

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

ADAM BIN MOHD SAIFUDIN

**DOCTOR OF BUSINESS ADMINISTRATION
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**MEDIATING EFFECT OF MANAGEMENT INFORMATION SYSTEM ON
THE RELATIONSHIP OF WAREHOUSE ATTRIBUTES AND ITS
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By

ADAM BIN MOHD SAIFUDIN

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Prof. Dr. Zainal Abidin bin Mohamed

Tandatangan
(Signature)

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(External Examiner)

Assoc. Prof. Dr. Zafir Khan bin Mohamed Makhbul

Tandatangan
(Signature)

Tarikh: 30 April 2012
(Date)

Nama Pelajar
(Name of Student)

: Adam bin Mohd Saifudin

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(Name of Supervisor/Supervisors)

: Assoc. Prof. Dr. Mohamad Basir bin Saud


Tandatangan
(Signature)

Nama Penyelia/Penyelia-penyelia
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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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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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