prentice-Hall, Inc.
- Murphy, R. (1999). Client perceived value within ISO 9000 consultancy projects. *Journal of Small Business and Enterprise Development*, 6(1), 37-54.
- Neely, A. (2000). Editorial: Performance measurement: theory and practice. *International Journal Business Performance Management*, 2(1), 34-56
- Neely, A., Adams, C., & Kennerly, M. (2002). *The Performance Prism: The Scorecard for Measuring and Managing Business Success*, Prentice-Hall, Hemel Hempstead.
- Neely, A., Fillippini, R., Forza, C., Vinell, A. & Hii, J. (2001). A framework for analysing business performance, firm innovative and related contextual factors: perceptions of managers and policy makers in two European regions. *Integrated Manufacturing Systems*, 12(2), 114-124.
- Neely, A., Gregory, M. & Platts, K. (1995). Performance measurement system design. *International Journal of Operation & Production Management*, 15(4), 45-51
- Neergaard, P. (1999). Quality Management: A survey on accomplished results. *International Journal of Quality and Reliability Management*, 16(3), 277-288.
- Ngowi, A.B. (2000). Impact of culture on the application of TQM in the construction industry in Botswana. *International Journal of Quality & Reliability Management*, 17(4/5), 442-452.
- Norlin, J.M. & Chess, W.A. (1997). *Human behavior and the social environment: social systems theory*, (3<sup>th</sup> ed.). Boston: Allyn and Bacon.
- Norusis, M. J. (1997). *SPSS for Windows: Guide to Data Analysis Release 7.5*, New Jersey: Prentice Hall.
- Nunnally, J. C. (1978). *Psychometric Theory*, (2<sup>nd</sup> ed.). New York: McGraw Hill.
- Oakland, J.S. (1993). *Total Quality Management: The Route to Improving Performance*, (2<sup>nd</sup> ed.). Oxford: Butterworth-Heinemann.
- Oppenheim, A. N. (1983). *Questionnaire Design and Attitude Measurement*, London: Heinemann.
- Otley, D. (1999). Performance management: a framework for management control research. *Management Accounting Research*, 10, 363-382.



- Palaneeswaran, E. & Kumaraswamy, M. (2000). Selection matters in construction supply chain optimisation, *International Journal of Physical Distribution and Logistics Management*, 30 (7/8), 661-680.
- Pan, J.N. (2003). A comparative study on motivation for and experience with ISO 9000 and ISO 14000 certification amongst Far Eastern countries. *Industrial Management & Data Systems*, 103(8), 564-578.
- Parasuraman, A., Zeithaml, V. A. & Berry, L. L. (1988). SERVQUAL: A multiple item scale for measuring consumer perceptions of service quality, *Journal of Retailing*, 64 (1), 12-40.
- Parasuraman, A., Zeithaml, W. & Berry, L. L. (1985). A conceptual model of service quality and its implications for future research, *Journal of Marketing*, 49 (3): 41-50.
- Peach, R.W. (1995). *The ISO 9000 Handbook*, (2<sup>nd</sup> Ed.), Homewood, IL: Irwin.
- Pearce, J.A, Robbins, D.K & Robinson, R.B. (1987). The impact of grand strategy and planning formality on financial performance. *Strategic Management Journal*, 8, 125-134.
- Petersen, P.B. (1991). Library of congress archives: Additional information about W. Edwards Deming (1900-1933). *Journal of Management History*, 3(2), 98-119.
- Pheng L.S., Kee, T.B. & Leng, A.A.A. (1998). Effectiveness of ISO 9000 in raising construction quality standards: Some empirical evidence using CONQUAS scores. *Structural Survey*, 17(2), 89-108.
- Pheng, L.S. & Shiua, S.C. (2000). The maintenance of construction safety: Riding on ISO 9000 quality management systems. *Journal of Quality in Maintenance Engineering*, 6(1), 28-44.
- Pheng, L.S. & Yeo, H.K.C. (1997). ISO 9000 quality assurance in Singapore's construction industry: An update. *Structural Survey*, 15(3), 113-117.
- Phillips, L.W., Chang, D.R. & Buzzell, R.D. (1983). Product quality, cost position and business performance: A test of some key hypotheses. *Journal of Marketing*, 47 (1), 26-43.
- Pilcher, R. (1992). *Principles of Construction Management*. McGraw-Hill Book Company: London.

- Pitt, L., Caruana, A. & Berthon, P.R. (1996). Market orientation and business performance: some European evidence. *International Marketing Review*, 13(1), 5-18.
- PKPA (1996). *Garis Panduan bagi Melaksanakan MS ISO 9000 dalam Perkhidmatan Awam*. Pekeliling Kemajuan Pentadbiran Awam, Bil. 2 Tahun 1996, Malaysia: MDC Penerbit Pencetak Sdn Bhd.
- Porter, L. J. & Parker, A. J. (1993). Total quality management – the critical success factors. *Total Quality Management*, 4(1), 13-22.
- Powell, T.C. (1995). Total quality management as competitive advantage: A review and empirical study, *Strategic Management Journal*, 16(1), 15-37.
- Quazi, H.A. & Jacobs, R.L. (2004). Impact of ISO 9000 certification on training and development activities: An exploratory study. *International Journal of Quality & Reliability*, 21(5), 497-517.
- Quazi, H.A., & Padibjo, S.R. (1998). A journey towards Total Quality Management through ISO 9000 certification - a study on small – medium – sized enterprises in Singapore. *International Journal of Quality and Reliability Management*, 15(5), 480-508.
- Rahman, S. & Sohal, A. S. (2002). A review and classification of total quality management research in Australia and an agenda for future research, *International Journal of Quality and Reliability Management*, 19 (1), 46-66.
- Rahman, S. (2001). A comparative study of TQM practice and organisational performance of SMEs with and without ISO 9000 certification. *International Journal of Quality & Reliability Management*, 18(1), 35-49.
- Rao, S. S., Ragu-Nathan, T. S. & Solis, L. E. (1997). Does ISO 9000 have an effect on quality management practices? An international empirical study, *Total Quality Management*, 8 (6), 335-346.
- Reck, J.L. (2001). The usefulness of financial and non-financial performance information in resource allocation decisions. *Journal of Accounting and Public Policy*, 20, 45-70.
- Roscoe, J. T. (1975). *Fundamental research statistics for the behavioral sciences*, New York: Holt.
- Rwelamila, P.D. and Hall, K.A. (1994). Total Systems Intervention: An integrated approach to time, cost, and quality management. *Construction Management and Economics*, E. & F.N. Spon Ltd., 13(3), 235-241

- Sanderson, S.M. (1998). New approaches to strategy: new ways of thinking for the millennium. *Management Decision*, 36(1), 9-13.
- Santos, A. & Powell, J.A. (2001). Assessing the level of teamwork in Brazillian and English construction sites, *Leadership and Organisation Development Journal*, 22(4), 166-174.
- Santos, A., Formoso, C.T. & Tookey, J.E. (2002). Expanding the meaning of standardisation within construction processes. *The TQM Magazine*, 14(1), 25-33.
- Santos, A., Powell, J.A. & Formoso, C.T. (2000). Setting stretch targets for driving continuous improvement in construction: analysis of Brazilian and UK practices. *Work Study*, 49(2), 50-58.
- Santos, L. & Escanciano, C. (2002). Benefits of the ISO 9000: 1994 system. Some considerations to reinforce competitive advantage. *International Journal of Quality & Reliability Management*, 19(3), 321-344.
- Saraph, J. V., Benson, P. G. & Schroeder, R. G. (1989). An Instrument for Measuring the Critical Factors of Quality Management, *Decision Sciences*, 20(4), 810-829.
- Schmitt, N. W. & Klimoski, R. J. (1991). *Research methods in human resources management*, Ohio: South-Western Publishing.
- Seddon. J. (1997). Ten arguments against ISO 9000. *Managing Service Quality*, 7(4), 162-168.
- Sekaran, U. (2000). *Research Methods for Business : A Skill Building Approach*, (3<sup>rd</sup> ed.). New York: John Wiley & Sons, Inc.
- Sharma, B. & Gadenne, D. (2002). An inter-industry comparison of quality management practices and performance, *Managing Service Quality*, 12(6), 394-404
- Sin, L.Y.M & Tse, A.C.B. (2000). How does marketing effectiveness mediate the effect of organizational culture on business performance? The case of service firms. *Journal of Services Marketing*, 14(4), 295- 309.
- Singels, J., Ruel, G. & van de Water, H. (2001). ISO 9000 series: Certification and performance. *International Journal of Quality & Reliability Management*, 18(1), 62-75.
- Smith, J., Love P.E.D. & Li, H. (1999). The propagation of rework benchmark metrics for construction. *International Journal of Quality and Reliability Management*, 16(7), 638-658.
- Sneddon, J. (1998). Quality at the crossroads. *Quality World*, March, 30-31.

- Sommerville, J., Craig, N. & Bowden, S. (2004). The standardisation of construction snagging. *Structural Survey*, 22(5), 251-258.
- Stone, C.L. (1996). Analysing business performance: counting the soft issues. *Leadership & Organization Development Journal*, 17(4), 21-28.
- Stoner, J. A. & Freeman, R.E. (1992). *Management*, (5<sup>th</sup> ed.). New Jersey: Prentice Hall.
- Sun, H. (1999). The patterns of implementing TQM versus ISO 9000 at the beginning of the 1990s. *International Journal of Quality and Reliability Management*, 16(3), 201-214.
- Sun, H. (2000). Total quality management, ISO 9000 certification and performance improvement. *International Journal of Quality and Reliability Management*, 17(2), 168-179.
- Taguchi, G. (1981). *On-line Quality Control during Production*. Tokyo: Japanese Standards Association.
- Taguchi, G. (1986). *Introduction to Quality Engineering*. Tokyo: Asian Productivity Organization.
- Tam, C.M., Deng, Z.M., Zeng, S.X. & Ho, C.S. (2000). Performance assessment scoring system of public housing construction for quality improvement in Hong Kong. *International Journal of Quality & Reliability Management*, 17(4), 467-478.
- Tang, S.L & Kam C.W. (1999). A survey of ISO 9001 implementation in engineering consultancies in Hong Kong. *International Journal of Quality and Reliability Management*, 16(6), 562-574.
- Terziovski, M. & Samson, D. (1999). The link between total quality management practice and organisational performance, *International Journal of Quality and Reliability Management*, 16 (3), 226-237.
- Thiagaragan, T., Zairi, M. & Dale, B.G. (2001). A proposed model of TQM implementation based on an empirical study of Malaysian Industry. *International Journal of Quality and Reliability Management*, 18(3), 289-306.
- Toakley, A.R. & Marosszeky, M. (2003). Towards total project quality – a review of research needs. *Engineering, Construction and Architectural Management*, 10(3), 219-228.
- Tsim, C.Y., Yeung, S.W.V., & Leung, C.T.E. (2002). An adaption to ISO 9001: 2000 for certified organizations. *Managerial Auditing Journal*, 17(5), 245-250.

- Tsiotras, G. & Gotzamani, K. (1996). ISO 9000 as an entry key to TQM: The case of Greek industry. *International Journal of Quality and Reliability Management*, 13(4), 64-76.
- Voehl, F., Jackson, P. & Ashton, D. (1994). *ISO 9000: An Implementation Guide for Small to Mid-Sized Businesses*. St Lucie Press.
- Wak, S. & Frank, M. (1999). Quality management systems – guidelines for performance improvements (ISO 9004: 200, IDT). *European Journal of Engineering Education*, 24(3), 249-259.
- Waldman, D. A. (1994). Designing performance management systems for total quality implementation, *Journal of Organizational Change Management*, 7 (2), 31-44.
- Walker, H.T.D., & Keniger, M. (2002). Quality management in construction: An innovative advance using project alliancing an Australia. *The TQM Magazine*, 14(5), 307-317.
- Walton, M. (1990). *Deming management at work*, London: Mercury.
- Walton, M. (1986). *The Deming Management Method*. New York: Pedigree.
- Wang, B.T.H. (1987), “*Construction and Development (with reference to Malaysia)*”, Pelanduk Publications
- Wiele, T.V.D. & Brown, A. (1998). Venturing down the TQM path for SMEs, *International Small Business Journal*, 13(6), 827-841.
- Withers, B.E. & Ebrahimpour, M. (1996). An examination of ISO 9000 registration practices of American, German and Japanese firms operating in the USA. *International Journal of Quality and Reliability Management*, 13(7), 8-22.
- Withers, B.E. & Ebrahimpour, M. (1999). Impact of ISO 9000 registration on European firms: A case analysis. *Integrated Manufacturing Systems*, 12(3), 139-151.
- Wong, K.S. (1999). *An Economic Analysis of Malaysian Construction Industry By Using An Input-Output Approach*. Ph.D. Dissertation, Universiti Teknologi Malaysia, Malaysia.
- Yamin, S. & Gunasekaran, A. (1999). Organizational quality – a cognitive approach to quality management. *The TQM Magazine*, 11(3), 180-187.
- Yates, L.V. & Gupta, V. (1994). Standards Create Need for Technical Workers. *Vocational Educational Journal*, 69(7), 61.

- Yee, T.Y., Leung, H.K.N. & Chan, K.C.C. (1999). Improving quality management on the basis of ISO 9000. *The TQM Magazine*, 11(2), 88-94.
- Yeo, K.C. & Low, S.P. (1998). A construction quality costs quantifying system for the building industry. *International Journal of Quality and Reliability Management*, 15(3), 329-349.
- Zairi, M. & Peters, J. (2002). The impact of social responsibility on business performance. *Managerial Auditing Journal*, 17(4), 174-178.
- Zairi, M. (1998). *Benchmarking for best practice: Continuous learning through sustainable innovation*. Oxford: Butterworth-Heinemann.
- Zakaria Abas (1999). *Budgetary slack in total quality management environment*. Ph.D. Dissertation, Universiti Utara Malaysia, Malaysia.
- Zeithaml, V. A. & Bitner, M. J. (2000). *Services Marketing*, (2<sup>nd</sup> ed.). New York: McGraw Hill.
- Zhang, Z. (2000). Quality management approach in China. *The TQM Magazine*, 12(2), 92-104.
- Zhang, Z.H., Shen, L.Y., Love, P.E.D., & Treloar, G. (2000). A framework for implementing ISO 14000 in construction. *Environmental Management and Health*, 11(2), 139-148.
- Zhiwei, Z. & Larry, S. (1999). A comparison of quality programmes: Total Quality Management and ISO 9000. *Total Quality Management*, 10(2), 291-298.
- Zikmund, G. W. (2000). *Business Research Methods*, (6<sup>th</sup> ed.). Fort Worth: The Dryden Press International Edition.
- Zuraidah Mohd Zain & Zainal Ariffin Ahmad (2000). Total quality management practice in Malaysia: how much is written?. *Malaysian Management Review*, 35(1), 51-58.