

**THE USAGE OF
BALANCED SCORECARD MEASURES,
BUSINESS STRATEGY AND
FIRM PERFORMANCE**

by

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BUSINESS STRATEGY AND
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DEDICATION

This thesis is especially dedicated to:

My husband, Mohamad Amin and my children, Naim, Arif, Huda, Asif and Alif

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PENGGUNAAN UKURAN SKORKAD BERIMBANG, STRATEGI PERNIAGAAN DAN PRESTASI FIRMA

ABSTRAK

Penggantungan tunggal kepada ukuran pencapaian berdasarkan kewangan atau perakaunan tidak mencukupi dalam persekitaran pengeluaran yang baru. Kesedaran yang meningkat terhadap kepentingan ukuran pencapaian bukan kewangan dalam memberikan nilai ciptaan jangka panjang dan fokus strategi jangka panjang serta kesannya ke atas prestasi firma telah membawa kepada beberapa inovasi dalam bidang sistem pengukuran pencapaian. Salah satu inovasi dalam bidang ini ialah ukuran skorkad berimbang yang telah di cetuskan oleh Kaplan dan Norton dalam tahun 1992. Skorkad berimbang menambah ukuran kewangan tradisi dengan ukuran bukan kewangan yang difokuskan kepada sekurang-kurangnya tiga perspektif lain iaitu pelanggan, proses dalaman perniagaan, dan pengetahuan dan pertumbuhan. Oleh itu, objektif utama kajian ini adalah untuk mengkaji secara empirikal dalam konteks organisasi penggunaan ukuran pencapaian yang telah dikonsepsikan sebagai ukuran skorkad berimbang. Di samping itu, adalah menjadi objektif kajian ini sebahagiannya untuk menentukan samada factor-faktor seperti persepsi persekitaran tidak pasti dan saiz firma boleh bertindak sebagai pembolehubah anteseden kepada ukuran skorkad berimbang dan strategi perniagaan. Secara spesifik, kajian ini menyiasat hubungan antara strategi perniagaan (menggunakan jenis strategi Miles dan Snow) dan ukuran skorkad berimbang serta kesan utama dan kesan penajajaran ke atas prestasi firma.

Sampel diperolehi daripada 120 buah firma perkilangan Malaysia yang beroperasi di Malaysia Barat. Hasil kajian menunjukkan yang penggunaan ukuran kewangan masih lagi tinggi dan menduduki tempat teratas di kalangan empat perspektif ukuran skorkad berimbang. Walaubagaimanapun, penggunaan ukuran bukan

kewangan semakin bertambah momentumnya. Juga, terdapat petunjuk yang saiz firma boleh menjadi pembolehubah anteseden kepada ukuran skorkad berimbang dan strategi perniagaan. Hasil daripada pendekatan "selection" kepada "fit" memberi bukti mencukupi untuk cadangan yang tahap penekanan sesebuah firma terhadap sesuatu strategi perniagaan berkait dengan sejauh mana firma ini menggunakan ukuran skorkad yang sesuai. Di samping itu, terdapat bukti menyarankan yang penekanan kepada strategi "prospector" dan strategi "analyzer" serta penggunaan ukuran proses dalaman perniagaan dan pengetahuan dan pertumbuhan mempunyai kesan utama ke atas prestasi firma. Hasil pendekatan interaksi kepada "fit" hanya menunjukkan sokongan kepada kesan interaktif strategi "prospector" dan ukuran skorkad berimbang ke atas prestasi firma, tetapi tidak kepada strategi "analyzer" dan strategi "defender". Walau bagaimanapun, akhirnya, hasil daripada pendekatan sistem menunjukkan yang padanan sesuai semua ke empat-empat perspektif ukuran skorkad berimbang dengan semua jenis strategi perniagaan dikaitkan dengan prestasi bukan kewangan firma.

THE USAGE OF BALANCED SCORECARD MEASURES, BUSINESS STRATEGY AND FIRM PERFORMANCE

ABSTRACT

Sole reliance on financial or accounting based performance measures is inadequate in the new manufacturing environment. Increase awareness of the importance of non-financial performance measures in providing long-term value creation and long-term strategic focus as well as their effects on firm performance has led to several innovations in the area of performance measurement system. One of the widely known innovations in this area is called balanced scorecard (BSC) which has been originated by Kaplan and Norton in 1992. The BSC supplements the traditional financial measures with non-financial measures focused on at least three other perspectives – customers, internal business processes, and learning and growth. The main objective of this study is, therefore, to investigate empirically the extent of usage of performance measures, conceptualized as the BSC measures, within an organizational context. Also, the objective of this study is, in part, to determine whether factors such as perceived environmental uncertainty and firm size can act as antecedent variables to the BSC measures and business strategy. Specifically, this study investigated the relationship between business strategy (using Miles and Snow strategic types) and the BSC measures usage and their main and alignment effects on firm performance.

The sample was obtained from 120 Malaysian manufacturing firms operating in West Malaysia. The results revealed that the usage of financial measures is still high and ranked first among the four perspectives of the BSC measures. However, the usage of non-financial measures is gaining momentum. Also, there was indication that firm size can be antecedent variable to the BSC measures and business strategy. The results of the selection approach to fit provide enough evidence for the proposition that

the degree to which a firm emphasizes a given business strategy is associated with the extent to which it uses appropriate BSC measures. Besides, there is evidence suggesting that emphasizing prospector strategy and analyzer strategy and using internal business process and learning and growth measures have main effects on firm performance. The results of the interaction approach to fit only show some support for the interactive effects of prospector strategy and BSC measures on firm performance, while analyzer strategy and defender strategy did not. Finally, however, the results of the systems approach indicated that an appropriate match of all four perspectives of the BSC measures with all types of business strategies is associated with high firm non-financial performance.

CHAPTER ONE

INTRODUCTION

1.0 Introduction

In recent years, researchers and practitioners have expressed concerns with the traditional management accounting systems (MAS), traditional management control systems (MCS) and traditional performance measurement systems (PMS). It all started with the book “Relevance Lost - Rise and Fall of Management Accounting” by Johnson and Kaplan in 1987. They have argued that the traditional management accounting systems which was developed during the industrial age is no longer adequate in today’s rapidly changing, dynamic, and competitive environment and that the information provided under the traditional management accounting systems is not useful, not timely, and not good enough for management planning, controlling and decision making. With regard to management control system, according to Otley (1999), traditional management control system, as developed by Anthony (1965), has overlooked the elements of non-financial measures, strategies and operations that are essential in a good control system. Traditional management control systems design, in particular performance measurement system, relies on short-term profit measures and, is not adequate to reflect effectiveness in today’s business environments.

In addition, the changing nature of value creation complicates the performance measurement process whereby the focus now is on managing intangible assets (e.g. customer relationships, innovative products and services, high-quality and responsive operating processes) which are non-financial in nature, rather than managing tangible assets (e.g. fixed assets and inventory) which are financial in nature (Kaplan & Norton, 2001). As a result, many organizations have experienced the decreasing book value of tangible assets (Brewer, 2002; Kaplan & Norton, 2001). Thus, the traditional

performance measurement tools designed for industrial-age economy, which emphasize on financial measures and tangible assets, are no longer able to capture the changing nature of today's business environment.

Discontent over the traditional performance measurement system has forced many companies to look for means in improving their performance measurement system or find an alternative performance measurement system which is new and can provide what they require in meeting their objectives. Also, pressure from domestic and global competitors, demands for quality and reliable products from customers, high expectation from the stakeholders and usage of new and advanced manufacturing technology contribute major impetus for devising and implementing a good performance measurement system for an organization. A survey by the Institute of Management Accounting in the USA, as reported by Sim and Koh (2001), indicated that many performance measurement systems are poor and need major overhaul.

Due to many criticisms of traditional performance measurement system, there have been considerable innovations in this area. New performance measurement systems, so called strategic performance measurement systems (SPMS) have been developed. A distinct feature of these SPMS is that they are designed to present managers with financial and non-financial measures covering different perspectives which, in combination, provide a way of translating strategy into a coherent set of performance measures (Chenhall, 2005). According to Chenhall (2005), it is the integrative nature of SPMS that provide them with the potential to enhance an organization's strategic competitiveness. One of the famous SPMS is the balanced scorecard (BSC), originated by Kaplan and Norton in 1992. Kaplan and Norton (2001) claims that BSC helps to overcome strategy implementation by providing a framework to build strategy-focused organizations. A study by Sim and Koh (2001) provides evidence about manufacturing plants that have strategically linked their corporate goals

or objectives to their performance measurement systems, via the BSC, performed better than those that do not.

Any performance measurement system must reflect strategy. Lack of alignment between strategic business units' strategies and performance measures could result in firms' competitive positions, stakeholders be exposed to increased risk, customers not be adequately served, and employees not realizing their full potentials (Paladino, 2000). Prior studies have found significant relations between the organization's strategy and performance measurement system, with some of them found higher organizational performance when measurement is more closely aligned with the chosen strategy (e. g. Abernethy & Guthrie, 1994; Govindarajan, 1988; Govindarajan & Gupta, 1985; Simons, 1987).

1.1 Problem Statement

Firms that are not satisfied with their current performance measurement systems would tend to experience unsatisfactory performance since its measurement can profoundly influence the overall organizational performance (Hopwood, 1972). The use of non-financial measures on key business processes such as product quality, customer satisfaction, cycle time, innovation, and employee satisfaction may be better leading indicators of financial performance (Ittner & Larcker, 1998). Performance measurement systems that rely on less appropriate measures and that do not link measures with strategic priorities would have negative impact on firms' performance (Paladino, 2000). It can be argued that, it is the role of strategic performance measurement systems (SPMS), such as BSC, to provide an integrative approach to align manufacturing with strategy which then enhances the organization's competitiveness on strategic outcomes (Chenhall, 2005).

Although research in the area of management control and performance measurement systems particularly using the contingency approach is relatively extensive, it generally looks at only one or a few strategies or control or measurement systems at a time and does not directly and specifically examine the use of multiple performance measures, in particular the BSC measures, and business strategy-BSC measures alignment. Given the recent development in the performance measurement literature which focuses on the use of multidimensional measurement, in particular the BSC (e.g. Kaplan & Norton, 1992; 1996a; 1996b; 2001), and the issue of alignment between performance measures and strategy, the concern can now be turned to whether performance measures adopted by Malaysian manufacturing firms are reflective of the multidimensional and integrated approach as proposed in the BSC concept and in turn aligned with the extent to which strategy is emphasized. As firm performance and strategy-performance measures alignment or fit (these two terms are often used interchangeably which give the same meaning) become a concern, it would be worthwhile to investigate empirically the alignment between business strategy and multiple performance usage, conceptualized as the BSC measures, and to examine whether this alignment has any impact on firm financial and non-financial performance.

While many previous studies on the use and performance consequences of non-financial measures have produced mixed results (e.g. Brancato, 1995; Ittner & Larcker, 1998; Banker, Potter, & Srinivasan, 2000), an attempt to examine the performance consequences of BSC measures which incorporate both financial and non-financial measures is, therefore, timely. Besides BSC measures and business strategy, other contextual constructs that are assumed to influence business strategy and BSC measures usage are perceived environmental uncertainty and firm size which may act as antecedent variables. According to management accounting systems literature, perceived environmental uncertainty relates to the extent to which the firm's competitive environment is highly dynamic and unpredictable and how it is correlated

with the extent to which the firm's particular strategy is emphasized and how it is related with three performance measurement system attributes: focus (internal vs. external measures), quantification (financial vs. non-financial measures), and time horizon (historical vs. future-oriented).

1.2 Research Questions

Given the problem statement described in the preceding section, this study attempts to investigate the use of multiple performance measures using the balanced scorecard approach within an organization context. Specifically, the following research questions have been developed:

1. To what extent is the emphasis of business strategies, namely prospector, analyzer, and defender strategy and the usage of BSC measures among the Malaysian manufacturing firms?
2. What are the associations between perceived environmental uncertainty, firm size and business strategy?
3. How does perceived environmental uncertainty and firm size relate to the usage of BSC measures?
4. What are the relationships between business strategy and the usage of BSC measures?
5. Are there direct relationships between BSC measures usage and firm performance and between business strategy and firm performance?

6. How does the fit between the business strategy and the usage of BSC measures affect firm performance?

1.3 Research Objectives

1.3.0 General Research Objectives

The general objective of this research is to provide some empirical evidence on multiple performance measures usage using the balanced scorecard approach within an organization context and on the nature of relationships between the BSC measures with other contextual variables: perceived environmental uncertainty, firm size, and business strategy. More specifically, it investigates the impact of business strategy-BSC measures fit on firm performance.

1.3.1 Specific Research Objectives

Consistent with the above general research objectives, the specific research objectives are set as follows:

1. To identify the extent of emphasis of business strategies, namely prospector, analyzer, and defender strategy and the extent of BSC measures usage among Malaysian manufacturing firms.
2. To determine the relationships between perceived environmental uncertainty and business strategy and between firm size and business strategy.
3. To examine the relationships between perceived environmental uncertainty and BSC measures usage and between firm size and BSC measures usage.

4. To determine the relationship between business strategy and BSC measures usage.
5. To examine the direct relationships of business strategy and firm performance and BSC measures usage and firm performance.
6. To examine the fit between business strategy and BSC measures usage and its effect on firm performance.

1.4 Significance of the Study

Given the importance of non-financial performance measures in providing better indicators of performance (e.g. Banker *et al.*, 2000; Bhimani, 1993; Buckmaster, 2000; Kaplan & Norton, 1996b), this study intends to address the contribution of multiple performance measures in the form of BSC measures in supplementing financial measures with non-financial measures focusing on customer, internal business process, and learning and growth. The BSC is a powerful strategic management system that facilitates the strategy implementation. As such, by conducting a study on the manufacturing industry where the use of performance measures are more diverse and extensive, this study expects to highlight the extensiveness of BSC measures usage and ascertain the claim that these measures can be tailored to the firm's strategy.

The BSC seems to be prominent in accounting research ever since Atkinson, Balakrishnan, Booth, Cote, Groot, and Malmi (1997, p. 94) noted that "the balanced scorecard is among the most significant developments in management accounting and thus, deserves intense research attention." Despite an increasing interest from practitioners and researchers in the BSC, large scale empirical findings on BSC still scarce world wide, let alone in Malaysia. Thus, it is the objective of this study to add to

the body of knowledge in the area of multiple performance measures, BSC measures in particular, and management control and performance measurement systems in general by providing empirical evidence on the usage of multiple performance measures using the BSC framework.

The performance measurement literature highlights the importance of the alignment between performance measurement systems and the firm's organizational strategy. Kaplan and Norton (1996, 2001), for example, argued that BSC systems may improve performance by translating strategy into specific objectives and measures. Surprisingly, little empirical research has been conducted so far on the performance implications of the alignment between the proposed measurement system and firm's organizational strategy. There are a few attempts to study such relationships such as Chenhall (2005), Ittner *et al.* (2003), and McAdam and Bailie (2002). However, none of these studies directly and specifically examines the impact of alignment between BSC measures (taking all the four perspectives) and specific organizational strategies on firm's financial and non-financial performance, meaning that, they did not specifically study the BSC performance measures per se and no specific strategic type is referred to. Further, this study is different from such studies in that it attempts to measure the alignment between business strategy and BSC measures using the three approaches as proposed by Drazin and Van de Ven (1985). Such alignment is important because focus can be made on the process or activities that are truly strategic for an organization's strategy to succeed. The BSC literature suggests that it is important that measures chosen and used represent the outcome of the strategic focus of the firm. In addition, strategies and objectives are considered as central contingent variables in management control systems since they can heavily influence the choice of performance measures to be used (Otley, 1999; Simons, 1995; Langfield-Smith, 1997). Since there is still little attempt to integrate the various measures and relate them to the organization's strategy, this study attempts to fill the gaps found in those studies.

From the literature, a considerable number of studies have been done on studying the relationship between contextual variables such as strategy, perceived environmental uncertainty, firm size and management control system designs. Most control system research has focused on budgeting systems (Dent, 1990) and relatively little research has been done on non-financial control systems (Fisher, 1995). According to Simons (1987), little empirical evidence exists in support of the claim that accounting control systems should be designed specifically to suit the business strategy. As a result, Simons (1987) made an attempt to investigate the nature of the relationship between control attributes and business strategy. He specifically tested the extent of differences in the control attributes of firms which follow different business strategies. However, his study did not try to examine the alignment between business strategy and performance measures which is the focal interest of this study. In fact, in the Malaysian context, to date, studies on management control and performance measurement systems and business strategies are still lacking and little research has been published in this particular area. Thus, this study intends to extend prior research by explicitly testing the relationship among perceived environmental uncertainty, firm size, business strategy, BSC measures, and firm performance. The main focus would be to investigate the impact of business strategy-BSC measures fit on firm performance.

From the perspective of theory development or theoretical contribution, this study contributes to the stream of research in management control and accounting systems, performance measurement systems, and strategic management as well as explains some of the contingency theory. According to Ventkaratnam (1989), there has been a general lack of theoretical and empirical research related to the fit concept. Most of the previous researchers have limited themselves on studying fit related to strategy, structure, technology and environment. Thus, in the literature so far, still little research has directly addressed the issue of fit of organizational strategy and

performance measurement system, in particular, the BSC. Therefore, the objective of this study is, in part, to gain some knowledge about fit in the contingency framework. This study tries to explain that, for a firm to be successful, the BSC measures usage should be aligned or fit with the firm's strategic context.

For practical contribution, there are at least two potential implications for designers of management control systems and performance measurement systems, particularly, for the development of multiple performance measures such as the BSC. First, the findings of this study can help managers in designing and implementing their performance measurement system, in particular BSC that suits with their organizational contexts. Second, this study might provide an empirical perspective on the need to align BSC measures to organizational strategy. Relationship between strategy and performance measures provides the basis in designing a scorecard that provides a comprehensive framework for translating a company's strategic objectives into a coherent set of performance measures.

1.5 Scope of the Study

This study focuses on manufacturing firms from various industries. Manufacturing firms are chosen because the use of performance measurement system in this sector is generally common. Due to greater diversity and complexity in many areas such as product markets, technological process, and cost structure (particularly overhead cost), manufacturing companies should place a greater concern for their performance measurement systems. Also, due to emergence of new management practices and advanced manufacturing technologies, the use of performance measures are expected to be more diversified and extensive in manufacturing industries as compared to service or other types of industries. Besides, manufacturing sectors in Malaysia is growing and plays a dominant role in the Malaysian economy by being the second largest sector, after services sector, in terms of its share in total GDP.

Since the study also intends to look at the influence of perceived environmental uncertainty on the extent to which a firm uses BSC measures and to which it emphasizes a particular strategy, manufacturing industry is appropriate as it is considered highly competitive and vulnerable to environmental changes. Since the samples are confined to manufacturing firms operating in West Malaysia, it is envisaged that firms operating within the same geographic area have to contend with similar factors of the environment but various affected parties might perceive the predictability of the environment differently.

1.6 Definition of Research Variables

In the theoretical framework, there are five main research variables, defined briefly as follows:

1.6.0 Perceived Environmental Uncertainty

Perceived environmental uncertainty is defined according to Gordon and Narayanan's (1984) definition where it deals with respondents' perceptions about the predictability and stability in various aspects of their organization's industrial, economic, technological, competitive and customer environments.

1.6.1 Firm Size

Mia and Clarke (1999, p. 142) defined a firm as "either an organization, or a segment of an organization, which comprises the usual business activities, such as marketing, production, finance, personnel, distribution, customer services, and the R & D". Firm size is measured in term of number of employees.

1.6.2 Business Strategy

For the purpose of this study, strategy is defined according to Mintzberg's (1978) view and is shared also by Miles and Snow (1978). According to Mintzberg, strategy is more of a pattern or stream of major and minor decisions about an organization's possible future domains. This study adopts three strategic types taken from Miles and Snow's (1978) strategy typologies, namely: prospector (emphasizes on product-market innovation), defender (emphasizes on cost control and efficiency), and analyzer (emphasize both on product-market innovation and cost efficiency). However, the three strategies are not given mutually exclusive to each firm. The approach of taking mean or average scores to measure strategy is used in this study to indicate the degree to which a firm places emphasis on three proposed strategic types.

1.6.3 BSC measures Usage

BSC measures usage is referred to as the use of a combination of measures for assessing company performance (Kaplan & Norton, 1992). Kaplan and Norton suggest that multiple performance measures should be multidimensional in nature covering both financial and non-financial measures. Thus, definition of multiple performance measures is consistent with the BSC framework proposed by Kaplan and Norton in that it consists of a causal chain of leading and lagging indicators covering four perspectives:

1. Financial – To succeed financially, how should we appear to our shareholders?
2. Customer – To achieve our vision, how should we appear to our customers?
3. Internal Business Process – To satisfy our shareholders and customers, what business processes must we excel at?
4. Learning and Growth – To achieve our vision, how will we sustain our ability to change and improve?

1.6.4 Firm Performance - Dependent Variable

This study views firm performance as effectiveness - the extent to which the unit is successful in achieving its planned targets or stated objectives (Mia & Clarke, 1999; Steers, 1977). Performance also refers to how effectively an organization is implementing an appropriate strategy (Otley, 1999). This study takes a subjective approach to measuring firm performance since objective performance indicators are of limited value in the context of this type of research because more focus is given on non-financial performance compared to financial performance. Thus, subjective approach is more appropriate in getting non-financial data as the data are not easy to be quantified in an objective way. Govindarajan and Fisher (1990) argued that there is no objective way of deriving different weights to various performance criteria and no objective measure can capture some of the factors critical to the success of certain strategies.

1.7 Organization of the Thesis

The thesis will be organized into six chapters. Chapter 1 provides the overall view of the whole research. It highlights the background, problem statements, questions, objectives, significance, and scope of the research. Chapter 2 covers literature in the areas of management accounting and control systems, performance measurement systems, balanced scorecard, environment, and business strategy. The discussion of the literature is rooted in the contingency theory and resource-based view of the firm. In Chapter 3, the framework and hypotheses of this research are developed from the general consensus in the literature regarding the relationship among contextual variables, namely, perceived environmental uncertainty, firm size, business strategy, and BSC measures, and firm performance. Also, hypothesis is proposed for the impact of fit between business strategy and BSC measures usage on firm performance.

Chapter 4 covers the methodology of the research where it explains how the research is to be carried out in order to obtain data used to test the hypotheses generated from Chapter 3. This chapter elaborates on the research design, research site, sampling and data collection procedures, questionnaire design, measurement of the research variables, and the statistical techniques used to test the hypotheses. Chapter 5 reports the results obtained from the data analysis techniques used in this study. The results cover the preliminary analyses, descriptive statistics, correlational analyses and regression analyses. Results on the fit hypotheses using selection, interaction, and systems approaches are also included. Lastly, Chapter 6 includes a comprehensive discussion of the findings and results of this study which can provide additional insights on the findings of prior research. This chapter also explains the theoretical and practical implications of this study. Finally, it discusses the limitations of the study and suggestions for future research as well as conclusions.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

The study of performance measures is much related to management accounting system, management control system, performance measurement system, and strategic management. Thus, the literature review of this thesis covers these particular areas as well as the literature on the balanced scorecard and other potential contingent variables including perceived environmental uncertainty, firm size, and strategy. The literature on management control and accounting systems suggests that the design and focus of management control and accounting systems may be related to overall characteristics of the organization (Gordon & Narayanan, 1984; Macintosh & Daft, 1987; Merchant, 1981; Waterhouse & Tiessen, 1978). This is essentially related to the contingency theory literature which suggests that efficient organizational design is contingent upon several contextual variables that surround the organization such as technology and environment (e.g. Thompson, 1967, Woodward, 1965).

The shortcomings of the traditional management accounting and performance measurement systems have become painfully obvious in recent years due to, among other factors, new manufacturing environment and increasing domestic and global competitions. Given this scenario, it is a challenge for organizations to deemphasize the use of simple, aggregate, short-term financial measures and to develop indicators that are more consistent with long-term competitiveness and profitability (Kaplan, 1983). As such, the BSC has been developed to provide a framework consisting of multiple performance measures that supplement financial measures with measures of customer, internal business process, and learning and growth. Also, the issue of alignment between strategy and performance measures provides another problem with the performance measures used in many organizations. However, it seems that this

problem can be overcome by the use of the BSC framework where it provides the articulation of linkages between performance measures and strategic objectives (Banker, Janakiraman & Konstans, 2001).

This chapter begins with the concept and evolution of management control and accounting systems and their shortcomings in today's new manufacturing environment. This is later followed by the discussion on performance measurement systems, including a discussion on the shortcomings of the traditional performance measurement system, how the non-financial measures become important, and the emergence of new integrative strategic performance measurement systems (SPMS). Subsequently, it discusses specifically the balanced scorecard, its concept, its empirical research to date, and its shortfalls. The discussion is then centered on the contingency theory and resource-based view (RBV) of the firm that underlie the theoretical framework of this research. Within the contingency framework, the discussion then deals specifically with the contextual variables involved in this research model including perceived environmental uncertainty, firm size, and strategy. Lastly, the issue of alignment between strategy and performance measures, theory and concept of fit are discussed.

2.1 Management Control and Accounting Systems

In essence, control systems can be applied at every level in an organization and they may differ among the organizational levels and situations (Atkinson, *et al.*, 1997; Fisher, 1995; 1998). Hence, there are controls at management level, corporate level as well as operational level. While management control applies to midlevel managers and operational control applies to lower echelons of the organization, corporate control on the other hand applies to the CEO and other corporate officers (Fisher, 1995). Control at the corporate levels tends to rely more on financial measures and is more infrequent compared to control at the operational level (Atkinson, *et al.*, 1997). Nilsson

(2001) argued that a control model using both financial and non-financial measures is suitable for strategic management and more useful and appropriate for low levels of organizations.

According to Fisher (1995), management control is defined as the control that managers exercise over other managers, whereas Merchant (1989) noted that management control is the process by which corporate-level managers ensure that midlevel managers carry out organizational objectives and strategies efficiently and effectively. Management control systems provide information that is intended to be useful to managers in performing their jobs and to assist organizations in developing and maintaining viable patterns of behaviour (Otley, 1999). One of the primary roles of management accounting and control systems is to facilitate the formulation, development, communication, and implementation of business strategies (Broomwich, 1990; Govindarajan & Gupta, 1985; Simons, 1990). This is consistent with Simon's (1990, p. 128) definition of management control systems as "the formalized procedures and systems that use information to maintain or alter patterns in organizational activity". Earlier, Anthony viewed management control system as the "process by which managers ensure that resources are obtained and used effectively and efficiently in the accomplishment of the organization's objectives" (1965, p. 17).

Meanwhile, the traditional framework for management control systems developed by Anthony (1965) has been commented by Otley (1999). The latter commented that the framework developed by Anthony fails to consider the aspects of operational control, strategic planning and non-financial measures which are essential in today's good management control system. Langfield-Smith (1997) has also expressed the same view whereby he argued that Anthony's definition of MCS seems limited to accounting-based controls of planning and artificially separate management control from strategic control and operational control. Subsequently, Otley (1999) has

proposed a framework for management control systems research known as performance management framework. In this framework, he integrates issues of operational activities, strategy, non-financial measures as well as external contexts within which the organization is set. In this framework, he specifically addresses issues related to objectives, strategies and plans for their attainment, target-setting, incentive and reward structures and information feedback loops. His performance management framework can be used to analyze the three major control techniques, namely, budgeting, Economic Value Added (EVA) and the Balanced Scorecard (BSC).

What is control? Control is used to create conditions that motivate the organization to achieve desirable or predetermined outcomes (Fisher, 1995). Actually, according to Merchant (1985), the terms control and management control are in more common use by those who discuss problems of control within a firm, while two other terms which are very close in meaning to control – stewardship and accountability- are usually used by those who are referring to control of managers (or other individuals) by persons outside the firm (e.g., stakeholders, society). However, Giglioni and Bedeian (1974) argued that there are two types of control. One type involves direction of subordinates in their activities which come from programming and standard operating procedures developed from firm structure, firm culture, and human resource policies. Another type is known as cybernetic control. In essence, a formal control must be cybernetic (Green & Welsh, 1988). A cybernetic control system deals with performance standards, performance measurement system, comparison between standard and actual performance, and feedback information (Green & Welsh, 1988). Subsequently, Fisher (1992) commented that empirical studies done on cybernetic control involving the non-financial measures are still lacking as compared to the financial measures. With the advent of the BSC, as Fisher (1992) viewed it as one type of cybernetic control, it shifts the focus of management control systems from relying solely on financial measures towards relying on non-financial measures as well.

Further, Fisher (1995) identified two types of control mechanism which are similar to those described by Giglioni and Bedeian (1974): general control mechanisms and formal control systems. General control mechanisms attempt to influence and control manager behaviour while formal control system is a cybernetic control system as described previously. Firm structure, firm socialization, firm culture, human resource policies, standard operating procedures, and programming are the properties of general control mechanisms while financial and non-financial budgeting and incentive compensation systems are part of the formal control systems.

Control systems have several general attributes that are used to classify and describe control systems. These general attributes are as shown in Table 2.1. According to Fisher, a tight or loose control system depends on whether or not it is difficult to achieve the budget targets and whether or not it allows revisions to the targets. An objective (or formula-based) control system is based on numerical or financial performance measures, while a subjective control system is based on the subjective judgment or non-financial performance measures as well. A mechanistic control system is more related to an objective control system, while an organic control system is more related to a subjective control system. A short-term or a long-term control system depends on whether organizations use short-term performance measures such as operating profits, cash flow, and return on investment or long-term performance measures such as sales growth, new product introduction, and research and development in evaluating their performance (Govindarajan & Gupta, 1985). While group control deals with performance measures that typically are financial, common and applied across all units of organizations, individual control, in contrast, deals with performance measures that are more non-financial, unique and individually tailored for each business unit. Interactive control involves active monitoring and intervention of managers from all levels of organization, while programmed control rely heavily on staff specialists to prepare and interpret the control information (Simons, 1990). When

compared to interpersonal control, administrative control is characterized by greater budget participation at lower management levels, greater importance placed on achieving budget plans, and greater budget sophistication (Merchant, 1981). Behavioral control deals with direct personal surveillance, while outcome control deals with measurement of outcome (Ouchi, 1979).

Table 2.1: *General Control System Attributes*

1. Tight vs. Loose Control
2. Objective vs. Subjective Control
3. Mechanistic vs. Organic Control
4. Short-term vs. Long-term Control
5. Individual vs. Group Control
6. Interactive vs. Programmed Control
7. Administrative vs. Interpersonal Control
8. Behaviour vs. Outcome Control

Source: Fisher (1995, p. 28)

With regard to management accounting system, Anthony (1989) stated that the objectives of management accounting are to assist managers and to influence their behavior in order to achieve goal congruence. Thus, the use of control is inevitable and already embedded in management accounting. For example, budgets may take an important meaning both for planning and control purposes. Since 1980's, following the Johnson and Kaplan's (1987) work on the book of "Relevance Lost: The Rise and Fall of Management Accounting", the debates on the traditional management accounting have been overwhelming. Many academicians, practitioners and researchers in accounting seem to support the Johnson and Kaplan's arguments and contentions with regards to the traditional management accounting developed during the industrial age. According to Johnson and Kaplan, from the early 1800 to the 1920s, accounting measurement and control procedures were developed to meet a demand for information about the efficiency and profitability of internally administered economic activity. After 1925, a subtle change occurred in the information used by the managers

where they relied on the financial measures alone prepared for external financial reports to make decision. Until 1980s, many practitioners and accounting experts have realized that management accounting systems devised for the 1925 environment were no longer suitable and in fact were less useful in today's environment. Johnson and Kaplan (1987) criticized traditional management accounting and control systems for focusing too heavily on the accounting or financial based measures and they tend to ignore the non-financial measures. Financial-based measures are criticized for their short-term orientation and ex post evaluation in nature, for they focus only on efficiency, promote data manipulation and thus are not adequate for ex ante evaluation and for controlling and decision making processes. Other than Johnson and Kaplan (1987), those who criticized the traditional management accounting and control systems include Shillinglaw (1989), McNair, Lynch, and Cross (1990), Maskell (1991), Nanni and Dixon (1992), Langfield-Smith (1997), and Otley (1999), just to name a few.

For Shillinglaw (1989), he argued that the traditional approaches to management accounting seem to focus on the department cost effectiveness rather than cost effectiveness, cost control rather than cost reduction, and cost as an ex post evaluation rather than cost as an ex ante issue. Standard costing system, for example, focuses too much on the labor and production efficiency and its variance reporting system seems to eliminate problems rather than to solve them (McNair *et al.*, 1990). Meanwhile, Nanni and Dixon (1992) argued that management accounting be viewed as only providing cost data, thus does not seem to support strategies and actions. Further, Maskell (1991) specifically stated several shortcomings of the traditional management accounting system as follows:

1. *Lack of Relevance.* Many of today's manufacturing strategic goals are non-financial such as customer satisfaction, quality and flexibility. These

strategic goals cannot be monitored with traditional reports which are mainly in financial, and thus, are not relevant for operational control.

2. *Cost distortion.* Allocation of overhead costs based on direct labor content will lead to a major cost distortion when direct labor only represents less than 10% of total costs.
3. *Inflexibility.* As accounting confines itself to measurable and objective data and produces consistent reports, these characteristics make accounting reports inflexible for manufacturing management. Whereas, manufacturing management should be able to modify the measures as the needs of performance measures vary among plants, products, processes and departments.
4. *Impediment to progress in manufacturing excellence.* High emphasis on machine and labor efficiency results in production in large batch size with the focus on production quantities. This is actually the opposite of the modern manufacturing, such as JIT, that focuses on small lot size, zero inventory and high quality.

Further, based on Simons (1994), Marginson (2002) clustered management control system into three groups where one of them is performance measurement system. Thus, the following section discusses specifically the performance measurement system which represents one important element of management control systems.

2.2 Performance Measurement System

Performance measurement system is one element of management control system and it encompasses the set of organizational policies, systems, and practices that coordinates actions and transfers information in support of the entire business management cycle (Nanni, Dixon, & Vollmann, 1992). For Neely, Gregory, & Platts (1995), they viewed performance measurement as the process of quantifying the efficiency and effectiveness of action where the performance measure represents the metric used to quantify the efficiency and/or effectiveness of this action. Performance measurement systems influence organizational outcome and associated with behavioral outcomes (Hopwood, 1972) and compensation or rewards system (e.g. Bushman, Indjejikian, & Smith, 1995; Vagneur & Peipel, 2000). Performance measurement system plays an important role in the efficient and effective management of organizations, yet it remains critical and much debated issue (Kennerly & Neely, 2002).

Many factors have attracted the attention of academicians, practitioners and researchers to performance measurement issue. Specifically, Neely (1999) stated seven main reasons why performance measurement has become so topical recently. These reasons are:

- (1) The changing nature of work – For manufacturing companies to survive and compete globally, the adoption of new manufacturing environments are inevitable. Today's operating environment has focused on the use of new and advanced manufacturing technology (ATMs) which resulted in direct labour rarely constituted more than 5 or 10 percent of the total cost of production. Thus, allocating overhead cost on the basis of direct labour tends to be underestimated and incorrect and in turn lead to incorrect use of financial measures.

- (2) Increasing domestic and global competition – Due to increasing competition, firms are forced to reduce costs and improve the value of their products and services. They tend to differentiate themselves from competitors by focusing on non-financial measures such as quality of service, flexibility, customization, innovation and rapid delivery.
- (3) The use of specific improvement initiatives – Usage of specific improvement initiatives such as Total Quality Management (TQM), World Class Manufacturing (WCM), continuous improvement, and lean production has forced firms to upgrade and re-engineer their performance measurement systems because all these improvement programs rely on performance measurement that enable them to deliver products and services which are of greater value to their customers.
- (4) National and international quality awards – Numerous national awards such as Prime Minister Quality Award and Quality Management Excellence Award (in Malaysia) and international awards such as Malcolm Baldrige National Quality Award in the USA, Deming Prize in Japan, and the European Foundation for Quality Management (EFQM) Award have been introduced to encourage firms to achieve substantial improvements in business performance. Another award called NAFMA (National Award for Management Accounting) has been established in Malaysia by The Chartered Institute of Management Accountants (CIMA), Malaysia Division and the Malaysian Institute of Accountants (MIA). The objectives of NAFMA are: (1) To recognise organisations adopting best practices in management accounting and creating value that leads to business excellence, and (2) To promote the application of management accounting techniques and systems within organisations in Malaysia in the pursuit of world class business performance. Therefore, the implication for business