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For which purposes do managers use Balanced Scorecards? An empirical study

Eelke Wiersma

VU University Amsterdam, Department of Accounting, De Boelelaan 1105, Room 2A-72, NL-1081 HV Amsterdam, Netherlands

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ABSTRACT

The accounting literature frequently publishes articles that establish the adoption rates of accounting information systems, such as the Balanced Scorecard (BSC) or Activity-Based Costing, and subsequently examines the factors that drive this adoption. However, much less is known about the specific purposes for which these systems are used.

In this paper, I examine the purposes for which managers use the Balanced Scorecard. Data was collected from a survey administered in 19 Dutch firms which had indicated that they used a BSC. The survey resulted in 224 responses from individual managers. Using exploratory factor analysis on Doll and Torkzadeh's [Doll, W.J., Torkzadeh, G., 1998. Developing a multidimensional measure of system-use in an organizational context. *Information and Management* 33, 171–185.] instrument of multidimensional MIS usage, I find that managers use the BSC for: (1) decision-making and decision-rationalizing; (2) coordination; and (3) self-monitoring.

In the second step, I consider drivers of BSC usage for the three different purposes. These drivers are dimensions of evaluation style, alternative controls that are used in the organizational unit, and the receptiveness of managers to new types of information. I find that BSC usage for decision-making and decision-rationalizing purposes is driven by the degree of action controls used and manager's receptiveness to new information types. BSC usage for coordination purposes is driven by the emphasis placed on managerial evaluation of subordinates and the manager's receptiveness to new types of information. Finally, BSC usage for self-monitoring purposes is driven by the emphasis placed on managerial evaluation.

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1. Introduction

A number of innovative management accounting techniques have been developed over the past two decades, the most widely known of which are Activity-Based Costing and the Balanced Scorecard (BSC). Prior literature evaluates the success of these techniques by estimating its adoption rates and testing relationships between use and different types of outcome measures. Outcome measures used are, amongst others, use of the system, impact on decisions made based on information from these systems,

dollar improvements following implementation of the system, and management evaluation of system success (Foster and Swenson, 1997). This study not only assesses the level of use, but also focuses on the purposes for which managers use the BSC.

Many factors influence individual BSC usage. First, usage is influenced by the way the organization intends to use the BSC, and therefore by the design of the scorecard. Second, individual usage is influenced by the opinions of top management, supervisors, and other colleagues of BSC users, and by other elements of the control system available in the firm. Together, these factors lead to a varying degree of pressure on individual BSC users to use the scorecard, i.e. the subjective norm. As Hartwick and Barki (1994) argued,

E-mail address: Ewiersma@feweb.vu.nl.

however, when system usage is mandatory, i.e. the subjective norm to use the system is strong, the intensiveness of use might still vary. Some managers will use the system all the time, whereas others will use it selectively, e.g. when they consider using it to be effective. This implies that even if BSC usage were mandatory in a firm, both the intensiveness and purposes of use might vary among managers. In this paper, I explore this individual BSC usage in the context of organizational usage (firm effects).

I address a number of avenues for further research raised by Malmi (2001). First, he suggests that future research should study whether we can explain various types of BSC usage by looking at firm characteristics. Second, he suggests that we know little about the impact of using the BSC on other control mechanisms in the firm. I provide additional insights into these questions for BSC usage at the individual manager level.

First, I explore the purposes for which managers use the BSC. For this analysis, I adopt an instrument developed by Doll and Torkezadeh (1998) which measures the multidimensional usage of a management information system (MIS). The instrument mainly captures BSC usage for decision-making and is less well developed for measuring usage for control purposes and strategy communication.¹ Provided that individual usage is examined in this study, and that the communication of strategy and control of employees are primarily firm purposes, these limits do not seem to be too severe. Second, I explore the drivers of these different purposes of BSC usage. These drivers are the evaluation style of managers, other control mechanisms used in the organizational units, and the receptiveness of managers to information from modern performance measurement systems. Use of performance measurement systems is influenced by how managers evaluate their subordinates (Otley and Fakiolas, 2000). The BSC consists of a number of different types of measures that make a distinction between financial and non-financial measures, objective versus subjective measures, leading indicators versus lagging indicators, and measures that are easily quantifiable as opposed to measures that are more difficult to quantify. Managers can therefore evaluate performance on many different dimensions. The way managers evaluate their subordinates' performance is therefore expected to influence the intensiveness of BSC usage and type of BSC usage. Based on an exploratory factor analysis, I identify three different dimensions of evaluation style. These dimensions include whether managers have a rigid or a flexible evaluation style to evaluate their subordinates; whether they value financial or non-financial performance measures more strongly; and whether they value quantitative or qualitative performance measures more strongly. Further, usage of the BSC takes place amid the usage of other control mechanisms, because firms often use a package of controls (Otley, 1999). The design of this control package is also expected to influence intensiveness and type of BSC usage. Finally, the adoption diffusion literature suggests that some individuals are more innovative and more eager to experiment with new systems than others (Rogers and

Shoemaker, 1971). Therefore, greater receptiveness on the part of managers to use new types of information sources is expected to result in higher BSC usage. The different dimensions of BSC usage and evaluation style are both identified from an exploratory factor analysis. Therefore, the nature of this study is exploratory.

The survey was conducted in 19 firms identified as BSC users. The sample consists of 224 managers responsible for the BSC of a department or business unit in these firms. From an exploratory factor analysis, I find three different purposes of BSC usage: (1) a decision-making and decision-rationalizing dimension; (2) a coordination dimension; and (3) a self-monitoring dimension. The three resulting dimensions have a moderately high correlation with each other, suggesting that these purposes of use are complementary. BSC usage for decision-making and decision-rationalizing is positively related to the number of action controls used and manager's receptiveness to new types of information. BSC usage for coordination purposes is also positively related with manager's receptiveness to new types of information and positively related with the emphasis placed on managerial evaluations of subordinates. Finally, BSC usage for self-monitoring is positively related with the emphasis placed on managerial evaluations.

I make three contributions to the literature. First, instead of simply measuring the degree of BSC usage, I explore whether managers use BSCs for different purposes. Thus, I focus on BSC usage at the individual management level. Second, in line with the comments on the narrow and outdated measurement of the concept of evaluation style (Otley and Fakiolas, 2000), I identify additional dimensions of this concept. Otley and Fakiolas (2000) argue that the original 'reliance on accounting performance measures' (RAPM) instrument was built in an era when budgets were the only control mechanism used in firms. In the context of more contemporaneous control mechanisms, such as the BSC, additional dimensions of managerial evaluation style can be expected. Finally, I explore whether these different dimensions of evaluation style, other controls used and the receptiveness of managers to new information types are associated with BSC usage for different purposes.

The remainder of the paper is structured as follows. In the next section, I describe purposes of BSC usage, Doll and Torkezadeh's (1998) instrument that measures multiple dimensional usage of management information systems, and potential drivers of these different purposes. In Section 3, I outline the sample and the procedures used to administer the survey. In Section 4, I provide the empirical results of the study. Following the discussion of the results in Section 5, I conclude the paper with a summary in Section 6.

2. Literature review

2.1. Purposes of BSC usage

Initially, Kaplan and Norton proposed that the BSC was a 'regular' performance measurement system incorporating both financial and non-financial measures. However, in the mid-1990s they started to emphasize the strategic nature of the instrument (Kaplan and Norton, 2000). In their opin-

¹ I thank an anonymous reviewer for this observation.

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