FACTORS INFLUENCING THE IMPLEMENTATION AND MAINTENANCE OF ISO 9001:2000 STANDARD IN SELECTED ORGANISATIONS IN MALAYSIA

ROZIANA OTHMAN.

GSM 2006 6
FACTORS INFLUENCING THE IMPLEMENTATION AND MAINTENANCE OF ISO 9001:2000 STANDARD IN SELECTED ORGANISATIONS IN MALAYSIA

By

ROZIANA HJ. OTHMAN

Thesis Submitted to the Graduate School of Management, Universiti Putra Malaysia, in Partial Fulfillment of the Requirement for the Degree of Master of Science

June 2006
This thesis is dedicated to:

My beloved husband, Azman Zainal for his unfailing love, support and sacrifice,
My parents, Hj Othman Salim and Hjh Zahrah Awang for their understanding,
prayer and encouragement, and
My wonderful children, Hilmi and Aikha, the pride and joy of my life.

Without all of you, I would not be able to pursue my studies up to this level.
Abstract of thesis presented to the Senate of Universiti Putra Malaysia in partial fulfillment of the requirement for the degree of Master of Science

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June 2006

Chairman : Professor Zainal Abidin Mohamed, PhD
Faculty : Graduate School of Management

Awareness on the importance of quality and having a quality management system to improve organizational performance has been emphasized through the work of many quality proponents. There is a growing awareness and acceptance of ISO 9000 quality management standards for establishing quality management system among organizations in Malaysia. The number of certified organizations increased from 2022 in 2003 to 3249 in 2005 (as at June 2005) and in 2004 there was an annual increase of 51.2% compared to 2003. The implementation and maintenance of a quality management system is important to satisfy customers’ requirements and to ensure there is continuous improvement of the system.

This study measures the influence of various factors such as organizational factors, motivational factors in obtaining certification and the perceived benefits on the ease of implementing and maintaining ISO 9001:2000 quality management system. The influence of motivation on perceived benefits was also examined.

The survey was conducted on organizations that had obtained their ISO 9000 certification and were continuing with the implementation of the system with
various certification bodies at the time of the study. The scope of this research covered organizations in all economic sectors and industries listed in the statistics on ISO 9000 certification by the Department of Standards Malaysia. Hypotheses were tested using ANOVA in the Statistical Package for Social Solutions (SPSS) version 13.0 and path analysis in the LISREL 8.72.

The findings revealed that corrective and preventive actions are among the critical issues or factors in the maintenance of an ISO 9000 system. Results also showed that there are significant differences in ease of implementation among the industrial sectors. The path analysis showed that there is a positive relationship between internally perceived benefits and the ease of implementation and maintenance. It was also established that motivation is a significant predictor which influences the benefits gained.

It was also revealed that the motivation for obtaining ISO 9001:2000 certifications seemed to be more internally-driven. Large percentage of respondents agreed that motivation comes from internal factors such as the need to improve internal operation, products, system and processes. As in many previous studies, the most important benefits were mostly from internal factors such as improved internal procedures or documentation and increase in quality awareness among employees. ISO 9000 has provided a platform for a consistent organization-wide approach to continual improvement.
Abstrak thesis yang dikemukakan kepada Senat Universiti Putra Malaysia sebagai memenuhi sebahagian daripada keperluan untuk ijazah Master Sains

FAKTOR-FAKTOR YANG MEMPENGARUHI PERLAKSANAAN DAN PENYELENGGARAAN STANDARD ISO 9001:2000 DI KALANGAN ORGANISASI TERPILIH DI MALAYSIA

Oleh

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Pengumpulan data dan analisa yang dijalankan meliputi organisasi yang telah memperolehi persijilan ISO 9000 dan masih terus dengan perlaksanaan dengan badan persijilan semasa kajian. Skop organisasi yang dimasukkan dalam kajian ini meliputi semua sektor ekonomi dan industri yang disenaraikan dalam statistik persijilan ISO 9000 oleh Jabatan Standard Malaysia. Hipotesis diuji menggunakan ANOVA dalam Statistical Package for Social Solutions (SPSS) versi 13.0 dan kaedah path analysis dalam LISREL 8.72.


ACKNOWLEDGEMENTS

ALHAMDULILLAH, thank you ALLAH Almighty for giving me inner strength, mercy and gracious answers to my prayers.

I would like to express my utmost gratitude and sincere appreciation to my supervisor, Prof. Zainal Abidin Mohamed, the Chairman of the supervisory committee for his persistence and guidance throughout my entire studies. I am also indebted to Dr. Murali Sambasivan, the committee member who has shown his tireless efforts in giving invaluable comments, assistance and critical insights which have contributed a lot to the accomplishment of this thesis which otherwise would not have been completed.

Thank you Nor Adwa Sulaiman, my best friend who is like my own sister, for always being there for me when my life was upside down and helped me through this arduous process in completing this thesis with her strong words of inspiration, motivation and pull me up with your encouragement which otherwise I would have quit.

My sincere gratitude to my two seniors in National Productivity Corporation, En. Mohd Razali Hussain, the expert and practitioner of ISO 9000 for his constructive comments and guidance to improve the content of this thesis. I am indebted for his willingness to give critical suggestions and commitment in providing technical inputs, reviewing, editing and criticizing my work constructively which has helped me to produce this piece of quality work. To another senior, Mr. Fred Lew, who helped me in the editorial and suggestion for improvement in my thesis. Thank you for taking up much of your time even when both of you were so busy with your work.

Last but not least, my heartfelt love goes to a special person in my life; my husband, and my family for their understanding, source of strength, and unconditional love in countless ways without which, I would probably not be able to endure the challenges and stress encountered in the completion of this thesis.
I certify that an Examination Committee met on 26th April 2006 to conduct the final examination of Roziana Binti Othman on her Master of Science thesis entitled “Factors Influencing The Implementation and Maintenance of ISO 9001:2000 Standard in Selected Organisations in Malaysia” in accordance with Universiti Pertanian Malaysia (Higher Degree) Act 1980 and Universiti Pertanian Malaysia (Higher Degree) Regulations 1981. The Committee recommends that the candidate be awarded the relevant degree. Members of the Examination Committee are as follows:

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Date: 12 Oktobre 2006
DECLARATION

I hereby declare that the thesis is based on my original work except for quotations and citations which have been duly acknowledged. I also declare that it has not been previously or concurrently submitted for any other degree at UPM or other institutions.

ROZIANA BINTI HJ. OTHMAN

Date: 25/6/2006
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<td>QMS</td>
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<td>MSCI</td>
<td>Malaysia Standard Industrial Classification</td>
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<td>ISO</td>
<td>International Organization for Standardization</td>
<td></td>
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<tr>
<td>TQM</td>
<td>Total Quality Management</td>
<td></td>
</tr>
<tr>
<td>CFA</td>
<td>Confirmatory Factor Analysis</td>
<td></td>
</tr>
<tr>
<td>GFI</td>
<td>Goodness-of-Fit Index</td>
<td></td>
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<tr>
<td>ANOVA</td>
<td>Analysis of Variance</td>
<td></td>
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<tr>
<td>SEM</td>
<td>Structural Equation Model</td>
<td></td>
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<tr>
<td>RMSEA</td>
<td>Root Mean Square Error of Approximation</td>
<td></td>
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<td>SPSS</td>
<td>Statistical Package for Social Solutions</td>
<td></td>
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CHAPTER 1

INTRODUCTION

1.0 Introduction

Chapter 1 covers an overview of the whole study. It addresses the importance for the companies to have their quality management systems certified to ISO 9000 Standard. This chapter is organized as follows:

a. background of the study
b. problem statement
c. research question
d. objectives of the study
e. justifications of the study
f. contributions of the study
g. scope of research

1.1 Background of the Study

The awareness and importance of quality and having quality management system to organizational performance has been emphasized through the work of many quality proponents (Crosby, 1979; Juran, 1982; Deming, 1986). The ISO 9000 family of quality management standards and guidelines by the International Organization for Standardization (ISO) has earned a global reputation as the basis for establishing quality management system. Various empirical research evidences indicate an
increase in number of companies obtaining certification on their quality management system to the ISO 9000 standards. This shows that the interest in getting certification is growing and companies are becoming more aware of the needs to be certified. Indeed the number of certified companies in Malaysia has recorded an increase to 3249 companies in 2005 (as at June, 2005) compared to 3058 companies in 2004 and 2022 companies in 2003. The increasing number of certified companies with ISO 9001:2000 according to sectors is shown in Table 1.1:

Table 1.1: Summary on Quality Management System Certification (QMS) Issued by Department of Standards Malaysia (DSM) Accredited Certification Bodies (cumulative figures read horizontally)

<table>
<thead>
<tr>
<th>Sector</th>
<th>2003</th>
<th>2004</th>
<th>2005 (June)</th>
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<tr>
<td>1 Agriculture, fishing</td>
<td>2</td>
<td>5</td>
<td>8</td>
</tr>
<tr>
<td>2 Mining and quarrying</td>
<td>18</td>
<td>24</td>
<td>24</td>
</tr>
<tr>
<td>3 Manufacturing</td>
<td>1320</td>
<td>1728</td>
<td>1823</td>
</tr>
<tr>
<td>4 Utility</td>
<td>39</td>
<td>453</td>
<td>487</td>
</tr>
<tr>
<td>5 Construction</td>
<td>123</td>
<td>316</td>
<td>338</td>
</tr>
<tr>
<td>6 Commerce/Trade</td>
<td>92</td>
<td>56</td>
<td>59</td>
</tr>
<tr>
<td>7 Transport</td>
<td>77</td>
<td>259</td>
<td>273</td>
</tr>
<tr>
<td>8 Finance</td>
<td>49</td>
<td>98</td>
<td>103</td>
</tr>
<tr>
<td>9 Government Services</td>
<td>273</td>
<td>46</td>
<td>48</td>
</tr>
<tr>
<td>10 Other Services</td>
<td>29</td>
<td>73</td>
<td>86</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>2022</strong></td>
<td><strong>3058</strong></td>
<td><strong>3249</strong></td>
</tr>
</tbody>
</table>

What brings most companies towards getting certification has been discussed by many researchers. Findings from most literatures revealed that the motives of companies for obtaining certification are more externally-driven such as gaining market share, improve image, competing in Europe and customer pressure (Llopis & Tari, 2003, Marshall, 2002, Santos & Escanciano, 2002, McAdam & Canning, 2001, Augustyn & Pheby, 2000, Salleh & Goh, 2001, Fuentes et al., 2000). In contrast, there are less number of literatures to show the motives for obtaining certification are from internal reasons such as improvement in internal operations and product
quality, control processes and continuous improvement (Poksinska et al., 2003, Gotzamani and Tsiorras, 2002, McAdam and Jackson, 2002, and Terziovski et al., 2002).

Companies obtained ISO 9000 certification in anticipation that it will bring significant benefits to them. It has been proven by a number of empirical evidences that the benefits reaped were mostly contributed towards operation improvement and efficiency (Santos and Escanciano, 2002, Gotzamani and Tsiotras, 2002, Salleh and Goh, 2001, and, Withers and Ebrahimpour, 2001). Recent study by Magd et al., 2003 have examined the impact of ISO 9000 implementation on organizational performance and suggested that the adoption of ISO 9000 has been justified in terms of many benefits associated with its implementation.

ISO 9000 certification has become a basic competitive prerequisite for many companies doing business in today’s global economy (Delpha, 2002). According to Santos and Escanciano (2002), future research will be necessary to analyze the effects of an ISO 9001:2000 so as to determine whether substantial improvements of a commercial nature have been experienced. Although the study found that the benefits gained was on internal efficiency, there is a tendency that firms are more likely to be geared towards gaining benefits of external nature such as improving their market, image and competitive position as these benefits contribute most to the organization’s approval of the ISO 9000 certification. Nwankwo (2000) supported that ISO 9000 standards leads company to a continuous progression towards greater professionalism in its approach to maintain successful market positions.
It is also believed that the present version of the standard (ISO 9001:2000) would overcome the limitations and disadvantages experienced using the earlier version of the standard (ISO 9000:1994) in order to improve competitive position of the certified company in the market. Santos and Escanciano (2002), however cited that there is no empirical evidence to establish whether the most market-oriented certified companies obtain better results than those companies with lesser degree of market-orientation.

Terziovski et al. (2002) concluded in their study that the emerging question is whether the new ISO 9001:2000 standard will over time capture and meet the conformance and performance requirements of the organization as part of its continuous improvement strategy. It is also predicted that this would be the key determinant of whether the companies would reject or accept the ISO 9000 certification in the future. Terziovski et al. (2002) emphasized that rapid process improvement can be facilitated through integrated system with process improvement derived from programmes such as Six Sigma and cycle-time reduction using lean thinking.

Another interesting issue that has been deliberated in many of the research works is whether the benefits or advantages reaped by the companies are tangible. From the literatures, it shows that a number of explanations and definitions were given by the researcher with regards to what is meant by the benefits being tangible. Gotzamani and Tsiotras (2002) showed that motives for true quality improvement will result with improvement in operations and product’s quality. Stevenson and Barnes (2001), found that the evidence to prove that real benefits from achieving
certification can be realized in a long term is on an increasing trend. Casadesus and Gimenez (2000) believed that the new ISO 9001:2000 will result in tangible improvement as its structure focus on continual improvement and measurement of customer satisfaction. In addition, findings from Salleh and Goh (2001) showed that internally-driven motives are perceived to be greater beneficial outcomes of the implementation of ISO 9000 quality management system.

Contrary to the earlier findings, Najmi and Kehoe (2001) cited that many companies which have obtained ISO 9000 certification eventually experienced a diminishing business benefits. Their findings show that those companies who did not maintain and sustain its quality system will only experience illusion benefits. Casadesus and Gimenez (2000), found that benefits gained by most companies are more focused on commercial value and quality image and did not relate to the real improvement in quality. The benefits gained were also not real because of lack of improvements in the companies after a given period of time. Gotzamani and Tsiotras (2002) in their study revealed that many companies can get certified without having to prove any business results. It was also found that the ISO 9000 standards lead to an inappropriate emphasis which is bureaucratic or more paperwork rather than quality improvement.

Another important issue that has been brought forward by many researchers was the difficulties encountered before, during and after the implementation of ISO 9000 activities. Findings from Santos & Escanciano, 2002, Escanciano et al., 2001, Dick 2000, and Rissanen, 2000, revealed that the earlier version of the standard (ISO 9000:1994) has created some problems with regards to extra burden and work due to
excessive paperwork, documentation and bureaucracy. Major problem faced by
many organizations was related to the human resource aspects such as resistance to
change, employee resentment, lack of understanding and information on technical
matter, inexperience and fear (Awan and Bhatti, 2003, Amar and Mohd Zain, 2002,
The levels of difficulties in implementation were due to the incapability of the
companies in fulfilling the ISO standard requirements fully (Salleh and Goh, 2001
and Chin et al., 2000).

However, Fuentes et al. (2000) and, Lo and Humphreys (2000) found that most of
the companies studied have difficulty in acquiring right consultant from external
sources. Besides facing with limited resources, it was found that time and costs are
another issue that has been the obstacles in the implementation of ISO 9000. It was
further explored that top management support and involvement are vital to the
success in getting certification and ISO implementation (Withers & Ebrahimpour,
2001, Al-Khalifa & Aspinwall, 2000 and Fuentes et al., 2000). Despite the criticism
of the standard, the present ISO 9000 standards have undergone revision and it is
believed that the certification is worth the difficulties experienced (Dick, 2000 and
Rissanen, 2000).

Therefore, this study focused on identifying the organizational impediments or
difficulties faced by the certified companies in implementing the quality
management system according to ISO 9000 standards and establishing relationships
with the motives of certification and the benefits gained by the certified companies.
1.2 Problem Statement

The 1994 version was criticized among other things for putting too much stress on documentation and records. Findings from Santos & Escanciano, 2002, Escanciano et al., 2001, Dick 2000, and Rissanen, 2000, revealed that the earlier version of the standard (ISO 9000:1994) has created some problems with regards to extra burden and work due to excessive paperwork, documentation and bureaucracy. The levels of difficulties in implementation were due to the incapability of the companies in fulfilling the ISO standard requirements fully (Salleh and Goh, 2001 and Chin et al., 2000). To overcome these problems, the new standard places far more emphasis on processes and results. However, this raised a question, "Will the improvements to the standard really help to reduce variability in its implementation and maintenance and make the implementation easier?"

Past studies has shown that the researchers look at factors such as motivational factors (Marshall, 2002, Singles et al., 2001, Staines, 2000, Brown et al., 1998), perceived benefits factors (Lee et al., 1999, Koo et al., 1999, Leung and Chan, 1999) and implementation factors (Tang and Kam, 1999, Lipovatz et al., 1999) as separate issues and there were no effort to analyze these 3 variables simultaneously and study the relationships. There were few attempts by Poksinska (2002) to analyze the relationship between motivation and benefits, and by Salleh and Goh (2001) to see the links between reason seeking certification with degree of perceived difficulty and links between organizational factors (European market, ownership and paid up capital) with degree of perceived difficulty. Further to this, due to limited literatures