



UNIVERSITI PUTRA MALAYSIA

***CONTINGENCY FACTORS INFLUENCING MANAGEMENT
ACCOUNTING SYSTEM DESIGN OF MANUFACTURING COMPANIES IN
MALAYSIA***

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By

SIOW YUNG ERN

**Thesis Submitted to Graduate School of Management, Universiti Putra Malaysia,
in Fulfilment of the Requirements for the Degree of Master of Science**

September 2015

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DEDICATION

I dedicate my dissertation work to my family. A special gratitude to my loving parents, Mr. Siow Choong Fui and Dr. Tan Bee Chu, my brother, Mr. David Siow, and my husband, Mr. Joel Jen-Xin Lim, whose words of encouragement had supported me throughout my thesis. I will always appreciate all they have done.



Abstract of thesis presented to the Senate of Universiti Putra Malaysia in fulfilment of the requirement for the Degree of Master of Science

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September 2015

Chair : Dr. Amalina binti Abdullah
Faculty : Graduate School of Management, UPM

This study examines the effect of decentralization, the adoption of advanced manufacturing technology and market competition on the adoption of sophisticated management accounting system (MAS) design and in turn, the effect of MAS design on firm performance. Subsequently, this thesis also examines the mediating effect of MAS design on the relationship between decentralization, the adoption of advanced manufacturing technology and market competition with firm performance. It follows the contingency theory to propose that decentralization causes firms to adopt sophisticated MAS design in order to ensure that controls at all levels are exerted and to ensure that relevant information are provided while the adoption of advanced manufacturing technology encourages the adoption of sophisticated MAS design in order to obtain more accurate cost data and market competition encourages the adoption sophisticated MAS design in order to assist firms to cope with both local and international competition. Thus, this research proposes a positive relationship between the three independent variables known as decentralization, the adoption of advanced manufacturing technology and market competition on MAS design and subsequently a positive relationship between MAS design and firm performance. MAS design is also proposed to be a mediator in the relationship between the three independent variables and firm performance.

Using survey data from 137 manufacturing companies and regression analysis, the result shows a significant and positive relationship between the adoption of advanced manufacturing technology and market competition with MAS design and in the relationship between MAS design and firm performance. This suggests that the adoption of sophisticated MAS design is able to assist firms to cope with the changes in the manufacturing technology and assist firms to cope with the intensity of the market competition in Malaysia. However, a positive but insignificant relationship was observed in the relationship between decentralization and MAS design and MAS design was not found to be a mediator in any of the relationships above. These results have contributed to the management accounting change literature by providing empirical evidence that the adoption of advanced manufacturing technology and

market competition affects the MAS design of a firm and subsequently affects the firm's performance in the context of manufacturing firms in Malaysia.



Abstrak tesis yang dikemukakan kepada Senat Universiti Putra Malaysia sebagai memenuhi sebahagian untuk Ijazah Master Sains

CONTINGENCY FACTORS INFLUENCING MANAGEMENT ACCOUNTING SYSTEM DESIGN OF MANUFACTURING COMPANIES IN MALAYSIA

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Kajian ini mengenal pasti pengaruh decentralization, penggunaan teknologi pembuatan termaju dan persaingan pasaran terhadap penggunaan sistem perakuan pengurusan yang canggih (MAS) dan seterusnya, kesan reka bentuk MAS terhadap prestasi firma. Seterusnya, thesis ini juga mengkaji kesan mediating daripada reka bentuk MAS terhadap hubungan antara decentralization, penggunaan teknologi pembuatan termaju dan persaingan pasaran dengan prestasi firma. Ia mengikuti teori kontingensi untuk mencadangkan bahawa decentralization menyebabkan firma menerima pakai reka bentuk MAS canggih untuk memastikan kawalan di semua peringkat dalam syarikat telah dikenakan dan untuk memastikan bahawa maklumat yang relevan disediakan manakala penggunaan teknologi pembuatan termaju menggalakkan penggunaan reka bentuk MAS yang canggih untuk mendapatkan data kos yang lebih tepat dan persaingan pasaran menggalakkan penggunaan reka bentuk MAS yang canggih bagi membantu syarikat untuk menghadapi persaingan tempatan dan antarabangsa. Oleh itu, kajian ini mencadangkan hubungan yang positif antara ketiga-tiga pemboleh ubah bebas yang dikenali sebagai decentralization, penggunaan teknologi pembuatan termaju dan persaingan pasaran kepada reka bentuk MAS dan seterusnya hubungan yang positif antara reka bentuk MAS dan prestasi firma. Reka bentuk MAS juga dicadangkan untuk menjadi mediating dalam hubungan antara ketiga-tiga pembolehubah bebas dan prestasi firma.

Dengan menggunakan data kajian daripada 137 syarikat-syarikat pembuatan dan analisis regresi, hasilnya menunjukkan hubungan yang signifikan dan positif antara penggunaan teknologi pembuatan termaju dan persaingan pasaran dengan reka bentuk MAS dan dalam hubungan antara reka bentuk MAS dan prestasi firma. Ini menunjukkan bahawa penggunaan reka bentuk MAS canggih dapat membantu syarikat untuk menghadapi perubahan dalam teknologi pembuatan dan membantu syarikat untuk menghadapi persaingan dalam pasaran di Malaysia. Walau bagaimanapun, hubungan yang positif tetapi tidak signifikan diperhatikan dalam hubungan antara decentralization dan reka bentuk MAS dan reka bentuk MAS tidak dijumpai untuk menjadi mediation dalam mana-mana hubungan di atas. Keputusan ini telah menyumbang kepada perubahan sastera perakaunan pengurusan dengan menyediakan

bukti empirikal bahawa penggunaan teknologi pembuatan termaju dan persaingan pasaran memberi kesan reka bentuk MAS suatu firma dan seterusnya memberi kesan kepada prestasi firma itu dalam konteks syarikat pembuatan di Malaysia.



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Last but not least, this thesis will never be completed without the respondents for the survey. I would like to thank those who kindly responded to the questionnaire survey.

I certify that a Thesis Examination Committee has met on 10 September 2015 to conduct the final examination of Siow Yung Ern on her thesis entitled Contingency Factors Influencing Management Accounting System Design of Manufacturing Companies in Malaysia in accordance with the Universities and University Colleges Act 1971 and the Constitution of the Universiti Putra Malaysia [P.U. (A) 106] 15 March 1998. The Committee recommends that the student be awarded the Master of Science.

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LIST OF ABBREVIATIONS

MAPs	Management Accounting Practices
MAS	Management Accounting System
SMEs	Small and Medium Enterprises



CHAPTER 1

INTRODUCTION

1.0 Introduction

This chapter presents the background of the study, the problem statement and the objectives of this study. In addition, this chapter also presents the importance of this study and its contributions to the academic literature as well as to practice. Lastly, this chapter ends with the general organization of the thesis.

1.1 Background

In this current age of intense competition, the management of a company often requires relevant and timely information about the performance of the firm in order to survive and succeed (Haldma & Laats, 2002). Therefore, the need to develop the cost and management accounting system (MAS), which could provide relevant information on the costing decisions and the performance of the firm, has been a interesting topic for both practitioners and researchers in Malaysia (Tuanmat & Smith, 2011). This is essential as the management of a company needs to have relevant information at different levels of management to make appropriate decisions and to stay competitive (Mahfar & Normah, 2004).

A review on past literature on international firms have shown that more firms are adopting sophisticated MAS design. Wijewardena and Zoysa (1999) and Hyvonen (2005) found that Japanese and Finnish firms are introducing more changes to their MAS due to their technology driven economy. On the other hand, manufacturing firms in other developing and developed nations are also adopting more sophisticated MAS in order to cope with the changes in the business environment, technology and the country's economy system (Haldma and Laats, 2002; Abdel-Kader & Luther, 2008; Soobaroyen & Poorundersing, 2008; Angelakis, Theriou & Floropoulos, 2010; Abdel-Maksoud, Abdallah & Youssef, 2012). Some of the recent researches done in Malaysia have shown that manufacturing firms in Malaysia are also beginning to adopt more sophisticated MAS and are adopting more innovative MAPs while incorporating computerised accounting system (Tuanmat & Smith, 2011; Mohd Fazli, Hoshino & Hayati, 2012).

Thus, as various researches shown that firms are beginning to adopt more sophisticated MAS design, it is also important that both practitioners and researchers have more systematic information about the current MAS design and the factors influencing the adoption of sophisticated MAS design among manufacturing firms in Malaysia. A review of past literature have also revealed that most researchers are convincing organizations to adopt sophisticated MAS (Hyvonen, 2005; Angelakis et. al., 2010). However, Tillema (2005) noted that success is not guaranteed as it is the appropriateness of using these sophisticated MAS that would bring added value to the

business, thus giving rise to a contingency theory perspective. Thus, following this concept, this study applies contingency theory to explain the MAS design among manufacturing firms in Malaysia as there is no single MAS design that is applicable to all business structure (Islam & Hu, 2012). Rather, the most appropriate MAS design is contingent to the business context and environment and it should provide managers with relevant information for decision making purposes (Gerdin, 2005; Tillema, 2005; Abdel Kader and Luther, 2008). According to Abdel-Kader and Luther (2008), sophistication refers to the MAS capabilities to provide a wide scope of information that are relevant to the firm's planning, controlling and decision making purposes and for the purpose of this study, the sophistication of MAS design will be measured by using the four dimensions of MAS information (Chenhall & Morris, 1986).

Therefore, this thesis aims to identify the contingent factors that influence the adoption of sophisticated MAS among manufacturing firms in Malaysia. In particular, this paper aims to empirically investigate whether the adoption of sophisticated MAS is significantly influenced by the changes in business structure and whether it is able to reduce the market competition. Three variables are examined in this study and they are decentralization, the adoption of advanced manufacturing technology and the intensity of market competition. These variables are identified as the contingency theory literature indicates that these factors are able to affect a manufacturing firm's MAS design (Abdel-Kader & Luther, 2008; Taipaleenmaki & Ikaheimo, 2013).

On the other hand, internationalization has changed the manufacturing business environment in Malaysia as uncertainty and competition intensifies (Mahfar & Normah, 2004). Manufacturing firms are beginning to engage in international activities and these changes the business structure and increases the need to adopt more sophisticated production technologies in order to sustain a larger customer market demand (Wu, Boateng & Drury, 2007). Thus, these changes could put a constraint on the firm's accounting system, prompting the firms to adopt more sophisticated MAS in order to accommodate the changes in cost structure, to ensure precision of each cost calculation (Gerdin, 2005; Abdel-Kader & Luther, 2008) and to ensure sufficient control is exerted at every level of reporting (Chenhall & Morris, 1986). Thus, in order to compete and sustain in the international market, manufacturing firms in Malaysia are advised to wisely choose the appropriate MAS design in order to sustain in this competitive environment and to obtain relevant information for strategic decision purposes as the firms enters into international market (Haldma & Laats, 2002; Thruilogachantar & Zailani, 2011; Liu, Li & Xue, 2011).

1.2 Problem Statement

Malaysia is a developing country with a very dynamic environment (Tuanmat & Smith, 2011; Mohd Fazli et. al., 2012). Thus, in order to cope with the growing economy, the manufacturing firms in Malaysia are constantly innovate their manufacturing technology in order to produce higher quality products at a lower cost (Smith, Abdullah & Razak, 2008). Besides, manufacturing firms are also constantly re-strategizing their business objectives and structure as they compete locally and in

international market (Mahfar & Normah, 2004). These changes have brought about significant changes to their customer base decisions and cost and control decisions (Mahfar & Normah, 2004).

Subsequently, the MAS design among the manufacturing firms in Malaysia are also affected by these ever changing internal and external factors. Thus, in order to compete and succeed, firms needed to identify and understand the specific factors that could affect the MAS design in the firm and its impact on the firm performance. This is essential as the adoption of the appropriate MAS design can be used as a competitive tool to revamp their processes in order to compete and to response to changes (Thrulogachantar & Zailani, 2011) as manufacturing settings are mainly related to cost management and cost control purposes (Zawawi & Hoque, 2010). A review of international published works have also shown a trend that suggests that decentralization (Chenhall and Morris, 1986; Abdel-Kader & Luther, 2008), advance manufacturing technology (Hyvonen, 2005), and market competition (Hoque, 2004; O'Connor, Vera-Munoz & Chan, 2011) are prominent factors that could affect the MAS design among manufacturing firms.

Thus, as the manufacturing firms in Malaysia frequently faces enormous changes in the business structure, the manufacturing technology environment and the intensified market competition (Mohd. Fazli et. al., 2012), it is reasonable to expect changes to occur in the MAS too as Tillema (2005) noted that success in the adoption of sophisticated MAS design depends on the appropriateness of its usage on the business structure. Thus, there is a need to identify whether Malaysia manufacturing firms adopts a decentralized structure when expanding the business, and its impacts the MAS design (Abdel-Kader & Luther, 2008). Besides, as manufacturing technology advances, there is also a need to identify whether advanced manufacturing technology affects the MAS design in Malaysia as Abdel-Kader and Luther (2008) noted a distinctive difference while Haldma and Laats (2002) found no clear difference in the MAS design with different production technologies. Besides, the findings will also shed some light on whether firms in Malaysia are able to cope with the manufacturing technological changes and the changes in MAS design as the need for more accurate cost data increases. Lastly, there is a need to identify whether the best MAS design is able to assist firms to cope with the intensity of the market competition as Khandwalla (1972) noted that the MAS design could be impacted by the intensity of the market competition as different kinds of information are needed.

1.3 Objectives of the Study

The aim of this research is to identify the factors influencing the MAS design among manufacturing firms in Malaysia. The findings of this research may shed some light on whether traditional MAS designs has completely lost its relevance and whether sophisticated MAS designs are crucial to increase the firm's efficiency and effectiveness (Sulaiman, Nik Ahmad & Alwi, 2004). This study will adopt the contingency-based approach with the following specific objectives:

- To examine whether decentralization, the adoption of advanced manufacturing technology and the intensity of market competition affects the MAS design sophistication among manufacturing firms in Malaysia.
- To investigate the relationship between the MAS design and the performance of manufacturing firms in Malaysia.
- To examine the role of MAS design as a mediator in the relationship between decentralization, the adoption of advanced manufacturing technology and market competition with firm's performance.

The findings will enhance understanding of the specific factors that influence the MAS design among manufacturing firms in Malaysia, and how the MAS design among manufacturing firms in Malaysia affects the performance of the firms.

1.4 Importance of the Study

This study aims to assist companies to understand the need to adopt the appropriate MAS design in order to obtain relevant information for strategic decision making purposes. This is essential as the manufacturing settings are cost conscious and dynamic as the business environment and manufacturing technology environment changes rapidly. Besides, this study also aims to guide the industry at the MAS design stage in order to improve decision making at each level in the firm.

Nonetheless, this study will also contribute to the body of knowledge regarding the MAS design among manufacturing firms in Malaysia. Its main contribution is to provide empirical results to enhance the understanding of contingent factors that influence the MAS design among manufacturing firms in Malaysia and the effects of such design on the firm's performance. This linkages will be done by considering and including all the four dimensions of the MAS design.

In addition, this study will also contribute to the management accounting literature by providing findings of a study on the MAS design in the manufacturing firm setting from the perspectives of a developing country. The findings could provide insights for further studies on factors influencing the MAS design among manufacturing firms in other developing countries and also among other industries in Malaysia.

1.5 Organization of the Thesis

The remainder of the thesis is organized as follows. Chapter 2 reviews the literature on MAS, decentralization, the adoption of advanced manufacturing technology, market competition and organizational performance and the relevant theories to lead to development of the conceptual framework and the hypotheses. Chapter 3 describes the methodology used in this empirical study. Chapter 4 explains the analysis and findings of the study and finally, chapter 5 would provide concluding remarks and suggestions for future research.

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