

**AN EMPIRICAL STUDY OF INTEGRATED
PERFORMANCE MEASUREMENT USAGE AMONGST
SABAH MANUFACTURING COMPANIES**

PERPUSTAKAAN
UNIVERSITI MALAYSIA SABAH

LEE SHI PING



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SCHOOL OF BUSINESS AND ECONOMICS

UNIVERSITI MALAYSIA SABAH

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MASTER DEGREE OF BUSINESS
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**SCHOOL OF BUSINESS AND ECONOMICS
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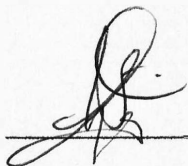
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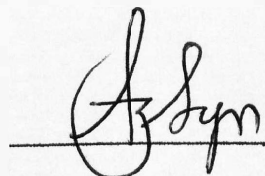
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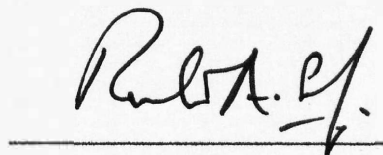


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I hereby declare that the material in this thesis is my own except for quotations, excerpts, equations, summaries and references, which have been duly acknowledged.

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ACKNOWLEDGEMENT

I would like to take this opportunity to acknowledge the help of the people around me.

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LEE SHI PING
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ABSTRACT

AN EMPIRICAL STUDY OF PERFORMANCE MEASUREMENT USAGE AMONGST SABAH MANUFACTURING COMPANIES

The objective of this cross-sectional study was to investigate the extent of integrated performance measurement usage across contextual factors (organizational structure and competition) and its performance outcome. Then, the mediating effect of the extent of integrated performance measurement usage was meant to investigate as well on the relationships between the studied contextual factors and company performance. The top managerial personnel of Sabah manufacturing companies in Kota Kinabalu area was the targeted respondent to participant this study. Using data of 38 Sabah manufacturing companies in Kota Kinabalu, this study has provided evidence on the direct relationships on (1) the extent of integrated performance measurement usage was positively related to organizational structure, (2) company tended to use integrated performance measurement usage in greater extent when facing high level of competition, and (3) the greater extent of integrated performance measurement usage was associated with the increase of company performance. On the other hand, this study found no evidence for the mediating effect of the extent of integrated performance measurement usage on the relationship between (4) organizational structure and company performance, and (5) competition and company performance.



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ABSTRAK

Objektif kajian ini adalah untuk menyelidik perhubungan antara tahap penggunaan pengukuran prestasi integrasi dengan faktor-faktor syarikat (struktur organisasi dan persaingan) dan prestasi syarikat. Selain itu, kajian ini juga bertujuan untuk menyiasat kesan pengantaraan dari tahap penggunaan pengukuran prestasi integrasi pada hubungan antara faktor-faktor syarikat dan prestasi syarikat. Responden kajian ini adalah pengurusan atasan syarikat perkilangan di kawasan Kota Kinabalu, Sabah. Dengan menggunakan data sebanyak 38 responden, kajian ini telah membuktikan kewujudan tiga perhubungan langsung, iaitu (1) tahap penggunaan pengukuran prestasi integrasi adalah positif berkaitan dengan struktur organisasi, (2) syarikat menggunakan pengukuran prestasi integrasi dengan tahap yang lebih tinggi apabila menghadapi persaingan tinggi, dan (3) tahap penggunaan pengukuran prestasi integrasi yang tinggi berkaitan dengan peningkatan prestasi syarikat. Walaupun demikian, kajian ini tidak dapat membuktikan kesan pengantaraan dari tahap penggunaan pengukuran prestasi integrasi pada hubungan antara (4) struktur organisasi dan prestasi syarikat, dan (5) persaingan dan prestasi syarikat.



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CHAPTER 1

INTRODUCTION

1.1 Overview

Performance measurement is not a new term to organizations especially to managers. People likes to measure performance and believed that they will get what they measured. For organizations, continuously improvement and excel to success is a never-ending process and challenge. Tracking and evaluating organizational performance is essential to conduct in order to know whether the program has achieved its objectives and aligned to the organizational goal. The evaluative and measureable information can give managers a clearer direction in making decision that relevant to the organizational strategy and goal. Therefore, performance measurement is being known as the fundamental cornerstone to excel organization and comprehensive organizational improvement. All organizations measure performance to some extent and use performance measurements accordance with the nature of organizations and organizational contextual characteristics. Therefore, there has wider and broader definition range of indicators for performance measurement. For example, March and Sutton (1997) stated that performance indicators were differently across different organizational natures and they were: research productivity, test scores of students, prestige of faculties, and ranking by popular magazines were used to evaluate the performance of universities; for business firms, mostly were measured in terms of financial (such as market value, profit, sales in return) and non-financial (such as customer satisfaction, service quality and number of outputs, leadership); and for hospitals, cost recovery, mortality, and occupancy were used. Even though performance measurements are differently across organizational natures, the ultimate consensus aim of these measurements is designed to improve the organizational performance.

Sabah is facing the globalized environmental challenges and competitive pressures as the western countries do when Malaysia is standing on the global platform of business. These challenges are hyper-competition and technological dynamics (Drejer, 2004), increased deregulation (Creelman & Makhijani, 2005), increasing sophisticated customers and management practices, emphasized intellectual capital and enhanced employee empowerment (Atkinson, 2006), and increasing demand of the knowledge role for global competitiveness (Marr *et al.*, 2004). Additionally, the world economic crisis of 1997/98 has caused severe impact to the Asian economy and effectively put the normal evolution of management thinking on hold (Creelman & Makhijani, 2005). Many companies have to change their management practice from emergent planning based management to strategic management in order to face the risk of economic crisis and challenges of globalization, such as practicing performance measurement system that corresponded to the organizational contextual factors. For manufacturing companies, globalization has brought competition more intense in terms of intra- and inter-national level. Thus, unprecedented levels of pressures were the common challenge faced by manufacturers (Karim *et al.*, 2008). The appropriate selection and design of a range of performance measurement has become one of the competitive advantages for manufacturing companies. As the local report of Ruzita Jusoh *et al.* (2008) suggested, performance of the manufacturing companies with using performance measurement system that comprises integrated performance measurements with embracing financial and non-financial was much better than the companies with solely rely on individual perspective measurement. Hence, integrating financial and non-financial measurement with aligned to the organizational contexts and strategy is the requirement for effective performance measurement system.

The demand for comprehensive performance measurement system in business world is increasing as the era shifted from industrial to information. In this globalized markets of information era, well allocating and monitoring intangible assets is one of the competitive advantages for companies. Traditional performance measurement with solely emphasized on financial perspective and

tangible assets was not longer sufficient for decision making, planning and controlling company operations in information era. Kaplan and Norton (2001) claimed that the traditional measurement system was insufficient in terms of: interpreting and predicting the company performance as whole for past, present and future; linking and aligning the measurements with organizational goal; and assessing intangible assets. Other than that, the traditional performance system also has been criticized as obsolete, easily manipulated by managers (Ruzita Jusoh *et al.*, 2008), and known as lag indicators by only capable to assess the short term performance by promoting the short term behavior with neglecting the long term value creation for company (Chavan, 2009). To cope with the rapid changing business environments and demands, evaluating company performance with different perspectives and aligning measurements to organizational goal and contextual factors at the same time has become the essential management practice for organizations.

Many management tools with integrating broad-ranged measurements have emerged from time to time for evaluating company performance effectively and strategically, they are Strategic Performance Measurement Systems. The adopted Strategic Performance Measurement Systems must be able to fit the organizational contextual factors, reflect strategy and align to the strategic goal of company in order to achieve optimal performance. One of the popular SPMS that fulfill these requirements is balanced scorecard (BSC), which was introduced and originated by Kaplan and Norton in 1992. BSC is the framework for strategic measurement and management system to translate company mission and strategy into a comprehensive set of performance measurement, which embracing perspectives of financial performance, customer relations, internal business processes, and the activities of organizational learning and growth. Ali Assiri *et al.* (2006) claimed that BSC with integrating financial and non-financial measurement has gained worldwide acceptance and the interests of academicians and practitioners. Therefore, the integrated performance measurement system with BSC perspective was the main research subject in this study.

1.2 Problem Statement

The globalization and advanced technology has brought many new challenges to manufacturing sector, which more often emphasized on quality, delivery, innovation and flexibility. With solely reliance on single perspective measurement, manufacturing companies might unable to assess their performance comprehensively. In turn, this might affect their company performance. Bontis *et al.* (2000) and Ruzita Jusoh *et al.* (2008) have reported that most Malaysian industries were still generally used the traditional performance measurement system with solely focus on financial measurement. Integrating financial and non-financial measurement has gained worldwide acceptance and the interests of academicians and practitioners (Ali Assiri *et al.*, 2006; Creelman & Makhijani, 2005). Ruzita Jusoh *et al.* (2008) reported that 30 percents of the study sample (in Malaysia) was using integrated performance measurement with BSC perspectives. This shown that integrated performance measurement was gaining momentum in Malaysian companies. However, the extent of integrated performance measurement usage was not much specified study. Therefore, this study attempted to study the extent of integrated performance measurement usage with using BSC perspectives to construct the variable.

Many studies done on performance measurements and high diffusion rate of BSC across countries, only few studies were done on the relationships between contextual factors and the extent of performance measurement usage (e.g. Ruzita Jusoh, 2008; Ruzita Jusoh & Parnell, 2008; Verbeeten & boons, 2009; Hoque & James, 2000; Ong & Teh, 2008; Lee & Yang, 2010); and limited researches have been done on the effect of performance measurement with BSC framework to company performance (e.g. Malmi, 2001; Neely *et al.*, 2004; Geuser *et al.*, 2009; Yongvanich & Guthrie, 2009). Additional, most of the local studies reported that relationship between contextual factor and performance measurement usage were solely focus on single dimension of contextual characteristic such as environmental uncertainty (Ruzita Jusoh, 2008), market competition (Ong & Teh, 2008) and strategy (Ruzita Jusoh & Parnell, 2008). Corresponded to the suggestion of

Verbeeten and Boons (2009), the use of performance measurement should be match to the internal and external characteristics of company. Hence, this study attempted to include the internal and external organizational contextual factors when investigating the extent of performance measurement usage. By replicating the research variables from the contingency framework of Lee and Yang (2010), organizational structure was representing the internal contextual factor and competition was representing the external contextual factor in this study.

Furthermore, Iselin *et al.* (2008) claimed that BSC research was still in embryonic state by unknowing the extent of integrated performance measurement implemented and its effect to organizational performance. Ruzita *et al.* (2008) also noted that performance effect of performance measurement with BSC framework was remained an open issue. As the studies of Malmi (2001) and Speckbacher *et al.* (2003), the extent of performance measurement implementation varied the performance effect of company. Hoque and James (2000) and Ruzita Jusoh (2008) suggested that greater extent of integrated performance measurement usage was associated with improved performance. Hence, the performance effect of integrated performance measurement usage was attempted to investigate as well in this study.

The prior studies of contingency theory on performance measurement suggested that the company performance would be influenced in either negative or positive direction by the performance measurement system, which designed to fit accordance to the contextual factors (e.g. Ruzita Jusoh, 2008; Gosselin, 2005; Lee & Yang, 2010; Hoque & James, 2000) such as perceived environmental uncertainty, market competition, and organizational structure. Ruzita Jusoh (2008) was further recommended that more contextual factors should be considered in studying the performance effectiveness of performance measurement usage. Furthermore, the integrated performance measurement usage might have the possibility to act as mediator for the relationship between organizational contextual factors and company performance, since the relationships of contextual factors to

measurement system and measurement system to company performance were expected exist. Plus, there have some studies reported that mediating effect of performance measurement usage did existed on the relationship between contextual factors and company performance (Ruzita Jusoh, 2008; Hoque, 2004; Joiner *et al.*, 2009). Additional, the contingency finding of Lee and Yang (2010) was only able to provide partial moderating evidence. Therefore, this study was also attempted to investigate the mediating effect of the extent of integrated performance measurement usage on the relationships between the studied contextual factors and company performance by modified the moderating framework of Lee & Yang (2010) to mediating framework.

In summary, this study was attempting to understand the influence of the organizational structure and competition to the extent of performance measurement usage by using the perspectives of BSC amongst Sabah manufacturing companies, and performance effect of the integrated performance measurement usage. Furthermore, this study was also meant to examine the mediating effect of integrated performance measurement usage on the relationships between the studied contextual factors and company performance.

1.3 Research Questions

Corresponding to the problem statement discussed in the preceding section, the following research questions have been developed with attempting to investigate the effect of internal and external contextual factor to the extent of integrated performance measurement usage and their interactional effects on the company performance of Sabah manufacturing companies:

- a. What is the effect of organizational structure on the extent of integrated performance measurement usage?
- b. What is the effect of competition on the extent of integrated performance measurement usage?

measurement system and measurement system to company performance were expected exist. Plus, there have some studies reported that mediating effect of performance measurement usage did existed on the relationship between contextual factors and company performance (Ruzita Jusoh, 2008; Hoque, 2004; Joiner *et al.*, 2009). Additional, the contingency finding of Lee and Yang (2010) was only able to provide partial moderating evidence. Therefore, this study was also attempted to investigate the mediating effect of the extent of integrated performance measurement usage on the relationships between the studied contextual factors and company performance by modified the framework of Lee & Yang (2010) to mediating the

In summary

The main objective of this study was to investigate the extent of integrated performance measurement usage amongst Sabah manufacturing companies by using BSC framework across the influence of contextual factors and examined the existence of mediating effect of the extent of integrated performance measurement usage on the relationships between studied contextual factors and company performance. The specific study objectives were as follows:

- a. To examine the effect of organizational structure to the extent of integrated performance measurement usage;
- b. To examine the effect of competition to the extent of integrated performance measurement usage;
- c. To examine the association between the extent of integrated performance measurement usage and company performance;

- c. What is the relationship between the extent of integrated performance measurement usage and company performance?
- d. Is mediating effect of the extent of integrated performance measurement usage existed on the relationship between organizational structure and company performance?
- e. Is mediating effect of the extent of integrated performance measurement usage existed on the relationship between competition and company performance?

1.4 Research Objectives

The main objective of this study was to investigate the extent of integrated performance measurement usage amongst Sabah manufacturing companies by using BSC framework across the influence of contextual factors and examined the existence of mediating effect of the extent of integrated performance measurement usage on the relationships between studied contextual factors and company performance. The specific study objectives were as follows:

- a. To examine the effect of organizational structure to the extent of integrated performance measurement usage;
- b. To examine the effect of competition to the extent of integrated performance measurement usage;
- c. To examine the association between the extent of integrated performance measurement usage and company performance;

- d. To investigate the mediating effect of the extent of integrated performance measurement usage on the relationship between organizational structure and company performance;
- e. To investigate the mediating effect of the extent of integrated performance measurement usage on the relationship between competition and company performance.

1.5 Scope of study

Few local studies have conducted on the performance measurement usage with BSC perspectives in nationwide of Malaysian manufacturing companies (e.g. Rozhan Othman, 2006, 2007; Ruzita Jusoh & Parnell, 2008; Ruzita Jusoh *et al.*, 2008; Ong *et al.*, 2010). From the local studies, some revealed that the use of integrated performance measurement that embracing financial and non-financial measurements was relatively recent to Malaysian manufacturing companies, especially BSC. However, the non-financial measurements were gaining momentum among the respondents. Additional, an interesting point has revealed from the study of Ruzita Jusoh *et al.* (2008), some Malaysian manufacturing companies were adopting some perspectives of performance measurement from BSC with either knowing or unknowing and claimed themselves as non-BSC adopters. In order to cope with this circumstance, BSC user was not the prerequisite for this study when the variable of integrated performance measurement usage in this study was constructed based on the four BSC perspectives. As mentioned formerly, most of local studies were conducted on national level. The local report also claimed that company performance differ sharply across geographical regions (Ghani *et al.*, 2002). Hence, this study intended to extend the study to state level and Sabah was the study ground. Kota Kinabalu as the city of Sabah was the focus area of this study since Sabah development is centered from Kota Kinabalu.