

**CRITICAL SUCCESS FACTORS AND PERFORMANCE
OUTCOMES OF ISO 9000 IMPLEMENTATION: THE CASE OF
SMALL AND MEDIUM ENTERPRISES IN MALAYSIA**

DOLHADI BIN ZAINUDIN

UNIVERSITI SAINS MALAYSIA

2008

**CRITICAL SUCCESS FACTORS AND PERFORMANCE
OUTCOMES OF ISO 9000 IMPLEMENTATION:
THE CASE OF SMALL AND MEDIUM ENTERPRISES IN MALAYSIA**

by

DOLHADI BIN ZAINUDIN

**Research report in partial fulfillment of the requirements for the
degree of Doctor of Business Administration**

2008

ACKNOWLEDGEMENTS

This must be the most pleasant task in writing a dissertation. I take this opportunity to express my sincere appreciation to those individuals without whom I would not have reached this stage. "It was the best of times , it was the worst of times...." This is the perhaps the most appropriate way to describe the last four years of my life. For various reasons, this was the most significant period of my life. So many people I have met and worked with and they have touched my life and changed it for a good measure.

First of all, I would like thank to Allah for helping me through graduate school experience, my dissertation, and all the other things that have happened during this study endeavour. It is difficult to express how much this program has added to my life.

The completion of this dissertation was made possible through the support of many individuals. I wish to express my gratitude to both my supervisors, Associate Professor Dr Yusserie Zainuddin and Associate Professor T. Ramayah guidance and incisive comments and their illuminating insights in this dissertation writing. They not only have been instrumental in guiding me throughout this exhilarating process, but also have taken a keen interest in my intellectual development and thoughtful mentor guiding for their insightful suggestions on this dissertation.

Special thanks goes to Puan Nor' Afiza Saim, as my head of Section, was a constant source of support. With her encouragement, I was able to accomplish so many things in completing this dissertation. This is the perhaps the first ever doctoral level staffs in her department. I wish to thank the Small and Medium Enterprise and SIRIM in Shah Alam for giving continuous support in reviewing the respondents for certification group. A major part of the work involved collecting data at different industries units in the SMIDEC and SIRIM directory, this is an occasion to express my gratitude to hundreds of such respondents whose names cannot be individually mentioned here for want of space. Special thanks to all the participating companies which have provided valuable information and data for my analysis.

Next, I would like to thank my friends for how they have enriched my life: Rahim Ngatman (for his amazing ability to remain calm in all situations), Dr. Chang Chee Jia and Dr Ahmad Fadzli Tajuddin: for just being there, and for giving to the world that this is just a process in task endeavour.

I also would like to thank my partners in the doctoral stream, Ahmad Faiz, Che Supian, Nik Hasfizul, Wan Norhayate Wan Daud for misery loves company, and when I had no clue to what I was doing, they were a great company. They have gone great lengths to help me out on multiple fronts. We have always been supportive of each other and have formed a strong bond of camaraderie. It was a cherished experience to work and learn together with them throughout these years. I shall miss them dearly.

I have been blessed with incredible senior, Dr Bidin Chee, for helping me to guide this thesis from conceptualization through to approval. Bidin went beyond the unusual tasks of the advisor and contributed considerably to advise me all the time and give me the support to go forward with the successful research especially his encouragement and advice on all aspects of this research

I am ever grateful to my family for their love, encouragement, prayers, assistance unwavering support and during my entire graduate school program. They have fully devoted themselves to my educational pursuits. Needless to say, I can never express in words how much they have contributed in making this DBA a reality. With that also, I dedicate this dissertation to my mother, Puan Halimah Amin and my late father, Allahyarham Zainudin Suut and parents-in-law, Hj. Saleh Idres and Hjh Saadiah Awang and to my brother and sister, Nor'aini, Ahmad Yuhana and Ahmad Danial for being part of the encouragement spirit, situated far from here but still always present. Finally, I am so grateful to my Norhashema Saleh for her support, love and patience during these four years which allows me to work on my dissertation while she went to work everyday. I can safely conclude that without her sacrifice and understanding I could not have done any of this. Ahmad Al-Walid, Ahmad Huzaifah, 'Aishah Zakiah and Ahmad Danish Aiman, for constant enthusiastic reception, irrespectively of how late my home arrival was. They have provided me with the joy and richness in my life and motivated all of my works. They have taken special interest in my work and in my life. I remain grateful to all of them May Allah Bless us all.

TABLE OF CONTENTS

	Page
TITLE PAGE	i
ACKNOWLEDGEMENT	ii
TABLE OF CONTENTS	iv
LIST OF TABLES	x
LIST OF FIGURES	xii
LIST OF APPENDICES	xiii
LIST OF ABBREVIATIONS	xiv
ABSTRAK	xv
ABSTRACT	xviii
 CHAPTER ONE : INTRODUCTION	
1.1 Introduction	1
1.2 Background of the Study	2
1.3 Problem Statement	6
1.4 Research Objectives	7
1.5 Research Questions	8
1.6 Research Scope	9
1.7 Significance of the study	10
1.8 Definition of variables and key term	10
1.9 Summary and Organization of Chapters	12
 CHAPTER TWO : LITERATURE REVIEW	
2.0 Introduction	14
2.1 Definition of Quality	14

2.2	Recent Concern on Quality Certification	17
2.3	Overview of ISO 9000 Quality Management Standard	24
2.3.1	Management Responsibility	30
2.3.2	Resource Management	31
2.3.3	Product Realization	32
2.3.4	Measurement, Analysis and Improvement	32
24	ISO 9000 as a Quality Management Practice	35
2.5	Definition of Small and Medium Enterprises in Malaysia	31
2.5.1	Background of Small and Medium Enterprises in Malaysia	44
2.6	Resource Based View Approach in Adoption of ISO 9000 Standard	47
2.6.1	ISO 9000 QMS as an Organizational Capability	51
2.6.2	Firm Resources and Performance	55
2.7	Implementation of ISO 9000 in Small and Medium Enterprises	56
2.7.1	Problems of implementing ISO 9000 in Small and Medium Enterprises	58
2.8	Critical Success Factors in Quality Management	59
2.9	The Need to Use Critical Success Factors for Total Quality Management in Adoption of ISO 9000 Standard	64
2.10	Critical Success Factors in Adoption of ISO 9000 Standard among Small and Medium Enterprises	68
2.10.1	Top Management Commitment	71
2.10.2	Employee Involvement	73
2.10.3	Education and Training	74
2.10.4	Continuous Improvement	76
2.10.5	Communication to Improve Quality	77
2.10.6	Process Management	78

2.10.7	Internal Quality Audit	78
2.10.8	Information and Analysis	79
2.10.9	Organizational Culture	80
2.11	Performance Outcomes of Certification with ISO 9000	81
2.12	Summary	85

CHAPTER THREE : RESEARCH METHODOLOGY

3.1	Introduction	86
3.2	Theoretical Development	86
3.3	Theoretical Framework and Research Model	89
3.4	Research Design	90
3.5	Hypotheses Development	95
3.5.1	Critical Success Factors in Adoption of ISO 9000 Standard	95
3.5.1.1	Relationship between Top Management Commitment and Adoption of ISO 9000 Standard	96
3.5.1.2	Relationship between Employee Involvement and Adoption of ISO 9000 Standard	97
3.5.1.3	Relationship between Education and Training and Adoption of ISO 9000 Standard	98
3.5.1.4	Relationship between Continuous Improvement and Adoption of ISO 9000 Standard	99
3.5.1.5	Relationship between Communication to Improve Quality and Adoption of ISO 9000 Standard	100
3.5.1.6	Relationship between Process Management and Adoption of ISO 9000 Standard	100
3.5.1.7	Relationship Internal Quality Audit and Adoption of ISO 9000 Standard	101
3.5.1.8	Relationship between Information and Analysis and Adoption of ISO 9000 Standard	102

3.5.1.9	Relationship between Organizational Culture and Adoption of ISO 9000 Standard	103
3.5.2	Performance Outcomes of ISO 9000 Certification	105
3.5.2.1	Relationship between ISO 9000 Adoption and Financial Performance	106
3.5.2.2	Relationship between ISO 9000 Adoption and Non-Financial Performance	108
3.6	Population and Sample	115
3.6.1	Population	115
3.6.2	Sample	117
3.7	Research Instrument	118
3.7.1	Administering Questionnaire	118
3.8	Design of Questionnaire	121
3.9	Data Collection Procedures	125
3.9.1	Primary Data Search	125
3.9.2	Secondary Data Search	125
3.10	Pretest of Survey Instrument	126
3.11	Statistical Analysis	127
3.11.1	Statistical Packages for Social Science	127
3.11.2	Factor Analysis, Reliability and Validity Analyses	127
3.11.3	Descriptive Statistics	129
3.11.4	T-Test	128
3.11.5	Discriminant Analysis	129
3.11.6	Summary of Methodology	130

CHAPTER 4 DATA ANALYSIS AND FINDINGS

4.1	Introduction	131
4.2	Analysis of Respondents' Demographic Composition	131
4.2.1	Companies' Organizational Characteristics	132
4.2.2	Respondents' Job Function	134
4.3	Reasons for Seeking ISO 9000 Certification	138
4.4	Goodness of Measures	140
4.4.1	Factor Loading for Independent Variables-Critical Success Factors	141
4.4.2	Factor Analysis of Performance Outcome-Dependent Variables	145
4.4.3	Reliability Analysis	153
4.5	Descriptive Analyses	155
4.6	Hypotheses Testing	158
4.6.1	Test for Hypothesis for Critical Success Factors Using Discriminant Analysis	158
4.6.2	Test for Hypothesis for Performance Outcome Using Independent Sample T-Test	162
4.7	Summary of Major Findings and Result of the Hypotheses	167

CHAPTER 5 DISCUSSION AND CONCLUSION

5.1	Introduction	167
5.2	Recapitulation of Study	167
5.3	Discussion on Findings	170
5.3.1	Discussion on the Influence of Critical Success Factors towards ISO 9000 Certification	170
5.3.1.1	Top Management Commitment can predict ISO 9000 Certification	170

5.3.1.2	Employee Involvement can predict ISO 9000 Certification	171
5.3.1.3	Training and Education can predict ISO 9000 Certification	172
5.3.1.4	Continuous Improvement can predict ISO 9000 Certification	173
5.3.1.5	Communication for Quality can predict ISO 9000 Certification	175
5.3.1.6	Process Management can predict ISO 9000 Certification	176
5.3.1.7	Internal Quality Audit can predict ISO 9000 Certification	177
5.3.1.8	Information and Analysis can predict ISO 9000 Certification	178
5.3.1.9	Organizational Culture can predict ISO 9000 Certification	179
5.3.2	ISO 9000 Implementation and Performance Outcomes	180
5.3.2.1	ISO 9000 companies will have higher financial performance compared to non-ISO 9000 companies	180
5.3.2.2	ISO 9000 companies will have higher non-financial performance compared to non-ISO 9000 companies	182
5.4	Theoretical Viewpoint	183
5.5	Managerial Viewpoint	186
5.6	Limitations and Suggestions for Future Research	188
5.7	Conclusion	192
REFERENCES		193
APPENDICES		210

LIST OF TABLES

	Page	
2.1	Total number of ISO 9000 Certification Worldwide	19
2.2	Comparison on the Total Number of Standard Adoption Worldwide	22
2.3	Comparison on the Total Number of Standard Adoption In Malaysia	23
2.4	The ISO 9000: 1994 series	26
2.5	Revised standards (ISO 9000, 2000 series)	28
2.6	Total Number of ISO 9000 Certificates in Malaysia	38
2.7	Definition of SMEs by Full-Time Employment	43
2.8	Definition of SMEs by Sales Turnover	43
2.9	Current Status of SMEs	46
2.10	Types of Certification as at 31 December 2005	47
3.1	Layout of the Questionnaire	123
4.1	Respondents' Demographic Composition	135
4.2	Is your company certified ?	136
4.3	Respondents Job Function	137
4.4	Reasons for Seeking ISO 9000 Certification	138
4.5	Kaiser-Meyer-Olkin Measures of Sampling Adequacy and Bartlett's Test	144
4.6	Summary of Within Factor Analysis (Critical Success Factors)	148
4.7	Summary of Within Factor Analysis (Performance Outcome)	152
4.8	Reliability Coefficients for the Major Variables	154
4.9	Descriptive Statistics of All Principal Construct	157
4.10	Results of Discriminant Analysis: Critical Success Factors as Independent Variable	160

4.11	Hits Ratio for Cases Selected in the Analysis	160
4.12	Hits Ratio for Cross Validation(Leave One Out Classification)	161
4.13	Hits Ratio for Cases in the Holdout Sample	161
4.14	Comparison of Goodness of Results	161
4.15	Independent T-Test for Financial Performance	163
4.16	T-Test for Non-Financial Performance Outcome	163
4.17	Summary of Interpretive Measures for Discriminant Analysis	165
4.18	Summary Result of the Hypotheses	166

LIST OF FIGURES

	Page
2.1 Process-Based Model of ISO 9000:2000 Quality Management System	34
3.1 Research Model	93

LIST OF APPENDICES

		Page
Appendix A	Research Interview Guide: Critical Success Factors and Performance Outcomes of ISO 9000 Standard Implementation: The Case of Small and Medium Enterprise in Malaysia	211
Appendix B	Summary of Research Interview : Research Interview Guide : Critical Success Factors and Performance Outcomes of ISO 9000 Standard Implementation: The Case of Small and Medium Enterprise in Malaysia	212
Appendix C	Questionnaire Survey	216
Appendix D	Factor Analysis and Reliability Analysis	224
Appendix E	Descriptive Statistics	267
Appendix F	Discriminant Analysis	279
Appendix G	Independent Sample T-Test	284

LIST OF ABBREVIATIONS

SME	: Small and Medium Enterprises
MIDA	: Malaysian Industries Development Authority
SMIDEC	: Small and Medium Development Cooperation
ISO	: International Organization of Standards. The ruling body of the ISO 9000 and 14 000 standards based in Geneva, Switzerland.
SIRIM	: Standards Industries and Research Institute of Malaysia
CSF	: Critical Success Factors
MNC	: Multinational Corporation
TQM	: Total Quality Management
QC	: Quality Control
QC	: Quality Control Circles
FMM	: Federation of Malaysian Manufacturers
IRB	: Inland Revenue Board
KMO	: Kaiser-Meyer-Olkin
MNC	: Multinational Corporation
NPC	: National Productivity Corporation
SPSS	: Statistical Package for Social Science

ABSTRAK

FAKTOR KEJAYAAN KRITIKAL DAN PRESTASI PERLAKSANAAN ISO 9000: SATU KES DI INDUSTRI KECIL DAN SEDERHANA DI MALAYSIA

Penyelidikan ini bertujuan untuk meramalkan hubungan antara faktor kejayaan kritikal serta mengenalpasti apakah faktor kejayaan kritikal memainkan peranan penting untuk mencapai piawai ISO 9000. Hubungan ini seterusnya menyelidik pelaksanaan dan kesan prestasi di kalangan syarikat yang mengamalkan ISO 9000. Satu kajian tinjauan menggunakan soal selidik berstruktur telah dijalankan. Sejumlah 155 responden daripada 155 industri kecil dan sederhana mengambil bahagian dalam penyelidikan ini. Merujuk kepada faktor kejayaan kritikal, analisis diskriminan telah dijalankan dan keputusan menunjukkan bahawa tiga daripada sembilan faktor kejayaan kritikal menunjukkan secara statistik ia signifikan di antara syarikat yang mendapat persijilan ISO 9000 dengan yang tidak mendapat persijilan ISO 9000, iaitu, komunikasi untuk kualiti, maklumat dan analisis dan budaya organisasi. Prestasi yang ditunjukkan telah dijalankan dengan menggunakan ujian t menunjukkan terdapat perbezaan signifikan di antara pengamal ISO 9000 dan bukan pengamal ISO 9000. Ini menunjukkan bahawa syarikat yang mendapat ISO 9000 menunjukkan prestasi yang lebih baik berbanding dengan syarikat yang tidak mendapat ISO 9000 bagi prestasi kewangan dan prestasi bukan kewangan.

**CRITICAL SUCCESS FACTORS AND PERFORMANCE OUTCOMES OF ISO
9000 IMPLEMENTATION: THE CASE OF SMALL AND MEDIUM
ENTERPRISES IN MALAYSIA**

ABSTRACT

The study attempts to predict the relationship between Critical Success Factors (CSFs) and adoption of ISO 9000 and to identify which CSFs play the main role in achieving ISO 9000 standard. This relationship was further investigated on the ISO 9000 implementation and the performance outcome for companies adopting ISO 9000 standard. A survey using structured questionnaire was employed. A total of 155 respondents from 155 small and medium enterprises participated in this study. With regards to critical success factors, a discriminant analysis was conducted and the results showed that three out of nine critical success factors is statistically significant between ISO 9000 and non-ISO 9000 certified companies which are communication for quality, information and analysis and organizational culture. Performance outcome was conducted using t-test and the result shows significant between ISO 9000 and non-ISO 9000 certified companies. The study is found statistically significant that ISO 9000 companies perform better than non ISO 9000 companies for both financial performance and non financial performance outcomes.

CHAPTER 1

BACKGROUND OF THE STUDY

1.1 Introduction

The introduction and implementation of a new quality system brings about profound changes in companies (Carlsson & Carlsson, 1996). Although, large organizations such as the multinational corporation the have progressed well in the application of quality systems, the small and medium organizations in the country have been latecomers and yet to be seen in the implementation of such quality system. In implementation of this, as the researchers agree that the most well-known and applied standard for quality systems is the ISO 9000 series (Gustafsson et al., 2001) and therefore, this research focus to the small and medium enterprises (SME) in Malaysia that has implemented the MS ISO 9000:2000 Quality Management System.

According to Burt, Dobler and Starling (2003), quality certification has become a common practice at most major companies because of a renewed interest in achieving quality certification as the source of competitiveness. Unfortunately, due resource constraints can place the SMEs at a quality disadvantage. As a result, these companies often struggle to achieve the world class quality standards customers now are in demand. To overcome inherent resource constraints adopting standardized quality certification, it is important to identify the critical success factors that have influenced SMEs towards their implementation of ISO 9000 certification and their outcome after implementation of the quality standard. Therefore, this research will focus on the method of ISO 9000 implementation where, emphasizes to the limited resources available in the SMEs organization to improve the quality and standards compliance. The

certification is viewed very often as a tool for staying competitive in the domestic and international markets, and as a means of adding value to the organisational processes and improving quality and performance (Poksinska et al., 2002).

Hence, in this chapter, the author highlight the background of the ISO 9000 implementation among the SMEs with an interviewed with a selected samples of SMEs that has been certified with ISO 9000 in order for us to have the insight of the implementation effort among the SMES. The chapter will also elaborate on the research problem, research objectives, research scope and objectives of the research and lastly followed with the definitions of terms used in this research.

SME has played an important function in enhancing the Malaysia economy and has seen as having a crucial role in shaping the nation's industrial future. These sector's contributions to the nation's economy can be seen from various aspects in terms of business units, employment opportunities as well as economic output. (SME Report, 2005) Apart from these contributions, the SMEs sector in Malaysia is also known to make other value contributions such as regional income generation, savings, training, stimulation of competition, aiding large firms, introduction of innovation, and as a seed-bed for growth (Hashim, 2000).

1.2 Background of the Study

In Malaysia, the SMEs currently account for more that 90 % of the total number of firms in the manufacturing sector (SME Report, 2005). In pursuing volume and their potential contribution for these SMEs, Malaysian Government has plan and develop comprehensive programmes to enhance and promote

standardization and quality management. The role of these programmes, prepare these industries in facing an increasingly borderless marketplace, new and rapidly changing technologies as well as intense international competition (Amir & Ho, 1994). Hence, to note the seriousness of the government towards SMEs, has undertake the initiatives, that each company has the maximum grant for ISO 9000 certification to the maximum of RM 250,000. (SME Report, 2005)

The Malaysian Government is serious about the certification and standardization in order for these SMEs to continuously to improve the processes in order to sustain competitiveness which would generate more revenue to the companies and contribute towards the nation's economy in general. In similar vein, SMEs, must comply with the various certificates and standards that requires in and abroad the market. (MIDA, 2005; SME Report 2005)

The National Development Council has established policy guidelines in promoting and coordinating the development of SMEs, the National Development Council would pursue SMEs would produce quality and high value- added products and services for both the domestic and export markets, the following guidelines. The government has given many programmes and incentives to help the SMEs grow and increase value added products and services (MITI, 2002). This planning was aims to promote the gradual introduction of quality systems among SMEs based on ISO 9000 with the technical assistance of foreign affiliates and other advanced manufacturing companies. Thus, while ISO 9000 can help the small manufacturer consolidate its quality certification efforts, the program must be well conceived and well executed to justify its costs and deliver on its promise of better quality and enhanced competitiveness.

It hopes to encourage quality management by the SMEs by promoting the application of such systems under the Quality Improvement Scheme (QIP) and to those companies accredited under the QIP as suppliers to the main manufacturing companies. Many SMEs have an awareness of the necessity to implement quality management. This is particularly so among those firms whose main markets are abroad, or firms which produce parts and materials to be supplied to the manufacturers of products for export. However, it is extremely rare among local SMEs to find firms which actually apply total quality management, including quality control (QC) circle activities and other necessary practices, as an important element in upgrading in-house technical levels. The majority of local SMEs regard quality management as a response to buyers' requirements, and so they rarely undertake anything beyond product inspection. Only a small number of Malaysian SMEs have reached a stage of development where they are able to apply quality management and effect an upgrading of their technical levels autonomously. The majority implement quality management in response to demands from their clients.

To comprehend the insight of ISO 9000 in a randomly sample of SMEs companies certified to ISO 9000, the author had interviewed a few companies to have some insight of how ISO 9000 being regarded in those companies. The interviews was initiated with the employees of an organizations which has been certified with ISO 9000 quality management system was conducted in initiating the process of this research. The author had on-site interviewed a few companies within his network of practitioners who are directly involves in the implementation of ISO 9000 standards. A copy of the seven guided questions used and responses to be questions are as Appendix A. During this short

interviewed, these questions were posed to basically understand the importance of ISO 9000 certification, reason for being ISO 9000 certified, implementation process, employee involvement and commitment from the initiation certified to ISO 9000 standard. With the responses to these questions, one could offer some insight into motivating factors and outcome of the benefits. Responses the questions are found in Appendix A, whereas the summary for the responses are available in Appendix B. Overview of the responses to the nine questions is presented here with the following generalization:

Using question 1(Q1) The key reason/s that lead your firm to seek ISO 9000 certification basically due to external reason which is due to marketing strategy and external regulatory. The responses to the size of workforce total number of employees at your location (Q2), ranged from 40 to 500 employees. With Q3, the authors inquired about quality system was in place prior to implementing ISO 9000 and the common responses is that no formal system except standard operating procedure and flowchart. In Q4, the author explored the roadblocks that could hinder the success for the system's outcome and the common response is that employees were the resistant to change or skeptical of the real value outcome of the implementation of ISO 9000 quality system.

Exploring the behavioral aspect of ISO 9000 certification, the author inquired about employees' attitudes at the beginning and throughout implementation with Q5 and Q6. In responses to Q5, the attitude of employees at the beginning of the project were varied with the resistance to change and the most notable one is the skeptical about seeing any of the real value. Q6 solicited responses about whether the employees have changed from the beginning to final registration. The responses were also mixed. The employees

that were resistance to change and did not see the real finally understood the need to be certified. With Q7, the authors asked how long did it take from the beginning to final registration. The responses ranged from 8 months to 6 years and notably one respondent informed about the failure at first attempt for certification. In Q8, the author asked on their opinion on the list of success factor/s that lead to adoption of ISO 9000 standard in their organization. The responses are varied but basically the success factors being identified which are the common factors such as commitment from top management, employee involvement, process management, training and education, information and analysis, communication, organization culture, measurement or data analysis, auditing, improvement activities or continuous improvement.

1.3 Problem Statement

ISO 9000 is a set of international standards that provide management requirements for creating and maintaining quality systems. Obtaining ISO 900 certification is not a trivial process, which requires investment in time and money and management commitment (Masternak & Kleiner, 1995). Some organizations have either failed to obtain certification or have abandoned the process along the way in the ISO 9000 certification efforts. It is very important for organizations to understand the experience of others through literature review who have been involved in the process which what this study is focused on. Based on the studies by Morena-Luzon(1993) and Hendricks & Singhals (1999) sees that small and medium organizations benefits from ISO 9000 implementation, however, there are also examples of failed or badly performed adoption on ISO 9000 standard. So far there is no comprehensive study about

critical success factors that contribute to successful implementation of ISO 9000 and the organizational performance of SMEs especially in context of Malaysian business environment. Hence, the need for a more systematic and deliberate study on the critical success factors (CSFs) in adoption of ISO 9000 standard is crucial. Organizations need to be cognizant and aware of the factors that will influence the success in adoption of ISO 9000 certification. Ignorance and oversight of the necessary important factors will likely hinder an organization's effort to realize its full benefit. Therefore, this paper would contribute to our understanding of an important practical problem, identify the critical success factors that predict the adoption of ISO 9000 quality management systems in small and medium enterprises in Malaysia. In evaluating the relationship between ISO 9000 implementation and performance outcomes, this study will then decide to evaluate performance outcome in two principal ways of measurement of performance: economic which includes financial measures such as sales, profits and market share and non economic which includes non-financial measures relating customer perspectives elements etc. (Kaplan & Norton, 1992)

1.4 Research Objectives

Due to the worldwide acceptance in directly have given an explosion of published work on issues associated with ISO 9000 certification in quality management journals. Those works focus on how to obtain ISO 9000 certification and do not generally address the business value of ISO 9000 certification and their relationship. Despite its overwhelming popularity, there is still considerable confusion surrounding the effects of ISO 9000 registration

effort on the outcome consequences and relationship between the variables. There remains an open question, however, as to whether or not the time and money spent on certification yields benefits that exceed the costs of certification.

The objectives of these studies:

- i. To identify the critical success factors influence the successful implementation of the ISO 9000 Quality Management System among small medium enterprises in Malaysia.
- ii. To investigate the organization performance that these SMEs have gained from implementing the system of the ISO 9000 certified organizations.

1.5 Research Questions

Despite its overwhelming popularity, there is still considerable confusion surrounding the effects of ISO 9000 registration effort on the outcome consequences and relationship between the variables. There remains an open question, however, as to whether or not the time and money spent on certification yields benefits that exceed the costs of certification.

That is why we are interested in the question what are the critical success factors in the implementation toward ISO 9000 certification and outcome of the implementation of ISO 9000 standard among these companies.

The aim of this research is to study the factors for companies' willingness to adopt ISO 9000 and the outcome of implementing ISO 9000. The research questions included the following:

- i. Do the critical success factors predict the ISO 9000 adoption efforts

among the SMEs'?

- ii. Does ISO 9000 implementation of the SMEs shows difference in the performance outcomes?

1.6 Research Scope

Research on critical success factor (CSF) in adopting ISO 9000 in SMEs organization has to be viewed differently due to the resource constraint and exposure as one of the platform for competitiveness. Hence, this would be worthwhile to focus on the critical success factor in ISO 9000 implementation and the benefit derived from the decision. Most research focused on critical success factor has been emphasizing on total quality management and not much has been explored on ISO 9000.

This study is limited to SMEs organizations which have been identified as having implemented an ISO 9000 program. The quality of survey results depends upon the knowledge of its respondents. The survey in this study is designed for the quality managers of the respondent organizations. These individuals were targeted because they were most likely to be knowledgeable about the ISO 9000:2000 implementation practices in their organizations. But since there may be variances in the level of knowledge possessed by the participants, systematic variances in the research results may be introduced. In addition, the survey respondents may have been biased in answering survey questions that require judgment and their subjective responses may not be reflective of the actual situation.

1.7 Significance of the study

To embark to any initiatives that increases the operational cost in ISO 9000 implementation appear to be the factor prohibited to business organization such as SMEs. But, as globalization phenomenon impacts the relevant sector of economies and industries, the impact of certification will not only assist in the creation of domestic market but increase in their competitiveness. This study is significant in that it identified the critical success factors among the ISO 900 certified companies and it will also identified the main critical success factors and also the performance of these ISO 9000 certified companies., Hence, with the research outcome, the results can benefit the quality practitioners especially the SMEs and help them understand the roles they should play during the stages of implementation. Furthermore, the findings of this research will benefit researchers with an empirical study of the implementation of ISO 9000:2000 in Malaysia as a developing country and may lead to further studies in other developing countries.

Importantly, this will be of great help to organizations that are planning to implement ISO 9000:2000; it can serve as a guideline methodology for the top management of SMEs companies to effectively plan and apply the standard based on results extracted from Malaysian business organizations that have common factors and share similar cultural needs.

1.8 Definition of variables and key term

The key terms used in the present study are briefly defined below. The sources of these variables and their dimensions will be explained in greater detail in Chapter 2 (Literature Review) and Chapter 3 (Research Methodology).

- 1.8.1 Certification or registration– These terms are used interchangeably. The Standard requires that a firm set up an internal quality assurance system. This system is subject to audit by a third party prior to certification (Label & Priester, 1996).
- 1.8.2 ISO 9000– A generic, baseline family of quality standards written to be broadly applicable to a wide range of varying non-specific industries and products. These standards establish the basic requirements necessary to document and maintain an effective quality system (Randall, 1995).
- 1.8.3 Quality System – The organizational structure, responsibilities, procedures, processes and resources for implementing quality management (Peach, 1997).
- 1.8.4 Accreditation- A process by which organizations are authorized to conduct certification of conformity to prescribed standards (Hoyle, 2003, p. 647).
- 1.8.5 Certification - A process by which a product, process, person or organization is deemed to meet established criteria set by an accrediting or certificate granting organization (Hoyle, 2003.)
- 1.8.6 Quality Management System - The set of interconnected processes used by the organization in a formalized system that documents the structure, responsibilities and procedures required to achieve effective quality management (Hoyle, 2003, p. 654)
- 1.8.7 Registration - A process of recording details of organizations of assessed capability that have satisfied prescribed standards (Hoyle, 2003)
- 1.8.8 Standards - Documented agreements containing technical specifications or other precise criteria to be used consistently as rules, guidelines, or

definitions of characteristics, to ensure that materials, products, processes, and services are fit for their purpose (Evans & Lindsay, 2000, p. 132

1.8.9 ISO 9000 quality management system. A set of procedures, activities, feedback mechanism and management actions based on ISO 9000 standards and guidelines, which intend to ensure the consistent quality of products and services delivered (Van Den Berghe, 1997). In this study, “being registered to the ISO 9000 standards” is understood as “having the ISO 9000 quality management system” – that is, implementing the ISO 9000 quality management system.

1.9 Summary and Organization of Dissertation

This study comprises of five chapters. Chapter 1 introduces the problem and the need for this research. It identifies the research question, the purpose, the objective, and the scope of this study. A plan of presentation is also included in this chapter. Limitations of the study will also be highlighted. Chapter 2 is a review of the relevant literatures related on the study conducted. Specifically, it gives information about the principles of ISO 9000 standard and the resource based view approaches includes past research conducted on how quality and ISO 9000 standard can be used together to improve a system. It also gives a brief background of the development of quality and ISO 9000 issues, both worldwide and in Malaysia. In this chapter, the relationship between critical success factors and performance outcomes is discussed and the significance of adoption of ISO 9000 standard among small and medium enterprises. Chapter 3 describes the research methodology of the study. It includes the research

CHAPTER 2

LITERATURE REVIEW

2.0 Introduction

Chapter 2 reviews the literature to establish what is already written about the practice and the issues that we need to address in order to fit in the gap in the current literature reading. This review is comprehensive, but it is not necessarily complete in that it covers all the theoretical issues concerned to the level needed to validate the problem and to sanction the research questions. The approaches taken here provide a theoretically substantiated path to the research questions, other path to the same place may be found which are more direct, or more generalizable, but still lead to the same place Quality Management Systems, and outlines generically, the ISO 9000 certification process. It then examines the definition of quality and early initiatives in the planning and implementation of quality management systems Heading for this chapter were based on the following areas: (a) Definition on quality, (b) Overview of ISO 9000 Quality Management System, (c) Motives for ISO 9000 certification and benefit variable, (d) ISO 9000 and organizational performance, (e) Implementation of ISO 9000,

2.1 Definition of Quality

The term quality is defines and described in numerous and various approaches and rhythms. It is a complex and multifaceted concept and has different meaning to different people and thus resulted misunderstood and defined in several ways. Even the layman at the street repeating uttering word on quality, whenever buying fruits at the market. However, in another scene that we can says is that to improve

and assure the quality of the organization, it is important for us to really understand, and identify and ultimately measure quality in any approach of implementation.

In defining quality, Oxford Dictionary defines as “standard of something when it is compared to other things like it and also knows for a feature which makes it different from other and normally of a high standard comparison”. However, this definition is very subjective and general and let’s us again surf more on the explanation on the term quality by different gurus’ on quality.

In defining quality in any organization, we focused on customer's needs and satisfaction in business and industry. Feigenbaum (1956) defines quality as “full customer satisfaction” and Juran (1989) defines quality as “fitness for purpose”. The British Standards Institution (1987) also defines quality as “the totality of features and characteristics of product or service that bear on its ability to meet stated or implied needs” (British Standards Institution, 1987). This is usually referred to as meeting requirements, conforming to specifications, and fitness for purpose. Donaldson (1994) gives an appropriate conclusion about the definition of quality that “quality does not lend itself to easy and precise definition, but there is a general agreement that the quality of any activity should be assessed in relation to its purpose” (Donaldson, 1994, p.103)

As quality has become one of the most important drivers of the global competition today. Intensifying global competition and increasing demand for better quality by customers have caused more and more companies to realize that they will have to provide high quality product and/or services in order to successfully compete in the marketplace. To meet the challenge of this global competition,

many businesses have invested substantial resources in adapting and implementing various methods of quality initiatives and among the many quality initiatives, the ISO 9000 certification program has increasingly become popular. In achieving the quality initiatives in any organizations or firms, some firms have adopted various quality practice which either sequentially or in tandem such as ISO 9000 where quality management has its origin in the manufacturing industry, it is now more global in scope and permeates through all sectors of the economy. This can be applied to all functions and all industries in different areas of human endeavor and have been described as the one size fits all standards (Awan & Bhatti, 2003)

In many organizations, there is now a growing interest in the development of "quality systems" as a means of organizational change through the improvement of key processes. Many organizations are embracing the quality management philosophy and incorporating quality assurance standards as an integral part of their quality systems. Russell (1993), one of the intention of ISO 9000 series of standards was developed by the International Organization for Standardization in order to help organizations fines what is a quality system should do.(Russell,1993). Geisler & Justus (1998) point out, with the intent of ISO 9000, is to ensure a structural framework that is comprehended and followed throughout an organization. Adoption of the quality system should also be seen as a strategic decision of managing resources in an organization. The ISO 9000 standards provide the foundation on which a firm can build its quality management and quality assurance systems so that it may ultimately achieve a high level of success with its series which is the only system accepted globally.

2.2 Recent Concern on Quality Certification

In today's global market, customers require their expectations and needs to be continually met. Quality of products, services and processes therefore become crucial factors in performance of an organization. This has resulted in the worldwide trend to ensure consistent and standardized processes that will produce products and services that meet and/or surpass customer's implied or stated needs. In order to cater the global needs, The International Organization for Standardization (ISO) has developed a series of quality standards named ISO 9000 standard.

Until now with an ever-increasing number of ISO 9000-certified organization around the world, this ISO 9000 has become the most widely accepted quality management system. Since ISO 9000 standards were introduced in 1987, it becomes a world-wide trend that organizations, regardless of their sizes and products, universally accept the mode of ISO 9000 series of standards and adapt to benefit themselves. Many countries have either embraced ISO 9000 or used it as the basis of their national quality certification systems. As one response to the need to add value, there have been over 776,608 certificates in the ISO 9000 awarded worldwide (ISO 9000 Survey on Certification-2005). In fact according to the most recent statistics available (ISO 2005), there has been steady growth in the number of certificates awarded since the beginning of 1993. As presented in Tale 2.1 shows the last 15 years growth pattern (see Table 2.1) and ISO 9000 survey reveals that there are approximately 161 countries involved in these certification activities.

While this impressive growth of ISO 9000 certification in Malaysia implies that the awareness exists for the need for quality planning and management, but according to Puay, Tan et.al (1998) there still exists in ISO research regarding quality improvement and economic gains and this added with mixed results on the study in UK and Australia regarding ISO 9000 implementation. As reported in Table 2.2, the number of companies certified to ISO 9000:1994 series and later ISO 9000:2000 is greater compares to other standard such as ISO 14000:1996, ISO 14001:2004, ISO 13486:2003 and ISO/TS 16949:2002. The growth rate of ISO 9000 implementation in Malaysia surpassed other types of standard certification. The activity in this area could also be attributed to the increasing demands for quality assurance from customers (government and non-government organizations), most notably through ISO 9000 certification (Samson, 1997).

The number of certified companies (anon, 1996) was low in the first four years after the introduction of ISO 9000 into Malaysia in 1987. The first certifications were awarded to companies which successfully implemented ISO 9000 in 1987. In 1995, the number of organization being certified to ISO 9000 was 1,921 and by 2005, the number of certified companies had increased by more than 5 times, as shown in Table 2.3

Based on the premise that ISO 9000 certification is expected to help organizations to enhance quality and efficiency, improve communications, achieve competitive advantage, gain an increase in market share, reduce costs and achieve a higher stock price (Casadesus & Karapetrovic, 2005) which resulted in many countries have either embraced ISO 9000 or used it as the basis of their

national quality certification systems but whether this brings about better business performance is still an open question (Avery, 1994; Sneddon, 1998).

Table 2.1
Total number of ISO 9000 Certification Worldwide

Survey Cycle		World Total	World Growth	Number of Countries / Economies	
1st	Jan-93	27,816	0	0	
2nd	Sep-93	46,571	18,755	48	
3rd	Jun-94	70,364	23,793	60	
4th	Mar-95	95,117	48,546	75	
5th	Dec-95	127,353	32,236	88	
6th	Dec-96	162,704	35,351	98	
7th	Dec-97	224,103	61,399	116	
8th	Dec-98	271,966	47,863	128	
9th	Dec-99	343,643	71,677	143	
10th	Dec-00	408,631	64,988	150	
11th	Dec-01	ISO 9000:1994	466,228	57,597	63
		ISO 9000:2000	44,388	44,388	98
		Total	510,616	101,985	161
12th	Dec-02	ISO 9000:1994	394,537	-71,691	25
		ISO 9000:2000	167,210	122,822	134
		Total	561,747	51,131	159
13th	Dec-03	497,919	330,709	149	
14th	Dec-04	660,132	162,213	154	
15th	Dec-05	776,608	116,476	161	

Sources: *The ISO Survey of ISO 9000 and ISO 14000 certificates*

This was further reiterated by the Malaysia's Work Minister in year 2004 that, any contractors should embark for ISO 9000 certification in order to enhance

the chances for competitiveness in international market. (NST, 03/09/2004). To quote Prime Minister of Malaysia, Dato' Seri Abdullah Ahmad Badawi's expectation in quality issues, he has been repeatedly instructing various organizations to improve the services and process of service deliverables to the customers. He then, shows his interest in his practice and not mentioning the word quality by having a surprise visit during his first 100 days of tenure as a Prime Minister of Malaysia. He went with his ministerial staffs heading to for Immigration Department for the sole purpose to observe the services rendered by these employees of this public organization in their deliverable to the public. In short his concern is quality which translated as efficiency, effectiveness and productivity even though not even a single word of ISO 9000 has been said by the premier.

As reported in Table 2.2 that the demand for ISO 9000 quality standard certifications is continuously increasing and involving a higher and higher number of enterprises and organizations, both public (no-profit) and private (ISO 9000, 1994, 2000) compares to other certification such as ISO 14001:2004 and ISO 13486:2003 worldwide. Latest ISO survey (ISO, 2006) gives an updated photograph about the state of development of this process in several countries in the world.

While this impressive growth of ISO 9000 certification implies that awareness exists for the need for quality planning and management, but as cited Tan et.all (1998) expressed that, there exists deficiency in ISO 9000 research regarding outcome after certification especially in quality improvement and economic gain and which need to find out in this research.

Although there are reports indicated that there have been benefits that have been accrued to ISO 9000 certified firm but there are studies in the UK and Australia regarding ISO 9000 implementation has shown mixed results (Carlsson & Carlsson,1996). Even, Franceschini, Gallet and Cecconi(2006) agree that currently, the common point of discussion on the effects of ISO 9000 certification on business performance still a high concern and the question of whether the increase of business is due to the management methodology prescribed by the quality standards or it is the question of marketing. This has lead many researchers tried to find an empirical evidence of the relationship between these two aspects. They finally summarized their findings that the correlation among certification and business performances has not demonstrated.

With the worldwide diffusion, ISO 9000 increasingly catches the attention of practitioners and scholars and also research has now to focus on both the understanding the motivation for certification with ISO 9000 and consequences of adopting the standard. This is further supported with by Carlsson and Carlsson, (1996), the ISO 9000 certification is today probably the most widely used and internationally accepted quality management tool. (Carlsson & Carlsson, 1996; Askey & Malcom, 1997). But to this extend, the degree of indication that may be of question is the level of ambition for quality as well as an acceptance of ISO as a tool for organizational development remains an open question. Although, Ho (1994) argue that ISO 9000 initial steps of a continuous improvement process.

Ultimately, the question on the firms' business excellence using ISO 9000 standard as the initial step is again need to be resolve in this research.

Table 2.2*Comparison on the Total Number of Standard Adoption Worldwide*

Name of Standard	Year						
	Nov-99	Dec-00	Dec-01	Dec-02	Dec-03	Dec-04	Dec-05
ISO 9000:1994 Quality Assurance (previous version)	343,643	408,631	466228	394,537	Certification for ISO 9000:1994 effectively end December 2003		
ISO 9000:2000 Quality Management System (current version of standard)	Initiated after December 2000		44,388	122,822	330,709	162,213	116,476
ISO 14000:1996 Environmental Management Systems	14,106	22,897	36,765	44,449	66,070	90,569	111,162
ISO 14000: 2004 Environmental Management Systems (new current version of standard)	Initiated of certification in 2004						56,593
ISO/TS 16949:2002 Quality Management System for automotive production and relevant service part organization	Initiated of certification in 2004				3,068	2403	5065
ISO 13485:2003 Medical Devices-QMS-Requirement for regulatory purposes	Initiated of certification in 2004				3,068	2403	5065

Sources: The ISO Survey of ISO 9000 and ISO 14000 certificates

Table 2.3*Comparison on the Total Number of Standard Adoption in Malaysia*

Name of Standard	Year							
	Nov-99	Dec-00	Dec-01	Dec-02	Dec-03	Dec-04	Dec-05	Dec-06
ISO 9000:1994 Quality Assurance(previous version)	1,921	2,355	2,900	2,614	No certification for ISO 9000:1994 after December 2000			
ISO 9000:2000 Quality Management System (current version of standard)	Initiated after December 1999		257	1,119	3,076	4,337	5695	5980 Refer Note 1
ISO 14000:1996 Environmental Management Systems	117	174	367	367	370	566	694 Refer Note 2	
ISO/TS 16949:2002 Quality Management System for automotive production and relevant service part organization	Initiated of certification in 2004						22	116
ISO 13485:2003 Medical Devices-QMS-Requirement for regulatory purposes	Initiated of certification in 2004						4	20

Sources: The ISO Survey of ISO 9000 and ISO 14000 certificates

Note 1: Based on interview with SIRIM QAS International's personnel

Note 2: Total certification was 694 where 448 certifications registered with reference to ISO 14000(2004)

Note 3: No information available until after May 2007

2.3 Overview of ISO 9000 Quality Management Standard

No one knows the time and place of the emergence of standards, but it can be said that standards are as old as the industry itself. This standard provides particular element that must be considered during the production of products in order to achieve the target which could be in different aspect to be achieved which range from customer specification. Hence, in quality in essence, it can be described as best achieved when deviation is minimizing from a target specified.

The International Organization for Standardization (ISO) is a network of the national standards institutes of 148 countries which is an international non-governmental organization, based in Geneva, Switzerland, and is not a part of any federal government, the European Union (EU) or the United Nations (UN) (Goetsch & Davis, 2002). However, ISO does have consultative status with 40 intergovernmental organizations (IGO) and the UN (Loya & Boli, 1999). Individual countries may participate in ISO by having a national standard body that obtains membership in ISO. These member bodies may be governmental, quasi-governmental or private (Loya & Boli, 1999). A full member body is described by ISO as the national body "most representative of standardization in its country." These members of ISO are involved in the process and development of any of the ISO standards. Full member bodies are also entitled to participate and exercise full voting rights on any technical committee and policy committee of ISO (<http://www.iso.org>). In the US, this national body is known as American National Standards Institute (ANSI) and in the UK the national body is the British Standards Institute (BSI).