



UNIVERSITI PUTRA MALAYSIA

***QUALITY MANAGEMENT SYSTEM IN WOOD FURNITURE INDUSTRY IN
MALAYSIA***

CHONG YEN YOON

FH 2015 12



**QUALITY MANAGEMENT SYSTEM
IN WOOD FURNITURE INDUSTRY IN MALAYSIA**

By

CHONG YEN YOON

**Thesis Submitted to the School of Graduate Studies, Universiti Putra
Malaysia, in Fulfilment of the Requirements for the Degree of
Doctor of Philosophy**

December 2015

All material contained within the thesis, including without limitation text, logos, icons, photographs and all other artwork, is copyright material of Universiti Putra Malaysia unless otherwise stated. Use may be made of any material contained within the thesis for non-commercial purposes from the copyright holder. Commercial use of material may only be made with the express, prior, written permission of Universiti Putra Malaysia.

Copyright © Universiti Putra Malaysia



Abstract of thesis presented to the Senate of Universiti Putra Malaysia in
fulfilment of the requirement for the Degree of Doctor of Philosophy

QUALITY MANAGEMENT SYSTEM IN WOOD FURNITURE INDUSTRY IN MALAYSIA

By

CHONG YEN YOON

December 2015

Chair : Prof. Jegatheswaran Ratnasingam, PhD
Faculty : Forestry

It is a general perceived that most globalized furniture manufacturing companies are often forced to seek ISO certification to improve quality. In this context, the fact that Quality Management Systems and Standards which were introduced in Malaysia since 1987, is often perceived to be a marketing tool within the export-led furniture manufacturing industry. However, many researchers reported that firms were not sure whether ISO certification managed to instill quality in their organizations. Although, there are more than 4,000 wood-based companies in Malaysia, with 125 of them being large furniture manufacturers and exporters, the portion of ISO registration within the industry is comparatively small compared to the total number of furniture companies. Therefore, this study was undertaken: (1) to determine the level of awareness of ISO 9001 certification among furniture buyers and level of certification among manufacturers in the Malaysia market; (2) to identify the major attributes and intentions of ISO 9001 certification among Malaysian furniture manufacturers; (3) to identify the drivers of ISO certification among furniture manufacturers; (4) to characterize the different furniture markets requirements and to compare the performance of ISO certified and non-certified suppliers of furniture in these markets; (5) to evaluate the reasons for adoption and non-adoption of ISO 9001 certification among furniture manufacturers; and finally (6) to identify the main benefits and challenges faced by ISO and non-ISO certified manufacturers from the furniture buyers' perspective. The established relationship between ISO certification and product satisfaction, quality and the prevalence of repeat customers were used as the research framework for this study. Paired-sets of structured questionnaires were used to survey 100 foreign furniture buyers during the Malaysian International Furniture Fair (MIFF). For the Manufacturers' perspective, 10 ISO and 20 non-ISO furniture manufacturers were surveyed. The result showed that manufacturers ranked quality improvement as the most important attribute. For respondents of ISO-certified manufacturers, the improvement on delivery time, quality and management were their major drivers to be ISO-certified. Nevertheless, the influence of the ISO system on product marketability is limited to specific markets, especially in Japan, Korea and East Asia, which are generally ISO-sensitive markets. On the other hand, the majority of the international furniture buyers were aware of ISO certification, and have

requested their suppliers to be ISO-certified. ISO certification generally improves the overall performance of the furniture companies and large-scale companies have a greater tendency for ISO certification. Undoubtedly, ISO-certified suppliers provided higher satisfaction levels to customers, compared to non ISO-certified suppliers. For the buyers' perspective, foreign furniture buyers prefer to purchase from ISO-certified companies, due to the higher degree of confidence in their business and product quality. This study shows that ISO certification had significantly influenced the management of furniture enterprises. The study also showed that the intention for ISO certification was not driven by external factors, neither the requirement of the governmental law and regulations nor the customer pressure, as most furniture manufacturers operated on the OEM strategy. Despite the benefits gained from higher market share, the low adoption level of the ISO system in the furniture sector could be explained by its high certification cost and lack of perceived benefits of certification among the furniture manufacturers. Finally, the study revealed that ISO certification is a useful tool to enhance the management competency within the furniture manufacturing sector. It appears that a concerted effort must be drawn up to boost the awareness of the intangible benefits to be gained, if ISO certification is to be expanded throughout the furniture industry in the future.

Abstrak tesis yang dikemukakan kepada Senat Universiti Putra Malaysia
sebagai memenuhi keperluan untuk Ijazah Doktor Falsafah

**SISTEM PENGURUSAN KUALITI
DALAM INDUSTRI PERABOT PERKAYUAN MALAYSIA**

Oleh

CHONG YEN YOON

Disember 2015

Pengerusi: Prof. Jegatheswaran Ratnasingam, PhD
Fakulti: Perhutanan

Terdapat satu tanggapan umum bahawa kebanyakan syarikat perkilangan perabot antarabangsa terpaksa mendapatkan pensijilan ISO untuk meningkatkan kualiti pengurusan. Dalam kontek ini, sistem pengurusan kualiti dan piawai telah diperkenalkan di Malaysia sejak tahun 1987, dan sering dianggap sebagai alat pemasaran dalam pembuatan industry perabot berfokuskan eksport, ramai penyelidik melaporkan bahawa firma masih kurang pasti sama ada pensijilan ISO dapat memupuk kualiti dalam organisasi mereka. Walaupun terdapat lebih daripada 4,000 syarikat yang berasaskan kayu di Malaysia, dengan 125 buah yang merupakan pengilang-pengilang perabot dan pengeksport yang besar, namun, bilangan pensijilan ISO adalah agak kecil berbanding dengan jumlah keseluruhan syarikat-syarikat perabot dalam industry tersebut. Oleh itu, kajian ini dijalankan dengan beberapa objektif: (1) untuk menentukan tahap kesedaran pensijilan ISO 9001 di antara pembeli-pembeli perabot dan tahap pensijilan antara pengilang-pengilang di dalam pasaran Malaysia; (2) untuk mengenal pasti ciri-ciri utama dan sebab-sebab pensijilan ISO 9001 di kalangan pengilang-pengilang perabot Malaysia; (3) untuk mengenal pasti pemandu-pemandu pensijilan ISO antara pengilang-pengilang perabot; (4) untuk mencirikan kehendak pasaran perabot yang berbeza dan untuk membandingkan prestasi pembekal perabot bertaraf ISO dan bukan ISO di pasaran; (5) untuk menilai sebab-sebab penggunaan dan penerimaan pensijilan ISO 9001 di kalangan pengilang-pengilang perabot; serta (6) mengenalpasti faedah-faedah utama; dan cabaran-cabaran yang dihadapi oleh pengilang-pengilang ISO dan bukan ISO dari perspektif pembeli perabot. Hubungan antara pensijilan ISO dan kepuasan barangan, kualiti dan kekerapan pelanggan-pelanggan telah digunakan dalam kajian ini sebagai rangka kerja penyelidikan. Pasangan-set soalan soal-selidik berstruktur telah digunakan terhadap 100 pembeli-pembeli perabot antarabangsa, semasa di Pameran Perabot Antarabangsa Malaysia (MIFP). Pada pandangan pengeluar-pengeluar perabot, survei terhadap 10 buah pengilang perabot ISO dan 20 buah pilang perabot yang bukan ISO telah dijalankan. Keputusan kajian menunjukkan bahawa pengeluar perabot menyatakan bahawa peningkatan kualiti sebagai sifat yang paling penting. Bagi pengeluar bersijil ISO, mereka paling mengambil berat tentang penambahbaikan masa penghantaran,

peningkatan kualiti dan penambahbaikan pengurusan. Pada masa yang sama, pengaruh permintaan pensijilan ISO hanyalah terhad kepada pasaran tertentu, terutamanya di Jepun, Korea dan Asia Timur, yang merupakan pasaran peka ISO. Majoriti pembeli perabot antarabangsa sedar akan pensijilan ISO, dan telah meminta pembekal mereka mendapatkan sijil ISO. Pada umumnya, pensijilan ISO dapat meningkatkan prestasi keseluruhan syarikat perabot yang kebanyakannya berbentuk syarikat besar, yang mempunyai kecenderungan yang lebih besar ke arah pensijilan ISO. Sudah pasti, pembekal-pembekal bertaraf ISO mencapai tahap kepuasan pelanggan yang lebih tinggi, berbanding dengan pembekal-pembekal bukan ISO. Pada pandangan pembeli-pembelia antarabangsa pula, pembeli asing perabot lebih gemar membeli daripada syarikat bertaraf ISO, kerana keyakinan yang lebih tinggi terhadap perniagaan dan kualiti produk mereka. Kajian ini juga menunjukkan bahawa pengaruh pensijilan ISO terhadap pengurusan perusahaan perabot begitu ketara, dan sebab untuk pensijilan ISO tidak didorong oleh faktor-faktor luaran, seperti keperluan undang-undang kerajaan dan peraturan-peraturan mahupun permintaan pembeli, tetapi disebabkan oleh hakikat bahawa jenis industri beroperasi pada strategi OEM dan kini dikuasai oleh Industri-industri Kecil dan Sederhana. Meskipun banyak faedah-faedah boleh diperolehi, tahap amalan penggunaan sistem ISO yang rendah di kalangan sektor perabot berlaku disebabkan oleh kos pensijilan yang tinggi dan kekurangan penerimaan faedah-faedah pensijilan antara pengilang-pengilang perabot. Akhir sekali, kajian ini mendedahkan bahawa pensijilan ISO adalah alat yang berguna untuk meningkatkan kecekapan pengurusan dalam sektor pembuatan perabot. Ternyata, usaha bersepadu perlu disediakan untuk meningkatkan kesedaran tentang kepentingan faedah tidak ketara, sekiranya persijilan ISO diperluaskan ke seluruh industri perabot di masa hadapan.

ACKNOWLEDGEMENTS

First of all, I would like to express my sincerely appreciation and thanks to the Universiti Putra Malaysia and graduate research fellowship (GRF) for supporting me so much to complete of my study of PhD. degree.

Foremost, I would like to express my profound appreciation and gratitude to my advisor, Prof. Jegatheswaran Ratnasingam for his supervision, guidance, supporting, constructive suggestion and continuous support of my study, especially for his patience and enthusiasm during the supervision period where he always share his experience and carefully reviewed the draft copy of thesis. His guidance helped me a lot in my research and the writing style of the thesis.

Besides my advisor, I would like to thank the rest of my thesis supervisory committee: Associate Prof. Dr. Shukri Mohamed and Dr. Mohamad Roslan Bin Mohamad Kasim for their encouragement, insightful and wise comments. Dr. Mohamad Roslan was also very helpful in my statistics part and kind guidance in the data analysis and conclusion.

Last but not least, my deepest thanks go to my beloved parent, Mr. Chong Kit Yin and Mrs. Leong Yoon Tai and my young brother Jay Chong Yen Jye, for their continuous encouragement, positive inspiration and morally support. My parents have devoted their life to the children. Not forget also all my dedicated friends who are not mentioned one-by-one here but always besides me and offering for helps. I wish you all live with peaceful mind and wisdom.

This thesis was submitted to the Senate of Universiti Putra Malaysia and has been accepted as fulfilment of the requirement for the degree of Doctor of Philosophy. The members of the Supervisory Committee were as follows:

Jegatheswaran Ratnasingam, PhD

Professor
Faculty of Forestry
Universiti Putra Malaysia
(Chairman)

Shukri Bin Mohamed, PhD

Associate Professor
Faculty of Forestry
Universiti Putra Malaysia
(Member)

Mohamad Roslan Bin Mohamad Kasim, PhD

Lecturer
Faculty of Forestry
Universiti Putra Malaysia
(Member)

BUJANG KIM HUAT, PhD

Professor and Dean
School of Graduate Studies
Universiti Putra Malaysia

Date:

Declaration by Members of Supervisory Committee

This is to confirm that:

- the research conducted and the writing of this thesis was under our supervision;
- supervision responsibilities as stated in the Universiti Putra Malaysia (Graduate Studies) Rules 2003 (Revision 2012-2013) are adhered to.

Signature: _____

Name of Chairman
of Supervisory
Committee:

Professor Dr. Jegatheswaran Ratnasingam

Signature: _____

Name of Member of
Supervisory
Committee:

Associate Professor Dr. Shukri Bin Mohamed

Signature: _____

Name of Member of
Supervisory
Committee:

Dr. Mohamad Roslan Bin Mohamad Kasim

TABLE OF CONTENTS

	Page
ABSTRACT	i
ABSTRAK	iii
ACKNOWLEDGEMENTS	v
APPROVAL	vi
DECLARATION	viii
LIST OF TABLES	xiii
LIST OF FIGURES	xv
LIST OF ABBREVIATIONS	xvi
 CHAPTER	
 1 INTRODUCTION	 1
1.1 Research Background	1
1.2 Statement of Problem	2
1.3 Objectives of Study	3
1.4 Research Framework	3
 2 LITERATURE REVIEW	 6
2.1 Introduction	6
2.1.1 Definitions of Quality	7
2.1.2 Types of Quality	7
2.2 Development of Quality Management	8
2.2.1 International Organization for Standardization (ISO)	9
2.2.2 Requirement for ISO Certification	10
2.2.3 The Benefits of ISO Certification	10
2.3 ISO as a Quality System	12
2.3.1 ISO 9000 Quality Principles	12
2.3.2 Other Quality Standards and Management Systems	14
2.4 ISO Quality Management in Furniture Production	15
2.4.1 Fashioning Furniture and Design	16
2.4.2 Furniture Market Features	17
2.4.3 ISO Certificate as a Marketing Tool for Furniture	17
2.4.4 Perceived Value of Furniture	18
2.4.5 The Effects of ISO Quality Management on the Industrial Performance	18
 3 METHODOLOGY	 21
3.1 Research Approach	21
3.2 Pilot Study	21
3.3 Research Question	23
3.4 Research Questionnaire Design	24
3.4.1 Buyers' Questionnaire Design	25
3.4.2 Manufacturers' Questionnaire Design	25

3.5	Survey Site	26
3.6	Sample Size and Sampling Method	26
3.6.1	Buyers' Sample Size	26
3.6.2	Manufacturers' Sample Size	27
3.7	Data Analysis	28
3.7.1	Validity Test	28
3.7.2	T-Test	28
3.7.3	Kruskal-Wallis	29
3.7.4	Mann-Whitney	29
4	RESULTS AND DISCUSSION	30
4.1	Respondent Characteristics	30
4.1.1	Furniture Buyers	30
4.1.2	Furniture Manufacturers	31
4.2	The Status of ISO Adoption in the Malaysian Furniture Industry	31
4.2.1	Furniture Buyers' ISO Awareness in the Malaysian Furniture Industry	31
4.2.2	Effects of Manufacturers' Sizes on the Level of ISO Certification	33
4.3	Major Attributes and Intentions for ISO Certification among Furniture Manufacturers in Malaysia	34
4.3.1	ISO Standards and It's Impacts on Manufacturers	34
4.3.2	The Quality Attribute	37
4.3.3	The Delivery Attribute	38
4.3.4	The Management Attribute	39
4.3.5	The Marketing and Branding Attributes	40
4.4	Drivers of ISO Certification among Furniture Manufacturers in Malaysia	41
4.4.1	The Benefits of ISO Certification	41
4.4.2	ISO Certification due to Internal Benefits	42
4.4.3	ISO Certification due to External Benefits	43
4.4.4	Beyond the ISO Certification	44
4.5	Furniture Markets Requirements and a Comparison between ISO Certified and Non-Certified Furniture Manufacturers	44
4.5.1	Comparison of Buyers from Different Regions	45
4.5.2	Buyers Experiences with ISO-certified Furniture Manufacturers	47
4.5.3	Buyers Experiences with Non ISO-Certified Furniture Manufacturers	50
4.6	The Implications and Reasons for Non ISO Certification among Furniture Manufacturers	51
4.6.1	Repeat Customers	52
4.6.2	Market Demand for ISO Certification	53
4.6.3	Perspectives on ISO Certification	54

5	CONCLUSION AND RECOMMENDATIONS	58
5.1	Introduction	58
5.2	Conclusion	58
5.3	Limitations	59
5.4	Recommendations	60
	REFERENCES	61
	APPENDICES	78
	BIODATA OF STUDENT	92
	LIST OF PUBLICATIONS	93



LIST OF TABLES

Table	Page
2.1 Definition of quality	7
2.2 The timeline of quality standards development	8
2.3 The benefits and advantages of ISO certification	11
2.4 Area of improvement after ISO certification	19
2.5 Identified ISO problems faced by corporate level	20
3.1 Methods for market survey	21
3.2 The origin of construct	24
4.1 Descriptive analysis based on position	30
4.2 Descriptive analysis of business type	30
4.3 Descriptive analysis of region of origin	31
4.4 Number of workers comparison between ISO and non ISO	31
4.5 Percentage of ISO awareness and by region	32
4.6 Percentage of supplier with ISO certification	32
4.7 Number of workers compared between ISO and non ISO certified companies	33
4.8 The intention for ISO certification among furniture manufacturers	34
4.9 Extent of ISO certification helps to meet manufacturers' intentions	35
4.10 The comparison of internal and external ISO benefits	41
4.11 Furniture purchasing attributes of the different markets	44
4.12 The Chi-Square test for different furniture purchasing factors	45

4.13	Satisfaction level of different regional furniture buyers on ISO-suppliers	47
4.14	Level of satisfaction of the product quality from ISO-certified suppliers	48
4.15	Test statistics for ISO-certified suppliers' satisfaction	49
4.16	Non ISO-certified suppliers' satisfaction	50
4.17	Test statistics for different aspect on non ISO-certified suppliers	50
4.18	Mann-Whitney test	51
4.19	Comparison of characteristics of ISO and non-ISO certified suppliers	51
4.20	Repeat customers on ISO and non-ISO manufacturers	52
4.21	Repeated customer (percent) cross-tabulation	52
4.22	The most suggestion and complaints received from buyers	53
4.23	Degree of use for alternatives quality tools (for non-ISO manufacturers)	56

LIST OF FIGURES

Table		Page
1.1	Relationships between ISO Certification and the Satisfaction, Quality and Repeat Customers	4
1.2	Quality and Profitability	5
2.1	Exponential Growth of ISO 9000 Certification	10
2.2	Integrated QMS from ISO 9000	13
2.3	The Continual Improvement Cycle of QMS	14
2.4	Effects of Higher Product Quality	15
2.5	Requirements and Performance Comparison of Quality Product	18
3.1	Research Question Framework	23
3.2	Formula to Determine Sample Size	26
4.1	Reason for Rejecting ISO Certification	55
4.2	The Percentage of Alternative Quality Tools Being Used by Non-ISO Manufacturers	57

LIST OF ABBREVIATIONS

ANOVA	One-Way Analysis Of Variance
CAD	Computer Aided Design
CEN	European Committee For Standardization
EU	European Union
IEC	International Electrotechnical Commission
ISO	International Organization For Standardization
MIFF	Malaysian International Furniture Fair
MS	Malaysian Standards
MTIB	Malaysian Timber Industry Board
NATIP	National Timber Industry Policy (2009 – 2020)
PDCA	Plan-Do- Check-Act
QC	Quality Control
QMS	Quality Management System
SMEs	Small And Medium Enterprises
SPC	Statistical Process Control
TQM	Total Quality Management
UK	United Kingdom Or Britain
US	United States (U.S.) Of America

CHAPTER 1

INTRODUCTION

1.1 Research Background

The overall value of furniture is mainly based on its basic functional quality, but due to external pressure from global buyers or customers, most globalized furniture manufacturing companies are forced to seek ISO 9000 certification to improve their total quality, which involved a transition from the product function to the higher quality process-oriented method (Lakhe and Mohanty, 1994). In other words, these companies are forced to conform to quality standards determined by “a set of inherent characteristics” that fulfils the market requirement (ISO, 2000; Brown and Wiele, 1995).

It was reported that most Asian countries have no quality awareness due to unlimited access to resources (Kuo *et al.*, 2009). Malaysia has been known for its wood-based furniture, where 80 per cent of the wood material used is Rubberwood, a light-coloured medium hardwood, which is also known as ‘Malaysian Oak’ (Ariff, 2005). There is also intensive effort in Malaysia and Thailand to brand it as ‘Hevea wood’ (MTC, 2011). The Malaysian furniture industry must move up from its commodity image, towards a higher value added furniture producer status (Au, 2012).

The Malaysian furniture industry is dominated by SMEs (Ng and Thiruchelvam, 2011). According to the SMIDP 2001-2005 report, SMEs in Malaysia are facing many challenges, domestically as well as globally. Most of the strategy used in the SMEs is based on cost control (Ndubisi, 2012) and branding as a move to enter the global furniture markets (Owen and Malkovich, 1995). But only a few manufacturers have established brands (The Star, May 25, 2013). Thus, many of the identified challenges faced by Malaysian furniture manufacturers can be possibly improved by using ISO certification, to ensure quality output, overcome low productivity and improve competitiveness.

Generally, a furniture company with ISO certification does not produce furniture of guaranteed quality, but the furniture product is produced according to a quality process standard, or management system, covering the processes through which it has been realized. Not only the product assurance, but also the quality management system must add value to the company operations, to produce value added products (Wiele *et al.*, 2001).

The ISO 9001 applies to the processes that influence product or service quality, by satisfying the customer's demand and the manufacturing process capability (Waters, 2006). Schuurman (1997) stated that ISO certification is a good basic practice for initiating a quality system and Ackoff (1999) added that ISO certification ensures a holistic interaction of the whole system. On top of that, the extent to which certified-organizations can effectively improve their performance based on the ISO certification is an important issue (Boiral and Roy, 2007).

1.2 Statement of Problem

Although, there were more than 3,500 wood-based companies in Malaysia in 2012, with 125 of them (3.6 percent) being large furniture manufacturers and exporters, the number of ISO-certified was less than 20, which is relatively small compared to the total number of furniture manufacturers in Malaysia (Matrade, 2012; Ratnasingam *et al.*, 2010; SIRIM, 2012;).

In recent years, the Malaysian furniture industry has come under increasing competitive pressure from other cheaper furniture manufacturing countries, particularly in Vietnam and China. Therefore, for a developing nation such as Malaysia, it can increase its trade activities and business development by improving the quality of its manufactured or exported products or services. The Small and Medium-Sized Enterprises (SMEs) accounted for 90 percent of all furniture manufacturing establishments in the country. Therefore, the small furniture manufacturers are typically constrained by company size, lack of technical proficiency, managerial skills, and limited by financial and human resources (Lee and Oakes, 1995).

However, relatively limited researches related to quality management in the furniture manufacturing industry have been carried out previously. This could be due to the fact that the industry contributes little to Malaysia's GDP and only a few of them have adopted the quality management system, compared to other SMEs (Mustapha *et al.*, 2011). In fact, Ratnasingam (2010) stated the adoption of ISO certification in furniture industry as a "lukewarm", as its growth shown is at a low rate.

Thus, this study's main research question is to evaluate the effects of the ISO quality management system (QMS) on the management capabilities and export-led performance of furniture companies, and also the evaluation of quality expectation among foreign furniture buyers in the country, which is crucial for the Malaysian furniture manufacturing industry to penetrate the global market. The questionnaire used is aimed at answering the research objectives as shown in Appendix 1.

1.3 Objectives of Study

Against this background, the objectives of this study are:

- (1) To determine the level of awareness of ISO 9001 certification among furniture buyers and level of certification among manufacturers, in the Malaysia market;
- (2) To identify the major attributes and intentions of ISO 9001 certification among Malaysian furniture manufacturers;
- (3) To identify the drivers of ISO certification among furniture manufacturers;
- (4) To characterize the different furniture markets requirements and to compare the performance of ISO certified and non-certified suppliers of furniture in these markets;
- (5) To evaluate the reasons for adoption and non-adoption of ISO 9001 certification among furniture manufacturers and to identify the main benefits and challenges faced by ISO and non-ISO certified manufacturers from the furniture buyers' perspective.

1.4 Research Framework

In developing the research framework for this study, the established relationship between ISO certification and product satisfaction, quality and the prevalence of repeat customers were used (Figure 1.1). The adoption of ISO 9001 is generally perceived to lead towards better business (competitive) advantage.

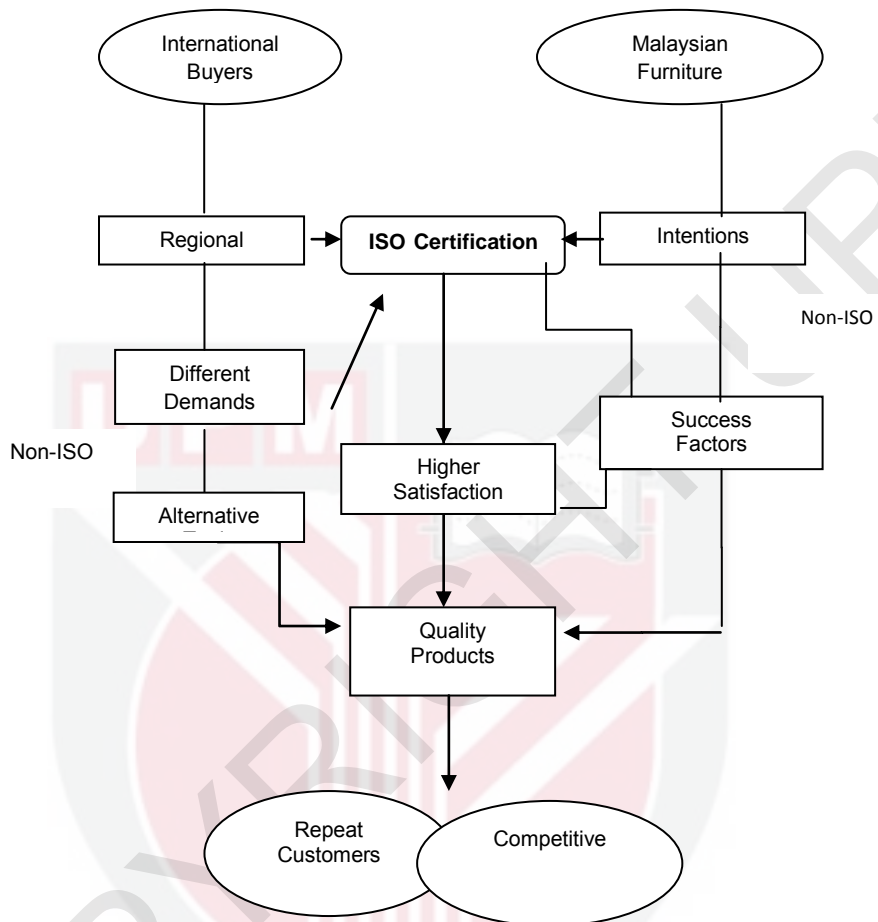


Figure 1.1 Relationships between ISO Certification and the Satisfaction, Quality and Repeat Customers

The premise of this study is based on the established fact that, as ISO is a form of Quality Management System (QMS), the impact of product quality on furniture manufacturers' competitive performance is important (PIMS, 1986). Product quality is so important to business profitability, and businesses that are early entrants into the markets by using premium-quality products or services, usually have much higher potential to dominate the market. A better quality management is usually leads to larger market share, but at the cost of reduced short-run profitability (Evans and Lindsay, 2011). Figure 1.2 shows the benefits of ISO certification, where both the quality of conformance, as required by the ISO and quality of design, as faced by the furniture manufacturers, are improved.

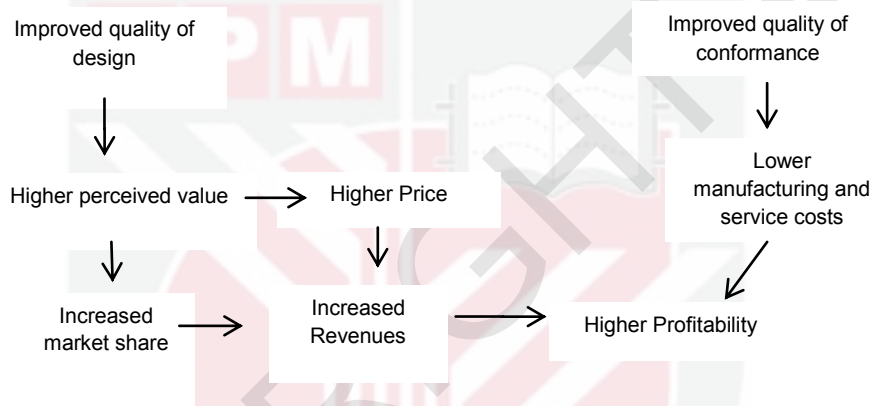


Figure 1.2 Quality and Profitability
(Source: PIMS, 1986; Evans and Lindsay, 2011)

REFERENCES

- Abdullah, S., Razak, A. A., Hanafi, M. H., and Jaafar, M. (2013). Implementation barriers of ISO 9000 within the Malaysian local government. *International Journal of Quality and Reliability Management*, 30(8): 853-876.
- Ackoff, R. (1999). *Recreating the corporation*. New York: Oxford University Press.
- Adams, J., Khan, H.T.A., Raeside, R., and White, D. (2007). *Research Methods for Graduate Business and Social Science Students*. New Delhi: Response Books.
- Agresti, A., and Finlay, B. (1997). *Statistical methods for the social sciences*. United States: Prentice Hall.
- Ahire, S. L., and Golhar, D. Y. (1996). Quality management in large versus small firms. *Journal of Small Business Management*, 34(2), 1-13.
- Al-Rawahi, A. M. S., and Bashir, H. A. (2011). On the implementation of ISO 9001:2000: a comparative investigation. *The TQM Journal*, 23(6), 673-687.
- Anon. (2005). Furniture design: trash to treasure. *Design Week*, 20(39), 13.
- Anuar, A., and Yusuff, R. M. (2011). Manufacturing best practices in Malaysian small and medium enterprises (SMEs). *Benchmarking: An International Journal*, 18(3): 324-341.
- Ariff, A. K. M. (2005). *Wood-based industry deserves more attention*. Retrieved on November 13 2012 from <http://www.mier.org.my/mierscan/archives/pdf/draffiff28-11-2005.pdf>
- Au, L. C. (2012). *New quality to mark Malaysian furniture - Malaysia pride*. Paper presented at the Sabah Furniture Industry Seminar – A Potential Hub for Outdoor Furniture (Sept 2012).
- Badiru, A. B. (1995). *Industry's Guide to ISO 9000*. New York: John Wiley & Sons.
- Bateman, T. S., and Snell, S. A. (2004). *Management – the new competitive landscape* (6th Ed.). New York: McGraw-Hill.
- Beattie, K. K., Sohal, A. S., (1999), Implementing ISO 9000: a study of its benefits among Australian organizations. *Journal of Total Quality Management*, 10(1): 95–106.

- Benner, M. J. and Tushman, M. (2002). Process management and technological innovation: a longitudinal study of the photography and paint industry. *Administrative Science Quarterly*, 47(4), 676-706.
- Bernardo, M., Karapetrovic, S. and Heras, I. (2010). Integration of standardized management systems: does the implementation order matter? *International Journal of Operations and Production Management*, 32(3): 291-307.
- Bevilacqua, M, Ciarapica, F. E., Giacchetta, G. and Marchetti, B. (2013). An empirical study of ISO 9000 on the supply chain of a company leader in the heating sector. *International Journal of Quality and Reliability Management*, 30(8): 897-916.
- Bhuiyan, N., and Alam, N. (2005). An investigation into issues related to the latest version of ISO 9000. *Total Quality Management and Business Excellence*, 16(2): 199-213.
- Blessner, P., Mazzuchi, T. A., Sarkani, S. (2013). ISO 9000 impact on product quality in a defense procurement environment. *The TQM Journal*, 25(3): 295-308.
- Boiral, O., and Roy, M.J. (2007). ISO 9000: integration rationales and organizational impacts. *International Journal of Operations & Production Management*, 27(2), 226-247.
- Boulter, L., and Bendell, T. (2002). How can ISO 9000:2000 help companies achieve excellence? what the company think. *Measuring Business Excellence*, 6(2), 37-41.
- Breiteberg, M. A. (2009). *The abc's of standards activities*. Gaithersburg: National Institute of Standards and Technology.
- Briscoe, J. A., Fawcett, S. E. and Todd, R. H. (2005). The implementation and impact of ISO 9000 among small manufacturing enterprises. *Journal of Small Business Management*, 43(3), 309-30.
- Brown, A., and Wiele, V. D. (1995). Industry experience with ISO 9000. *Asia Pacific Journal of Quality Management*, 4(2): 8-17.
- Burritt, C. (2012). Best Buy CEO Hubert Joly Considers Buying Electronics Brands. *Bloomberg*, 15 November, 2012.
- Buttle, F. (1997). ISO 9000: marketing motivations and benefits. *International Journal of Quality and Reliability Management*, 14(9): 936-47.
- Cagnazzo, L. (2009). Impacts of ISO 9000 on business performances: a literature review. *Recent Advances in E-Activities, Information Security and Privacy*, 2009: 35-41.

- Cagnazzo, L., Taticchi, P. and Fuiano, F. (2010). Benefits, barriers and pitfalls coming from the ISO 9000 implementation: the impact on business performances. *Wseas Transactions on Business and Economics*, 4(7): 311-321.
- Casadesus, M., and Jimenez, G. (2000). The benefits of the implementation of the ISO 9000 standard: empirical research in 288 Spanish companies. *The TQM Magazine*, 12 (6): 432-41.
- Casadesus, M., and Karapetrovic, S. (2005). The erosion of ISO 9000 benefits: a temporal study. *International Journal of Quality and Reliability Management*, 22(2): 120-136.
- Castleberry, S., and McIntyre, F.S. (1992). Consumers quality evaluation process. *The Journal of applied business research*, 8(3), 74–82.
- Cheng, Y. H. (2004). *ISO 9001 certification and performance in manufacturing industries*. Universiti Sains Malaysia: Unpublished Master Thesis.
- Chiarini, A. (2011). Integrating lean thinking into ISO 9001: a first guideline. *International Journal of Lean Six Sigma*, 2(2): 96-117.
- Clougherty, J. A. and Grajek, M. (2011). *International standards and international trade: empirical evidence from ISO 9000 diffusion*. NBER Working Paper. Retrieved on 4 Sep 2013 from <http://www.nber.org/papers/w18132.pdf>
- Corbett, C. J. and Luca, A. (2002). *Global Survey on ISO 9000 and ISO 14000: Summary of Findings*. The Anderson School at UCLA, Los Angeles internal report. Retrieved on 12 Feb 2002 from http://personal.anderson.ucla.edu/charles.corbett/papers/iso_survey_report_us.pdf.
- Corbett, C. J. (2006). Global diffusion of ISO 9000 certification through Supply chains. *MSOM Fall*, 2006:8(4): 330-350.
- Corbett, C., Montes-Sancho, M., and Kirsch, D. (2005). The financial impact of ISO 9000 certification: an empirical analysis. *Management Science*, 51(7): 1046–1059.
- Corder, G. W. and Foreman, D. I. (2009). *Nonparametric Statistics for Non-Statisticians*. Hoboken: John Wiley and Sons.
- Costa, M. and Lorente, M. (2004). ISO 9000 as a tool for TQM: a Spanish case study. *The Quality Management Journal*, 11(4): 20-30.
- Crewe, L., and Davenport, E. (1992). The puppet show: changing buyer–supplier relationships within clothing retailing. *Transactions of the Institute of British Geographers*, 17, 183–97.

- Cristóbal S. R., and Angel R. M. L. (2011). Effect of IT and quality management on performance. *Industrial Management and Data Systems*, 111(6), 830-848.
- Deborah, L. and Suzanne, R. (2006). Situating design in the Canadian household furniture industry. *Canadian Geographer, Autumn*, 50(3), pp.319.
- Dias, A. (2012). *Diffusion and efficiency of the ISO 9000 standards within the European Union: a qualitative and quantitative analysis in Portuguese organizations*. (Published PhD Thesis), Universidad del Pais Vasco, Spain.
- Dick, G. P. M. (2009). Exploring performance attribution: the case of quality management standards adoption and business performance. *International Journal of Productivity and Performance Management*, 58(4): 311-328.
- DiMaggio, P. J. and Powell, W. W. (1991). *The iron cage revisited: Institutional isomorphism and collective rationality in organizational fields*. Chicago, IL: University of Chicago Press.
- Ellen, Y. L. D. (1997). *Computability of design diagrams: an empirical study of diagram conventions in design*. Paper presented in proceedings of CAAD (Computer Aided Architectural Design), 1997 Conference, Munich, Germany August 4-6, pp.171-176.
- Elsmar. (2010). *Implementing an ISO 9001 quality management system*. Retrieved at <http://elsmar.com/> on 25th October 2011.
- Emam, K. E., and Madhavji, N. H. (1996). Does organizational maturity improve quality? *IEEE software*, 13(5): 109-110.
- Erel, E., Ghosh, J. B. (1997). ISO 9000 implementation in Turkish industry. *International Journal of Operations & Production Management*, 17: 12.
- Evans J. R., and Lindsay, W. L. (2011). *The Management and Control of Quality*. Canada: Cengage Learning.
- Falk, B., Quattelbaum, B., and Schmitt, R. (2010). *Product Quality from the Customers' Perspective – Systematic Elicitation and Deployment of Perceived Quality Information*. In: DET2009 Proceedings, AISC 66, 211–222.
- FAO. (2005). *International Wooden Furniture Markets - A review*. Geneva: ITTO and International Trade Centre (ITC) UNCTAD/WTO. xxxii, pp.233.
- Fisher, C. (2010). *Researching and writing a dissertation - an essential guide for business students (3rd Ed)*. England: Prentice Hall.
- Foster, S. (2004). *Managing quality: An integrative approach (2nd Ed.)*. Upper Saddle River, New Jersey: Prentice Hall.

- Fotopoulos, C. V., Psomas, E. L., and Vouzas, F. K. (2010). ISO 9001:2000 implementation in the Greek food sector. *The TQM Journal*, 22(2): 129-42.
- Franceschini, F., Galetto, M., and Gianni, G. (2004). A new forecasting model for the diffusion of ISO 9000 standard certifications in European countries. *International Journal of Quality & Reliability Management*. 21(1): 32-50.
- Frost, R. (2004). International Organization for Standardization (ISO) Profile 2004. *Quality Assurance Journal*, 8: 198–206.
- Fuller, G., and Vertinsky, I. (2006). Market response to ISO 9000 certification of software engineering processes, *International Journal of IT Standards and Standardization Research*, 4(2), 43-54.
- Gloag, J. (2011). *Time, taste and furniture*. Spellman Press.
- Goodman, A. J., and A. Colin. (1992). *Measuring customer service to enhance the bottom line*. Marne-la-Vallee: Tarp Europe.
- Goodman, A. J., and Newman, S. (2003). Understanding customer behavior and complaints. *Quality Progress*, Jan 2003, 51-55.
- Gotzamani, K. D. (2007). The contribution to excellence of ISO 9001: the case of certified organizations in Cyprus. *The TQM Magazine*, 19(5): 388-402.
- Guler, I., Guillén, M. F., and MacPherson, J. M. (2002). Global competition, institutions, and the diffusion of organizational practices: the international spread of ISO 9000 quality certificates. *Administrative Science Quarterly*, 47(2): 207–232.
- Gunasekarana, A., Williams, H. J. and McGaughey, R. E. (2005). Performance measurement and costing system in new enterprise. *Technovation*, 25: 523–533.
- Gunnlaugsdottir, J. (2012). Information and records management -A precondition for a well functioning quality management system. *Records Management Journal*, 22(3): 170-185.
- Hamza, R. M. A. (2012). Optimized stud arc welding process control factors by Taguchi experimental design technique. In Kovacevic, R. (2012). *CC BY 3.0 license*.
- Hamzah, A., and Ho, S. (1994). TQM training for small and medium industries in Malaysia. *Training for Quality*, 2(2): 27-35.
- Hamze, R. M. A., and Alenazi, M. H. O. (2013). The Impact of ISO 9001 Certification Audit on Oil and Gas Organizations' Performance in Qatar. *Engineering Management Research*, 2(1).
- Harrington, H. J., and Mathers, D. D. (1997). *ISO 9000 and beyond: from compliance to performance improvement*. New York: McGraw-Hill.

- Hashim, M. K. (2006). Strategic options for SMEs in global business environment: a Malaysian perspective. In Hashim, M. K.. *Small and Medium-Sized Enterprises in Malaysia: Challenges in the new economy* (pp.19-35). Sintok: Universiti Utara Malaysia Press.
- Hazman, S. A., and Jasmine, A. (2009). The fit between organizational structure, management orientation, knowledge orientation, and the values of ISO 9000 standard - A conceptual analysis. *International Journal of Quality and Reliability Management*, 26(8): 744-760.
- Hsu, H. W. (2004). *The effect on product formation by using computer-aided design*. Unpublished Master dissertation, Department and Graduate School of Industrial Design, Tatung University, Taipei.
- Huang, G. Q., and Mak, K.L. (1998). Re-engineering the product development process with "design for x". *Engineering Manufacture*, 212(4), 259-268.
- Idris, M. A., Aziz, N. F. and Zailee, S. (2012). The adoption of management systems standards & best practices in Malaysia (current and future trend). *Nang Yan Business Journal*, 1.1(2-05): 105.
- Idris, M. A., McEwan, W and Belavendram, N. (1996). The adoption of ISO 9000 and total quality management in Malaysia. *The TQM Magazine*, 8(5): 65-68.
- Idris, M. A. (2000). *The adoption of ISO 9000 in Malaysia*. Kuala Lumpur: Malaysia Engineering Convention 2000.
- Iñaki, H. S., and Boiral, O. (2013). ISO 9001 and ISO 14001: towards a research agenda on management system standards. *International Journal of Management Reviews*, 15(1): 47-65.
- Industry Canada. (2001). Sector competitiveness framework series. Household furniture (<http://strategis.ic.gc.ca/SSG/rf03002e.html>) Accessed 1 June 2001.
- Ismail, A., Abdullah, M.M. and Francis, S.K. (2009). Exploring the relationships among service quality features, perceived value and customer satisfaction. *Journal of Industrial Engineering and Management*, 2(1), 230-250.
- ISO 9004:2009. (2009). *Managing for the sustained success of an organization – A quality management approach*. Geneva: ISO.
- ISO. (1994). *ISO 9000-1 Quality management and quality assurance standards, Part 1: Guidelines for selection and use*. Geneva: ISO.
- ISO. (1999). *ISO 9000 international standards for quality management*. (4th Ed.). Geneva: ISO.
- ISO. (2000). *ISO 9001:2000 quality management systems - requirements*. Geneva: ISO.

- ISO. (2003). *The ISO survey of ISO 9000 and ISO 14000 certificates: tenth cycle*. Geneva: ISO.
- ISO. (2004). The ISO survey – 2004. Retrieved on 4 Sep 2013 from www.iso.org/iso/en/prods-services/otherpubs/pdf/survey2004.pdf
- ISO. (2006). ISO's membership rises to 150 countries. International Organization for Standardisation, available at: www.iso.org/iso/en/commcentre/pressreleases/2006/Ref1021.html.
- ISO. (2007). *The ISO survey – 2007*. Geneva: ISO Central Secretariat.
- ISO. (2008). *The ISO survey 2008*. Geneva: ISO Central Secretariat.
- ISO. (2008b). *ISO 9001 - quality management systems — requirements*. Geneva: ISO copyright office.
- ISO. (2011). *Discover ISO - What standards do*. Geneva: ISO Central Secretariat.
- ISO. (2013). *Executive summary of the ISO survey of management system standard certifications – 2013*. Geneva: ISO Central Secretariat.
- ISO.(2000-2008). *ISO 9000 quality standards*. Geneva: ISO.
- ITC/ITTO. (2005). *International wooden furniture markets: A review*. Geneva: International Trade Centre (ITC) and International Tropical Timber Organization (ITTO).
- Iwaro, J., and Mwasha, A. (2012). *The effects of ISO certification on organization workmanship performance*. ANSI-ASQ National Accreditation Board.
- Jeng, Y. C. (1998). Performance evaluation of ISO 9000 registered companies in Taiwan. *The TQM Magazine*, 10(2), 132–138.
- John, S. (2005). ISO 9000 in service: the good, the bad and the ugly. *Quality Progress*, 38(9), 42-48.
- Juran, J. M. (1979). *Quality control handbook*. (3rd Ed.). New York: McGraw-Hill.
- Juran, J. M. (1992). *Juran on quality by design*. New York: Free Press. pg.16.
- Karapetrovic, S., Casadesu, M. and Heras, I. (2010). What happened to the ISO 9000 lustre? An eight-year study. *Total Quality Management & Business Excellence*, 21(3): 245-67.

- Karlton J., Axelsson J. and Eklund J. (1998). Working conditions and effects of ISO 9000 in six furniture-making companies: implementation and processes. *Applied Ergonomics*, 19(4): 225-232.
- Kemp, S. (2006). *Quality management demystified*. USA: McGraw-Hill.
- Kirikali, L. (2004). Productivity, the Malmquist index and the empirical study of banks, in Estonia. McGuire, S. J., and Dilts, D. M. 2008. The financial impact of standard stringency: An event study of successive generations of the ISO 9000 standard. *International Journal of Production Economics*, 113, 3-22.
- Kirk, J., and Miller, M. L. (1986). *Reliability and validity in qualitative research*. Beverly Hills: Sage Publications.
- Kong, S. M. (2010). *Causal effects of registration efforts on business performance of ISO 9001-certified companies in the Malaysian construction industry using SEM*. Unpublished PhD. Thesis: Centre for Graduate Studies, Open University Malaysia. (http://library.oum.edu.my/repository/505/1/causal_effects_sia.pdf)
- Kotler, P. (1998). *Marketing management*. Ljubljana: Slovenskknjiga.
- Kotler, P. (2003), *Marketing management*. Englewood Cliffs, NJ: Prentice-Hall.
- Kranzler, J. H., and Moursund, J. (2007). *Statistics for the terrified*. United States: Prentice Hall.
- Kunananatt, J. T. (2007). Impact of ISO 9000 on organizational climate: strategic change management experience of an Indian organization. *International Journal of Manpower*, 28(2): 175-192.
- Kuo, T., Chang, T. J., Hung, K. C. and Lin, M. Y. (2009). Employees' perspective on the effectiveness of ISO 9000 certification: a total quality management framework. *Total Quality Management & Business Excellence*, 20(12), 1321-1335.
- Lakhe, R. R., and Mohanty, R. P. (1994). Total quality management: concepts, evolution and acceptability in developing economies. *International Journal of Quality & Reliability Management*, 11(9), 9-33.
- Lee, A. S. (2010). A study of the application of the koch curve and fuzzy theory on the computer aided design of furniture. *The International Journal of Organizational Innovation*, 438-465.
- Lee, G. L., and Oakes, L. (1995). The "pros" and "cons" of total quality management for small firms in manufacturing: some experiences down the supply chain. *Total Quality management*, 6(4): 413-426.
- Leedy, P. D., and Ormrod, J. E. (2001). *Practical research planning and design*. Ohio: Prentice Hall Inc.

- Leem, C. S., and Yoon, C. (2004). A maturity model and an evaluation system of software customer satisfaction: The case of software companies in Korea. *Industrial Management & Data System*, 104(4), 347–54.
- Lesley, M. F., Malcolm, M. F., and Bones, E. (1993). *Achieving quality standards - a step-by-step guide to BS 5750/ISO 9000*. London: Pitman Publishing.
- Leslie, D., and Reimer, S. (2003). Fashioning furniture: restructuring the furniture commodity chain. *Area*, 35(4), 427-437.
- Levine D. I., and Toffel M. W. (2010). *Quality management and job quality: how the ISO 9001 standard for quality management systems affects employees and employers*. Working Paper: 09-018, Harvard Business School.
- Levine, D. I. (1992). Can wage increases pay for themselves? Tests with a productive function. *Economic Journal*, 102, 1102-1115.
- Lewis, W. G., Pun, K. F., and Lalla, T. R. M. (2006). Exploring soft versus hard factors for TQM implementation in small and medium-sized enterprises. *International Journal of Productivity and Performance Management*, 55(7), 539-54.
- Lin, C., Madu, C. N., Kuei, C. H., and Lu, M. H. (2004). The relative efficiency of quality management practices. *International Journal of Quality and Reliability Management*, 21(5): 564-577.
- Lozano, A. R. P. (1997). ISO 9000 and the total quality management models. *Library Management*, 18(3), 148-150.
- Lyn, T. (1992). ISO 9000 in Europe: the competitive edge is dulled. *Chemical Week*, 151: 19.
- Magd, H. A. E. (2006). An investigation of ISO 9000 adoption in Saudi Arabia. *Managerial Auditing Journal*, 21(2): 132-147.
- Magd, H., and Curry, A. (2003). An empirical analysis of management attitudes towards ISO 9001:2000 in Egypt. *The TQM Magazine*, 15(6): 381-90.
- Magd, H., and Curry, A. (2003^b). ISO 9000 and TQM: are they complementary or contradictory to each other? *TQM Magazine*, 15(4): 244-56.
- Magd, H., Kadasah, N., and Curry, A. (2003). ISO 9000 implementation: a study of manufacturing companies in Saudi Arabia. *Managerial Auditing Journal*, 18(4): 313-22.

- Mahmood, A. (2000). Export specialization and competitiveness of the Malaysian manufacturing: Trends, challenges and prospects. Proceedings from *Fifth Annual Conference on International Trade Education and Research Managing Globalisation for Prosperity*, Melbourne 26 – 27 October 2000. Victorian Department of State and Regional Development.
- Martínez-Costa, M., and Martínez-Lorente, A.R. (2003). Effects of ISO 9000 certification on firms' performance: a vision from the market. *Total Quality Management & Business Excellence*, 14(10), 1179 -1191.
- McBean, E. A. and Rovers, F. A. (1998). *Statistical procedures for analysis of environmental data and risk assessment*. NJ: Prentice-Hall, Englewood Cliffs.
- McEwan, W., Idris, M. A., and Belavendram, N. (1996). The adoption of ISO 9000 and TQM in Malaysia. *The TQM Magazine*, 8: 65-68.
- McGuire, S. J., and Dilts, D. M. (2008). The financial impact of standard stringency: An event study of successive generations of the ISO 9000 standard. *International Journal of Production Economics*, 113: 3-22.
- Mendham, S., Chittenden, F., and Potziouris P. (1994). *Small businesses and BS 5750*. Manchester: Manchester Business School.
- MIFF. (2010). *Malaysian International Furniture Fair (MIFF) – Report 2010*. Kuala Lumpur: MIFF.
- MIFF. (2012). *Malaysian International Furniture Fair (MIFF) 2012 – Making Trade Matter*. Kuala Lumpur: MIFF.
- Miller, C. (1993). US firms lag in meeting quality standards. *Marketing News*. pp. 1-6.
- Moe, N. B., and Dingsoyr, T. (2005). *The impact of process workshop involvement on the use of an electrical process guide: a case study*. Paper presented at IEEE: EuroMicro, Porto, Portugal.
- Mokhtar, M. Z. (2012). Comparative Study on Performance Measures and Attributes between ISO and Non-ISO Certification Companies. *International Journal of Business and Management*, 7(3): 185-193.
- Morikawa. M., and Morrison, J. (2004). *Who develops ISO standards? A survey of participation in ISO's international standards development processes*. California: Pacific Institute for Studies in Development, Environment, and Security.
- MTC. (2011). *MTC Annual Report 2011*. Kuala Lumpur: Malaysian Timber Council (MTC).
- MTIB. (2010). *Mas Kayu*, October 2010: 10.

- Munro-Faure, L., and Malcolm, M. (1992). *Implementing Total Quality Management*. London: Pitman Publishing.
- Mustapha, M. R., Muda, S., and Hasan, F. A. (2011). A Survey of Total Quality Management in the Malaysian SMEs. *International Journal of Humanities and Social Science*, 1(2): 118-122.
- Nair, A., and Prajogo, D. (2009). Internalisation of ISO 9000 standards: the antecedent role of functionalist and institutionalist drivers and performance implications. *International Journal of Production Research*, 47: 4545–4568.
- Naroola, G., MacConnell, R., and Connell, M. (1996). *How to achieve ISO 9000 registration economically and efficiently*. New York: Taylor & Francis Inc.
- NATIP. (2009-2020). *National timber industry policy, 2009-2020*. Putrajaya: Kuala Lumpur: Ministry of Plantation Industries and Commodities, Malaysia.
- Ndubisi, M. O. (2012). Mindfulness, quality and reliability in small and large firms. *International Journal of Quality & Reliability Management*, 29(6), 600-606.
- Ng, B. K., and Thiruchelvam, K. (2011). Technological innovations in Malaysia's wooden furniture industry: Knowledge and linkages. *African Journal of Agricultural Research*, 6(16), 3654-3659.
- Nikolovska, L., and Ackermann, E. (2009). *Exploratory design, augmented furniture? On the importance of objects' presence*, In Dillenbourg, P, Huang, J and Cherubini, M. (2009). *Interactive artifacts and furniture supporting collaborative work and learning*. US: Springer US.
- Okwiri, O. A., and Mbeche, I. M. (2014). ISO 9001 Certification Status and Organizational Quality Maturity. *International Journal of Business and Social Science*, 5(10), 201-211.
- Othman, R. (2006). *Factors influencing the implementation and maintenance of ISO9001:2000 standard in selected organizations in Malaysia*. Unpublished Master of Science thesis. University Putra Malaysia, Kuala Lumpur.
- Owen, B., and Malkovich, P. (1995). *Understanding the Value of ISO 9000*, Knoxville: SPC Press.
- Pandora, D. (1989): *Quality Management as a Competitiveness Tool*. Netherlands: Technical University Delft.
- Pardoe, I. (2004). *Applied regression modeling: A business approach*. Chichester: Wiley.

- Pareek, U. (1981). *Motivational analysis of organizations – climate (MAO-C)*. Ahmedabad: Indian Institute of Management Press.
- Park, D. J., Kim, H. G., Kang, B. H., and Jung, H. S. (2007). Business values of ISO 9000:2000 to Korean shipbuilding machinery manufacturing enterprises. *International Journal of Quality and Reliability Management*, 24(1), 32-48.
- Paul, K. (1992). Europe-Based Firms Exporting ISO 9000. *Chemical Week*, 151: 19.
- PIMS. (1986). *The PIMS Letter on Business Strategy. No.4*. Cambridge, MA: Strategic Planning Institute.
- Pisek. (1987). Defining quality at the marketing/development interface. *Quality Progress*, 20(6).
- Pitterman, B. (2000). Telcordia technologies: the journey to high maturity. *IEEE Software*, 17: 89-96.
- Prakash, S., and Peter, M. N. (2006). ISO 9000 in the public sector: a successful case from Australia. *The TQM Magazine*, 18(2): 131.
- Prates, G. A., and Caraschi, J. C. (2014). Organizational impacts due to ISO 9001 certified implementation on Brazilians cardboard companies. *International Journal of Academic Research in Business and Social Sciences*, 4(5): 500-513.
- Quazi, H. A., and Padibjo, S. R. (1998). A journey towards total quality management through ISO 9000 certification: a study on small and medium sized enterprises in Singapore. *International Journal of Quality and Reliability Management*, 15(5): 364-71.
- Quazi, H., Hong, C., and Meng, C. (2002). Impact of ISO 9000 certification on quality management practices: A comparative study. *Total Quality Management*, 13(1), 53-67.
- Quesada, H. and Gazo, R. (2007). Methodology for determining key internal business processes based on critical success factors: A case study in furniture industry. *Business Process Management Journal*, 13(1): 5 - 20.
- Rao, A. R., Qu, L., and Ruekert, R.W. (1999). Signaling unobservable product quality through a brand. *Journal of Marketing Res.* 36, 258-268.
- Rao, S., Ragu-Nathan, T., and Solis, L. (1997). Does ISO 9000 have an effect on quality management practices? An international empirical study. *Total Quality Management*, 8(6): 333-346.
- Ratnasingam J., Ioras, F., and W. Lu. (2011). Sustainability of the Rubberwood Sector in Malaysia. *Not Bot Horti Agrobo*, 39(2): 305-311.

- Ratnasingam J., Macpherson T.H., Ioras F, and Abrudan I. V. (2008). Chain of Custody Certification Among Malaysian Wooden Furniture Manufacturers: Status and Challenges. *International Forestry Review*, 10(1), 23-28.
- Ratnasingam, J. (2001). Asian furniture fairs-what's on sale? *Furniture Design Manufacturing Asia*, 15(2): 38-41.
- Ratnasingam, J. (2002). *The Malaysian furniture industry – a pocket guide*. Kuala Lumpur: Irama Prasada Publications.
- Ratnasingam, J. (2005). Status of technology in the Malaysian wood industry. *Asian Timber*, July/August, 22-25.
- Ratnasingam, J. (2010). What you need to know about the Malaysian furniture sector? *Asian Timber*, 25, 9-14.
- Ratnasingam, J., and Ioras, F. (2003). The sustainability of the Asian wooden furniture industry. *Holz als Roh-und Werkstoff*, 61, 233-237.
- Ratnasingam, J., and Wagner, K. (2009). *The success of forest industry clusters: The Malaysian experience*. Paper presented at the XIII World Forestry Congress, Buenos Aires, Argentina. October 2009.
- Ratnasingam, J., Ioras, F. and Macpherson, T. H. (2007). Influence of wood species on the value of wooden furniture: the case of Rubberwood. *Holz als Roh-und Werkstoff*, 65(6), 487-489.
- Ratnasingam, J., Yoon, C. Y., and Ioras, F. (2013^a). The effects of ISO 9001 quality management system on innovation and management capacities in the Malaysian furniture sector. *Bulletin of the Transilvania University of Brasov*. 6(55): 63-70.
- Ratnasingam, J., Yoon, C. Y., Mohamed, S. and Kassim, R. M. (2013^b). Quality expectations in the Malaysian wooden furniture industry: the foreign buyers perspective. *Journal of Applied Sciences*.
- Rayner, P., and Porter, L.J. (1991). BS 5750/ISO 9000: the experience of small and medium-sized firms. *International Journal of Quality and Reliability Management*, 8(6): 16-28.
- Renuka, S. D., and Venkateshwara, B. A. (2006). A comparative study of human resource management practices and advanced technology adoption of SMEs with and without ISO certification. *Singapore Management Review*, 28(1): 41-61.
- Roscoe, J. T. (1975). *Fundamental research statistics for the behavioral sciences*. Carpenter Library Stacks.
- Rose, Kenneth H. (2005). *Project quality management: why, what and how*. Fort Lauderdale, Florida: J. Ross Publishing. pg.41.

- Roslina A. W., and James C. (2009). Critical success factors and problems in ISO 9000. *International Journal of Quality and Reliability Management*, 26(9): 881-893.
- Ross, J. E. (1994). *Total Quality Management: Text and Cases Readings* (2nd Ed.). London: Kogan Page.
- Rusjan, B., and Alic, M. (2010). Capitalising on ISO 9001 benefits for strategic results. *International Journal of Quality and Reliability Management*, 27(7): 756-778.
- Rust, R. T., Zahorik, A.J., and Keiningham, T.L. (1994). *Return on quality, measuring the financial impact of your company's quest for quality*. Chicago: Probus Publishing Company.
- Saizarbitoria, I. H., and Landin, G. A. (2006). The impact of quality management in European companies' performance: the case of the Spanish companies. *European Business Review*, 18(2): 114-131.
- Salleh, Y., and Goh, W. K. (2001). The implementation of an ISO quality system. *International Journal of Quality & Reliability Management*, 18(1), 941-966.
- Saunders, M., Lewis, P., and Thornhill, A. (2009). *Research methods for business students* (5th Ed). Harlow: Financial Times Prentice Hall.
- Schmitt, R., and Steinmeier, B. (2008). Product value management. *MQ Management und Qualität*, 4(11), 18-19.
- Schmitt, R., Quattelbaum, B., and Lieb, H. (2008). *Perceived Quality as a key factor for strategic change in product development*. Paper presented at the Conference Proceedings IEMC-Europe 2008, Piscataway.
- Schuurman, H. (1997). *Quality management and competitiveness the diffusion of the ISO 9000 standards in Latin America and recommendations for government strategies*. Economic Commission for Latin America and the Caribbean Number 41. Chile: Division of Production, Productivity and Management, United Nations.
- Schuurman, H. (1998). Quality management promotion to improve competitiveness. *CEPAL Review*, 65: 169-188.
- Sekaran, U. (2000). *Research methods for business*. (3rd Ed). USA: Wiley & Sons Inc.
- Shaari, J. A. N. (2010). Barriers to implement TQM in Japanese way: a study on companies in Malaysia. *International Reviews of Business Research Papers*, 6(5), 400-410.
- SIRIM. (2012). *Directory of Certified Organizations/Products*. Malaysia: SIRIM (<http://www.malaysiancertified.com.my/>)

- Smite, D., and Moe, N. B. (2006). An ISO 9001:2000 certificate and quality awards from outside – What's inside? A case study. *Lecture Notes in Computer Science*, 4034: 208-221
- Staines, A. (2000). Benefits of an ISO 9001 certification ± the case of a Swiss regional hospital. *International Journal of Health Care Quality Assurance*, 13(1): 27-33
- Standards Malaysia. (2010). *Annual Report 2010*. Malaysia: Department of Standards Malaysia (STANDARDS MALAYSIA).
- Standards Malaysia. (2011). *Annual Report 2011 (15 years)*. Malaysia: Department of Standards Malaysia (STANDARDS MALAYSIA).
- Steiger, H. J., and Uhl, E. (2001). *Risk control and quality management in Neurosurgery*. Springer-Verlag Wien.
- Stracke, C. M. (2006). Process-oriented quality management. In Ehlers, U. D. and Pawlowski, J. M. (Eds). *Handbook on quality and standardisation in E-Learning* (pp.79-96). Berlin: Springer.
- Suhaiza Hanim, M.Z. (2005). *The implementation of quality improvement practices in electrical and electronics firms in Malaysia*. Pulau Pinang: Penerbit Universiti Sains Malaysia (USM).
- Taninecz, G. (1997). Best practices and performances. *Industry Week*, 246: 28-43.
- Tari, J. J., Azorin, J. F. M., and Heras, I. (2012). Benefits of the ISO 9001 and ISO 14001 standards. *Journal of Industrial Engineering and Management*, 5(2), 297-322.
- Tasmin, R., Ng, K. S., Hamid, A, Aziati, N., Malek, A. and Aida, N. (2013). *Sustainable competitive advantage in furniture industry: comparative studies in Finland, China and Malaysia*. Paper presented in the 2nd International Conference on Global Optimization and Its Applications 2013 (ICoGOIA2013), Melaka, Malaysia. August 2013.
- Taylor, W. (1995). Organizational differences in ISO 9000 implementation practices. *International Journal of Quality and Reliability Management*, 12(7): 10-27.
- Tennant, M. (1993). *Accreditation of certification: what's in it for me?* Paper presented in the NACCB Workshop. Nov 1993.
- Terlaak, A., and King, A. A. (2006). The effect of certification with the ISO 9000 quality management standard: A signaling approach. *Journal of Economic Behavior & Organization*, 60: 579-602.

- Terziovski, M., Power, D., and Sohal, A. (2003). The longitudinal effects of the ISO 9000 certification process on business performance. *European Journal of Operational Research*, 146(3): 580-95.
- Terziovski, M., Samson, D., and Dow, D. (1995). The impact of ISO 9000 certification on customer satisfaction. *Asia-Pacific Journal of Quality Management*, 4(2), 66–80.
- Tissari, J. (2007). *Fulfilling market entry requirements in quality and safety*. Retrieved on 11 April 2011 from <http://www.fao.org/forestry/23573-0f8e5e347fe07a94f31637fdd7a0350f9.pdf>.
- Tsiotras, G., and 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.
- Verganti, R. (2009). *Design-Driven Innovation: Changing the Rules of Competition by Radically Innovating What Things Mean*. Boston, MA: Harvard Business Press.
- Vloeberghs, D., and Bellens, J. (1996). ISO 9000 in Belgium: experience of Belgian quality managers and hrm. *European Management Journal*, 14(2), 207-211.
- Vokurka, R. J. (2003). Using the Baldrige criteria for personal quality improvement. *Industrial Management & Data Systems*, 101(7): 363-70.
- Waters, D. (2006). *Operations strategy*. London: Thomson Learning. (pp.304-329)
- Weston, F. C. J. (1995). What do managers really think of the ISO 9000 registration process? *Quality Press*, 28(10): 67-73.
- Wiele, V. D., Brown, A., and Dale B. G. (2001). The ISO 9000 series as a tool for organizational change for organizational change. *Business Process Management Journal*, 7(4): 323-331.
- Wiele, V. D., Williams, A. R. T., and Dale, B. G. (2000). Total quality management: is it a fad, fashion, or fit? *Quality Management Journal*, 7(2): 65-79.
- Wildschut, E. (1993). *Time based competition; Strategic advantage for shorter enterprise processes*. Deventer, Netherlands: Kluwer.
- World Bank, (1997). *Malaysia: Enterprise Training, Technology and Productivity*. Washington: World Bank Publication.
- Wu, S. I., and Chen, J. H. (2012). The performance evaluation and comparison based on enterprises passed or not passed with ISO accreditation- An appliance of BSC and ABC methods. *International Journal of Quality and Reliability Management*, 29(3): 295-319.

- Yahya, S., and Goh, W. K. (2001). The implementation of an ISO 9000 quality system. *International Journal of Quality and Reliability Management*, 18(8/9): 941-66.
- Yaya, L. H., Frederick, M., and Marti, C. (2011). Customer's and perception of ISO 9001 in online banking. *Industrial Management and Data Systems*, 111(8): 1194 – 1213.
- Yong, J. and Wilkinson, A. (2002). The long and winding road: The evolution of quality management. *Total Quality Management*, 13(1), 2002.
- Yusof, S. M. (2003). Total quality management (TQM) advancement and critical success factors for implementation in manufacturing small and medium sized enterprise (SMEs). *Final Report for RMC Short Term Research Grant Vot. 71663*. Feb, 2003.
- Yusof, S. M., and Aspinwall, E. M. (2000) TQM implementation issues: review and case study, *International Journal of Operation & Production Management*, 20, 144 -357.
- Zakuan, N. M. Z. (2009). *Structural analysis of total quality management, ISO/TS16949 and organizational performance in Malaysian and Thailand automotive industry*. (Unpublished PhD thesis). Universiti Teknologi Malaysia, Malaysia.
- Zuckerman, Amy. (1996). Stanching the flow of new quality standards. *New Steel*, 12(9), 82.

LIST OF PUBLICATIONS

Book

Editor and Contributor. In the Book "*Introductory Forest Science*", Serdang: Universiti Putra Malaysia Press. (2014). Contributed four Chapters: Forest Structure (Chapter 4, 23-30), Forest Pests and Diseases (Chapter 11, 93-98), Forest Management (Chapter 14, 111-118), and Wood Science (Chapter 17, 135-144).

Journal Articles

Ratnasingam, J., **Chong, Y.Y.**, Shukri Mohamed and Roslan Mohd. Kassim. (2013). Quality Expectations in the Malaysian Wooden Furniture Industry: The Foreign Buyers Perspective. *Journal of Applied Sciences*. (ISSN1812-5654)(DOI: 10.3923/jas.2013)

Ratnasingam, J., **Chong, Y.Y.** and F. Ioras. (2013). The Effects of ISO 9001 quality management system on Innovation and Management Capacities in the Malaysian Furniture Sector. *Bulletin of the Transilvania University of Brasov*. Series II: Forestry – Wood Industry – Agricultural Food Engineering - 2013 Vol.6(55) No.1.

Ratnasingam, J., T'ng Pew Ma, **Chong, Y.Y.** and Saied Reza Farrokhpayam. (2011). An Evaluation of the Saw, Dry and Rip Process for the Conversion of Rubberwood. *Journal of Applied Sciences*. 2011 Vol.11(14) pg.2657-2661. (DOI: 10.3923)

Ratnasingam, J., Ioras, F., Swan, T.T., **Chong, Y.Y.** and Thanasegaran, G. (2011). Determinants of Occupational Accidents in the Woodworking Sector: the case of the Malaysian wooden furniture industry. *Journal of Applied Sciences*. 2011 Vol.11(3) pg.561-566.

Magazine/Periodic Articles

Ratnasingam, J. and **Chong, Y.Y.**. (2010). Biomass in Malaysia: Supply and Its Potential. *Asian Timber*. 29(2):24-25.

Ratnasingam, J., Tan C. Y. and **Chong, Y.Y.** (2005). Labor productivity trends in the Malaysian furniture industry. *Asian Timber*. 14(2): 14-16.

Ratnasingam, J. and **Chong, Y.Y.** (2010, May/June 2010). The wood-based industry in Malaysia: facts & figures. *Asian Timber*. 29(3), 28-30.

Ratnasingam, J. and **Chong, Y.Y.** (2010, Sept/Oct 2010). The Wood-Based Industry in Malaysia: Realizing its potential. *Asian Timber*. 29(5), 28-30.

Academic Theses/Reports

Chong, Y.Y. et al. (2003). *Time-Study report for SJI*. Unpublished Studied Paper presented in front of directors of company Successfully Joint-venture International (SJI), Pagoh, Muar at December 24, 2003.

Chong, Y.Y. (2003). *Job satisfaction on general workers in a sawmill*. Unpublished Bachelor thesis. University Putra Malaysia, Kuala Lumpur.

Chong, Y.Y. (2009). *Value Addition and Labour Productivity in the Malaysian Furniture Industry between 1986 and 2004*. Unpublished Master of Science thesis. University Putra Malaysia, Kuala Lumpur.





UNIVERSITI PUTRA MALAYSIA

STATUS CONFIRMATION FOR THESIS / PROJECT REPORT AND COPYRIGHT

ACADEMIC SESSION: _____

TITLE OF THESIS / PROJECT REPORT:

QUALITY MANAGEMENT SYSTEM IN WOOD FURNITURE INDUSTRY IN MALAYSIA

NAME OF STUDENT: CHONG YEN YOON

I acknowledge that the copyright and other intellectual property in the thesis/project report belonged to Universiti Putra Malaysia and I agree to allow this thesis/project report to be placed at the library under the following terms:

1. This thesis/project report is the property of Universiti Putra Malaysia.
2. The library of Universiti Putra Malaysia has the right to make copies for educational purposes only.
3. The library of Universiti Putra Malaysia is allowed to make copies of this thesis for academic exchange.

I declare that this thesis is classified as :

*Please tick (✓)

☐

CONFIDENTIAL

(Contain confidential information under Official Secret Act 1972).

☐

RESTRICTED

(Contains restricted information as specified by the organization/institution where research was done).

☐

OPEN ACCESS

I agree that my thesis/project report to be published as hard copy or online open access.

This thesis is submitted for :

☐

PATENT

Embargo from _____ until _____
(date) (date)

Approved by:

(Signature of Student)
New IC No/ Passport No.:

Date :

(Signature of Chairman of Supervisory Committee)
Name:

Date :

[Note : If the thesis is CONFIDENTIAL or RESTRICTED, please attach with the letter from the organization/institution with period and reasons for confidentially or restricted.]