

**MEDIATING EFFECT OF MANAGEMENT
INFORMATION SYSTEM ON THE RELATIONSHIP OF
WAREHOUSE ATTRIBUTES AND ITS EFFICIENCY IN
MALAYSIA'S SMALL AND MEDIUM ENTERPRISES**

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**DOCTOR OF BUSINESS ADMINISTRATION
UNIVERSITI UTARA MALAYSIA**

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**MEDIATING EFFECT OF MANAGEMENT INFORMATION SYSTEM ON
THE RELATIONSHIP OF WAREHOUSE ATTRIBUTES AND ITS
EFFICIENCY IN MALAYSIA'S SMALL AND MEDIUM ENTERPRISES**

By

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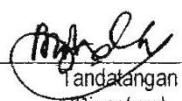
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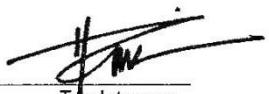
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ABSTRACT

This dissertation studies the relationship between the influential warehouse efficiency and warehousing attributes (operations, Human Capital Management or HCM, and layout), applied by the Small-Medium Enterprises (SMEs) manufacturing firms in Malaysia. These perspective research objectives are to determine whether there is any relationship between the warehousing attributes, warehouse efficiency, and warehousing Management Information System (MIS). It also examines the mediating effect of warehousing MIS in the relationship between warehousing attributes and warehouse efficiency. A quantitative method approach is applied in this research methodology. Nine hypotheses have been proposed for the research with data collected from the survey of 182 SME manufacturing firm owners in Malaysia as listed in the SME Directory 2009. The findings indicate that the warehousing MIS significantly mediates and has an effect on the warehousing attributes and their relationship with warehouse efficiency in the SME manufacturing firms. Theoretically, the research contributes to the growth development of the warehouse efficiency theories. Practically it could facilitate the owners or warehouse managers of the manufacturing firms in making the right management decisions regarding warehousing. For future research, the study recommends further exploration into the areas of security, environment, safety and health, waste management, and integrated system (International Standards Organisation or better known as ISO 9000, ISO 14000, and ISO 18000). As a conclusion, this study provides new knowledge and important insights of warehousing attributes that will benefit manufacturing firms and other related industries, particularly for SMEs in Malaysia.

Keywords: Warehouse Efficiency, Warehousing Attributes, Management Information System (MIS) and Manufacturing SMEs.

ABSTRAK

Disertasi ini mengkaji mengenai hubungan antara keberkesanan pergudangan yang berpengaruh dan atribusi pergudangan (operasi, Pengurusan Modal Insan atau PMI dan susun atur), yang digunakan oleh Perusahaan Kecil dan Sederhana (PKS) di Malaysia. Perspektif penyelidikan objektif ini adalah untuk menentukan adanya sebarang hubungan antara atribusi pergudangan, keberkesanan pergudangan dan Pengurusan Sistem Maklumat (PSI) pergudangan. Penyelidikan ini juga meneliti kesan pengantara PSI pergudangan antara hubungannya dengan atribusi pergudangan dan keberkesanan pergudangan. Kaedah kuantitatif disampaikan dalam kaedah penyelidikan ini. Sembilan hipotesis dicadangkan untuk penyelidikan ini dengan data dikutip daripada kajian ke atas tuan punya 182 syarikat pengilangan PKS di Malaysia yang disenaraikan dalam Direktori PKS 2009. Hasil kajian menunjukkan keputusan yang signifikan dalam mengantara kesan PSI pergudangan kepada atribusi pergudangan dan hubungan keberkesanan pergudangan dalam syarikat pengilangan PKS. Secara teorinya, sumbangan penyelidikan ini adalah perkembangan dalam pembangunan teori keberkesanan pergudangan. Secara praktik, ia memudahkan pemilik atau pengurus pergudangan syarikat pengilangan membuat keputusan yang betul dalam pengurusan. Bagi penyelidikan akan datang, kajian mendalam boleh dibuat dalam bidang keselamatan, alam sekitar, keselamatan dan kesihatan, pengurusan sisa, dan sistem integrasi (Pertubuhan Penstandardan Antarabangsa atau PPA, yang lebih dikenali sebagai ISO 9000, ISO 14000, dan ISO 18000). Kesimpulannya, kajian ini membekalkan pengetahuan baru dan penting pengertiannya yang akan memberikan faedah kepada syarikat pengilangan dan industri lain yang berkaitan, terutamanya untuk PKS di Malaysia.

Katakunci: Keberkesanan Pergudangan, Atribusi Pergudangan, Perusahaan Kecil dan Sederhana (PKS) dan Pengilangan PKS.

DEDICATION

Aisyah.

Thank you for your patience,
kind understanding,
unwavering love and devotion
during my difficult times.

Atiqah & Aleea.

Remember.

The deeds of your mother
are immeasurable.

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TABLE OF CONTENTS

| | |
|--|---------------|
| TITLE PAGE | i |
| CERTIFICATION OF DISSERTATION | ii |
| PERMISSION TO USE | iv |
| ABSTRACT | v |
| ABSTRAK | vi |
| DEDICATION | vii |
| ACKNOWLEDGEMENTS | viii |
| TABLE OF CONTENTS | ix |
| LIST OF TABLES | xiii |
| LIST OF FIGURES | xiv |
| LIST OF APPENDICES | xv |
| ABBREVIATIONS | xvi |
| CHAPTER ONE: INTRODUCTION | 1 |
| 1.0 BACKGROUND OF THE STUDY | 1 |
| 1.1 WAREHOUSING BY COMPETITIVENESS | 2 |
| 1.1.1 Warehousing as a Dedicated Function | 4 |
| 1.1.2 Operations Management and Warehousing Processes | 6 |
| 1.1.3 Rationale of Study | 11 |
| 1.1.4 Warehousing in Malaysian SMEs | 12 |
| 1.2 PROBLEM STATEMENT | 16 |
| 1.3 RESEARCH QUESTIONS | 20 |
| 1.4 RESEARCH OBJECTIVES | 20 |
| 1.5 OVERVIEW OF THEORETICAL FRAMEWORK | 21 |
| 1.6 SIGNIFICANCE OF THE STUDY | 22 |
| 1.7 SCOPE AND LIMITATION OF THE STUDY | 23 |
| 1.8 ORGANISATION OF THE DISSERTATION | 26 |
| CHAPTER TWO: LITERATURE REVIEW, THEORETICAL FRAMEWORK, AND HYPOTHESES | 27 |
| 2.0 INTRODUCTION | 27 |
| 2.1 BACKGROUND OF MALAYSIAN SMEs | 28 |
| 2.1.1 SME Manufacturing Performance | 30 |
| 2.1.2 SME Employment Performance | 30 |
| 2.1.3 Malaysia SMEs Current and Future Challenges | 31 |
| 2.2 OVERVIEW ON WAREHOUSING | 32 |
| 2.2.1 Warehouse Relationships with Efficiency | 36 |
| 2.2.2 Warehousing Evolution | 37 |
| 2.2.3 Theories Supporting Warehousing | 40 |
| 2.3 WAREHOUSING OPERATIONS | 42 |
| 2.3.1 Warehousing Operations Relationships with Efficiency | 47 |
| 2.3.2 Theories Supporting Warehousing Operation | 49 |
| 2.4 WAREHOUSING HUMAN CAPITAL MANAGEMENT (HCM) | 52 |
| 2.4.1 Warehousing HCM Relationships with Efficiency | 55 |
| 2.4.2 Theories Supporting Warehousing HCM | 58 |
| 2.5 WAREHOUSING LAYOUT | 58 |

| | | |
|--|---|-----------|
| 2.5.1 | Warehousing Layout Relationships with Efficiency | 61 |
| 2.5.2 | Theories Supporting Warehousing Layout | 63 |
| 2.6 | WAREHOUSING MANAGEMENT INFORMATION SYSTEM (MIS) | 64 |
| 2.6.1 | Warehousing MIS Relationships with Warehousing Operations | 66 |
| 2.6.2 | Warehousing MIS Relationships with Warehousing HCM | 67 |
| 2.6.3 | Warehousing MIS Relationships with Warehousing Layout | 68 |
| 2.6.4 | Warehousing MIS Relationships with Efficiency | 70 |
| 2.6.5 | Theories Supporting Warehousing MIS | 71 |
| 2.7 | WAREHOUSE EFFICIENCY | 73 |
| 2.7.1 | Warehouse Efficiency with Performance | 74 |
| 2.7.2 | Theories Supporting Warehouse Efficiency | 77 |
| 2.8 | UNDERPINNING THEORIES | 79 |
| 2.8.1 | Force Field Theory and 3-Steps Change Model | 79 |
| 2.9 | THEORETICAL FRAMEWORK AND HYPOTHESES | 88 |
| 2.9.1 | Theoretical Framework | 89 |
| 2.9.2 | Relationships among Warehousing Attributes | 90 |
| 2.9.3 | Development of Hypotheses | 94 |
| 2.10 | CHAPTER SUMMARY | 96 |
| CHAPTER THREE: RESEARCH METHODOLOGY | | 99 |
| 3.0 | INTRODUCTION | 99 |
| 3.1 | RESEARCH DESIGN | 100 |
| 3.2 | POPULATION | 101 |
| 3.2.1 | Population of Respondents | 101 |
| 3.2.2 | Sample Size | 103 |
| 3.3 | RESEARCH INSTRUMENT AND CONSTRUCTION | 105 |
| 3.4 | DATA GATHERING AND ANALYSIS | 107 |
| 3.4.1 | Data Collection Procedure | 107 |
| 3.4.2 | Data Analysis Procedure | 108 |
| 3.4.3 | Descriptive Analysis | 109 |
| 3.4.4 | Non-Response Bias | 110 |
| 3.4.5 | Preliminary Examination of Data | 111 |
| 3.4.6 | Assessment of Raw Data | 111 |
| 3.4.7 | Assessment of Normality | 113 |
| 3.4.8 | Multicollinearity | 115 |
| 3.5 | RELIABILITY AND VALIDITY | 116 |
| 3.5.1 | Reliability | 116 |
| 3.5.2 | Pre-Test and Post Reliability of Instruments | 117 |
| 3.5.3 | Validity | 119 |
| 3.6 | CORRELATION ANALYSIS | 122 |
| 3.7 | MULTIPLE REGRESSION ANALYSIS | 123 |
| 3.8 | SOBEL TEST | 124 |
| 3.9 | CHAPTER SUMMARY | 127 |

| | |
|---|------------|
| CHAPTER FOUR: FINDINGS AND DISCUSSIONS | 129 |
| 4.0 OVERVIEW | 129 |
| 4.1 PROFILE OF RESPONDING FIRMS IN DESCRIPTIVE ANALYSIS | 129 |
| 4.1.1 Respondents' Characteristics | 129 |
| 4.1.2 Profile of SME Owners | 131 |
| 4.2 NON-RESPONSE BIAS | 134 |
| 4.3 PEARSON CORRELATION | 136 |
| 4.4 MULTIPLE LINEAR REGRESSIONS | 139 |
| 4.4.1 Results and Analysis of the Variables | 141 |
| 4.5 TESTING OF HYPOTHESES | 142 |
| 4.5.1 Relationship between Warehousing Operations (AWO) and Warehouse Efficiency (AWE) | 142 |
| 4.5.2 Relationship between Warehousing Operations (AWO) and Warehousing MIS (AMIS) | 143 |
| 4.5.3 Relationship between Warehousing Operations (AWO), Warehousing MIS (AMIS), and Warehouse Efficiency (AWE) | 144 |
| 4.5.4 Relationship between Warehousing HCM (AHCM) and Warehouse Efficiency (AWE) | 147 |
| 4.5.5 Relationship between Warehousing HCM (AHCM) and Warehousing MIS (AMIS) | 148 |
| 4.5.6 Relationship between Warehousing HCM (AHCM), Warehousing MIS (AMIS), and Warehouse Efficiency (AWE) | 149 |
| 4.5.7 Relationship between Warehousing Layout (AL) and Warehouse Efficiency (AWE) | 152 |
| 4.5.8 Relationship between Warehousing Layout (AL) and Warehousing MIS (AMIS) | 153 |
| 4.5.9 Relationship between Warehousing Layout (AL), Warehousing MIS (AMIS), and Warehouse Efficiency (AWE) | 154 |
| 4.5.10 Summary of the Hypotheses Results | 157 |
| 4.6 CHAPTER SUMMARY | 158 |
| CHAPTER FIVE: CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS | 160 |
| 5.0 INTRODUCTION | 160 |
| 5.1 OVERVIEW OF THE STUDY | 160 |
| 5.2 CONCLUSION OVERVIEW | 162 |
| 5.2.1 Distribution of Respondents | 162 |
| 5.2.2 Distribution of Warehouse Efficiency (AWE) | 163 |
| 5.2.3 Discussions of Hypothesis Findings | 164 |
| 5.3 IMPLICATIONS OF STUDY | 168 |
| 5.3.1 Managerial and Firm Performance Implications | 170 |
| 5.3.1.1 Relationship between Warehousing Attributes and Warehouse Efficiency | 170 |
| 5.3.1.2 Mediating Effect of Warehousing MIS in the Relationship between Warehousing Attributes and Warehouse Efficiency | 175 |
| 5.3.1.3 Overall Implications on Managerial Implications and Firms Performance | 177 |

| | | |
|-------|-------------------------------------|-----|
| 5.3.2 | THEORETICAL IMPLICATIONS | 179 |
| 5.4 | LIMITATIONS OF THE STUDY | 181 |
| 5.5 | RECOMMENDATIONS FOR FUTURE RESEARCH | 182 |
| 5.6 | CONTRIBUTIONS TO KNOWLEDGE | 183 |
| 5.7 | CONCLUSION | 184 |
| 6.0 | REFERENCES | 187 |

LIST OF TABLES

| Table | Page |
|--|------|
| Table 1.1. Activities of Logistics Service Providers | 8 |
| Table 1.2. Definitions of SMEs in Malaysia | 25 |
| Table 2.1. Malaysia SMEs by Business Sector | 28 |
| Table 2.2. Distribution of SMEs in the Manufacturing Sector in 2003 | 29 |
| Table 2.3. Warehouse Issues and Performance Measurement | 75 |
| Table 3.1. The Percentage of Usable Respondents | 104 |
| Table 3.2. Cronbach α Coefficient of Reliability (Pre- and Post-Test Analysis) | 119 |
| Table 3.3. Investigating Validity: Results of KMO Measure of Sampling Adequacy and Bartlett's Test of Sphericity | 122 |
| Table 4.1. Summary of Respondent Characteristics | 131 |
| Table 4.2. Summary of Profile of SME Owners | 133 |
| Table 4.3. Levene's Test on Company Size and Gender for Non-Response Bias | 135 |
| Table 4.4. ANOVA Homogeneity of Variances Test in Non-Response Bias | 135 |
| Table 4.5. Summary of Pearson correlation results | 136 |
| Table 4.6. Measurement of the Degree of AMIS Influence in the Relationship between AWO and AWE | 145 |
| Table 4.7. Sobel Test Output Measuring the Mediating Effect of AMIS in the Relationship between AWO and AWE | 146 |
| Table 4.8. Measurement of the Degree of AMIS Influence in the Relationship between AHCM and AWE | 150 |
| Table 4.9. Sobel Test Output Measuring the Mediating Effect of AMIS in the Relationship between AHCM and AWE | 151 |
| Table 4.10. Measurement of the Degree of AMIS Influence in the Relationship between AL and AWE | 155 |
| Table 4.11. Sobel Test output Measuring the Mediating Effect of AMIS in the Relationship between AL and AWE | 156 |
| Table 4.12. Summary of Hypotheses Results | 157 |

LIST OF FIGURES

| Figure | Page |
|--|------|
| Figure 1.1. Theoretical Framework. | 22 |
| Figure 2.1. Evolution of logistics within the supply chain. | 38 |
| Figure 2.2. Framework for warehouse design and operation problem flow. | 43 |
| Figure 2.3. Warehousing layout capacity setting and information process flow. | 60 |
| Figure 2.4. Framework of warehousing layout design 14 steps process flow. | 60 |
| Figure 2.5. The framework for warehouse excellence. | 76 |
| Figure 2.6. Force Field Theory Model. | 81 |
| Figure 2.7. The 3-Steps Change Model. | 83 |
| Figure 2.8. Theoretical Framework for the research. | 90 |
| Figure 3.1. Histogram graph and normal P-P Plot between dependent variable warehouse efficiency (AWE) and warehousing variables. | 115 |
| Figure 3.2. The process of mediation. | 126 |
| Figure 3.3. The steps involved in the mediation process. | 126 |
| Figure 4.1. Relationship of tested variables (AWO and AWE) after mediation. | 142 |
| Figure 4.2. Relationship of tested variables (AWO and AMIS) after mediation. | 143 |
| Figure 4.3. Relationship of tested variables (AWO, AMIS, and AWE) after mediation. | 146 |
| Figure 4.4. Relationship of tested variables (AHCM and AWE) after mediation. | 147 |
| Figure 4.5. Relationship of tested variables (AHCM and AMIS) after mediation. | 148 |
| Figure 4.6. Relationship of tested variables (AHCM, AMIS and AWE) after mediation. | 151 |
| Figure 4.7. Relationship of tested variables (AL and AWE) after mediation. | 152 |
| Figure 4.8. Relationship of tested variables (AL and AMIS) after mediation. | 153 |
| Figure 4.9. Relationship of tested variables (AL, AMIS and AWE) after mediation. | 156 |

LIST OF APPENDICES

| | Page |
|---|------|
| APPENDIX | |
| APPENDIX 1:Linkages Between Research Questions, Research Objectives and Hypotheses | 201 |
| APPENDIX 2: Questionnaire | 203 |
| APPENDIX 3: Reliability | 210 |
| APPENDIX 4: Factor Analysis | 211 |
| APPENDIX 5: Multiple Regressions and Correlations (Summary) | 212 |
| APPENDIX 6: Multiple Regressions Analysis (Sobel) | 219 |

ABBREVIATIONS

| | |
|--------|---|
| ABC | Activity Based Costing |
| AI | Artificial Intelligence |
| AWE | Warehouse Efficiency |
| AHCM | Warehousing HCM |
| AL | Warehousing Layout |
| AMIS | Warehousing MIS |
| AWO | Warehousing Operations |
| EDI | Electronic Data Interchange |
| GDP | Gross Domestic Product |
| HCM | Human Capital Management |
| IT | Information Technology |
| ISO | International Standard Organisation |
| JIT | Just-In-Time |
| KMO | Kaiser Meyer Olkin |
| MIS | Management Information System |
| MLR | Multiple Linear Regression |
| MNCs | Multinational Corporations |
| OL | Organisational Learning |
| SCM | Supply Chain Management |
| SKU | Stock Keeping Unit |
| SME | Small Medium Enterprises |
| SMI | Small Medium Industries |
| SMA | Sampling Measure Adequacy |
| SMIDEC | Small and Medium Industries Development Corporation |
| SPSS | Statistical Package for the Social Sciences |
| TQM | Total Quality Management |
| UNDP | United Nation Development Programme |
| WMS | Warehouse Management System |
| WWW | World Wide Web |

CHAPTER ONE

INTRODUCTION

1.0 BACKGROUND OF THE STUDY

Issues on warehouse efficiency (general logistics management) are specifically but not comprehensively studied until after the business globalisation process takes place (Rosena, Harlina Suzana, & Sabariah, 2008; Osman & Hariri, 2009; Ismail, Hashim, Ghani, Zulkifli, Kamilah, & Rahman, 2009). The problems keep on developing and continuing with the evolution of logistics roles that became more complex, which took place actively after the 1990s (Bardi, Coyle, & Novack, 2006; Gundlach, Bolumole, Eltanway, & Frankel, 2006). This especially became critical within the last two decades in the supply chain networks, in which warehouse has become an integral part of the major logistics service providers (Sink, Langley, & Gibson, 1996; Lambert, Stock, & Ellram, 1998; Coyle, Bardi, & Langley, 2003; Koster, Le Duc, & Roodbergen, 2007).

Tompkins and Smith (1998) described that warehouse efficiency has now become a core competency or a strategic weapon that many companies use to enhance their positions in the market. At the same time, warehouse efficiency is undergoing unbelievable challenges that make its practice to strive for excellence become harder to achieve. Warehousing before this has been viewed as a supportive industry to other functional areas, but it is now regarded as a strategic industry on its own (Gundlach *et al.*, 2006; Sum, Teo, & Ng, 2001).

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