

TQM PRACTICES OF MANUFACTURING FIRMS : AN EMPIRICAL STUDY  
ON LABOR PRODUCTIVITY

by

AZIZ BIN KADER

SCHOOL OF MANAGEMENT  
UNIVERSITI SAINS MALAYSIA  
11800 MINDEN, PENANG.

Research report submitted in partial fulfillment of the requirements for the degree of  
Master of Business Administration

May 1997

## ACKNOWLEDGMENT

First and foremost I would like to thank my supervisor, Dr. G. V. Shenoy for his advice and support in completing this project research.

This research has been made possible through co-operation and support of management of 59 manufacturing firms - my thanks to all of them.

I would also like to thank all the lecturers, staff of the School of Management and also not forgetting my own staff and management of Seagate Technology, Penang.

Last but not least, my wife Sajidah Begum Mohamed Muhaiyadeen, who has been helpful and tolerant throughout the completion of my MBA in Universiti Sains Malaysia. Her support, tolerance and cooperation are gratefully acknowledged.

## TABLE OF CONTENTS

TITLE	i
ACKNOWLEDGEMENT	ii
TABLE OF CONTENTS	iii
LIST OF FIGURE AND TABLES	v
ABSTRAK	vi
ABSTRACT	vii
Chapter 1: <b>INTRODUCTION</b>	1
1.1 International Perspective Of TQM	2
1.2 Malaysian Manufacturing Firm's Perspective Of TQM	3
1.3 Trends In Productivity Of Malaysia	5
1.4 Purpose Of The Study	6
1.5 Critical Factors	6
Chapter 2: <b>LITERATURE REVIEW</b>	10
2.1 Background	10
2.2 Theoretical Framework	16
Chapter 3: <b>RESEARCH METHODOLOGY AND MEASUREMENT</b>	18
3.1 Research Hypotheses	19
3.2 Measurement of Critical Factors	21
3.3 Population	26
3.3.1 Sampling plan	26
Chapter 4: <b>DATA ANALYSIS AND RESULTS</b>	28
4.1 Characteristics of the Sample	28

4.2	Test of Reliability	29
4.3	Testing the Research Hypotheses	30
4.4	Analysis with t-test and One-way ANOVA	31
4.4.1	Use of t-test	32
4.4.2	Use of One-way ANOVA	34
4.5	Interpretation of the Results	40
4.5.1	Top management and quality policy	40
4.5.2	Role of the quality department	41
4.5.3	Training	42
4.5.4	Product design	41
4.5.5	Vendor quality management	42
4.5.6	Process control plan or process design	43
4.5.7	Quality data	43
4.5.8	Feedback and employee involvement	44
Chapter 5:	<b>MANAGERIAL IMPLICATIONS AND CONCLUSION</b>	45
5.1	Managerial Implications	45
5.2	Limitations of the Study	46
5.3	Suggestions for Future Study	47
5.4	Conclusion	47
	REFERENCES	50
APPENDIX 1:	SAMPLE QUESTIONNAIRE	52

## LIST OF FIGURES AND TABLES

Figure	1.1	Productivity Growth	6
Table	2.1	Organizational Requirement for Effective TQM practices	15
Figure	2.1	A schematic Model of the Relationship between TQM Factors and the Effectiveness Dimensions	17
Table	4.1	Organization information	29
Table	4.2	Reliability of Factors Affecting Productivity	29
Table	4.3	Pearson Coefficient of Correlation for Productivity	30
Table	4.4	Multiple Regression Analysis for Productivity	31
Table	4.5	t-test Results Malaysian Owned Companies and Foreign Owned Companies	32
Table	4.6	t-test Results ISO 9000 Certified and Non-certified Companies	33
Table	4.7 - 4.14	One-way ANOVA - Type of Industries	34 - 36
Table	4.15 - 4.22	One-way ANOVA - Size of the Firms	36 - 39

## ABSTRAK

Kajian ini berfokus kepada faktor-faktor kritikal di dalam pengurusan kualiti dan perhubungannya dengan produktiviti (buruh) di organisasi pengeluaran di Malaysia. Lapan faktor kritikal di dalam pengurusan berkualiti telah dipilih untuk tujuan kajian ini adalah: peranan pengurusan atasan dan polisi kualiti, peranan jabatan kawalan mutu, latihan, rekabentuk produk / perhidmatan, pengurusan kualiti pembekal, pengurusan pemprosesan / prosedur operasi, mutu maklumat dan pelaporannya, dan hubungan pekerja dalam mencapai tahap yang tinggi dalam produktiviti di organisasi itu.

Senarai firma daripada sampel telah dibahagikan kepada sub-populasi seperti berikut: elektronik, berkaitan kerja logam dan berkaitan pemprosesan kimia. Pengurus daripada 59 organisasi yang berkaitan dengan pengeluaran dan pengilangan menjadi responden di dalam kajian ini.

Lapan faktor utama dalam pengurusan kualiti secara menyeluruh (TQM) mempunyai pertalian yang rapat dengan petunjuk produktiviti buruh. Walau bagaimanapun, industri yang berkaitan dengan pembuatan kimia, terdapat dua faktor utama - Peranan Jabatan Kawalan Mutu dan Hubungan Pekerja, yang tidak menunjukkan perkaitan yang ketara dengan petunjuk produktiviti.

## ABSTRACT

The focus of this study is to find the relationship, if any, between the critical factors of quality management and (labor) productivity in manufacturing organizations. The eight critical factors of quality identified for this study are role of top management and quality policy, role of quality department, training, product /service design, supplier quality management, process management/operation procedures, quality data and reporting, and employee relations in order to achieve high productivity in organizations.

The list of manufacturing firms from the sampling frame is segmented according to electronic, metal related and chemical related organizations as sub-populations. Managers of 59 manufacturing organizations are considered as respondents in this study.

The eight critical factors of TQM, have significant association with labor productivity index. However, in the case of Chemical industry the two critical factors - Role of Quality Department and Employee Relation, the degree of association with the productivity index is not significant.