



FACTORS INFLUENCING THE USE OF BALANCED SCORECARD:

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Abstract: <p>The Balanced Scorecard (BSC) came to the fore following drawbacks from using financial measures only to measure company performance. Managers are using BSC to communicate their strategy, for planning and controlling, for getting feedback and, for performance monitoring. This study examines the factors that influence managers to use the BSC. Identifying the factors will help to explain why some companies using BSC succeed while others fail. Also, it will help managers using BSC to know where to focus their attention in order that the goals of the organization can be met.</p> <p>With the help of Webropol, a survey questionnaire was created that was used to collect data for the study and the ordinary least square (OLS) regression method was used to analyse the data. The sample comprise of 34 managers using BSC in Finland out of the 300 questionnaires sent. Therefore, the response rate was 11.33%.</p> <p>Our goal was to examine the effects of the following independent variables: Other control systems (OCS) use in the organization, how managers evaluate their subordinates (ESM), how they perceive information from new sources (MRI) and the impact of technology (i.e. perceive usefulness (PU) and ease of use (PEOU) of BSC, on the dependent variable, i.e. use of the BSC by managers. The results show that the way managers perceive information from new sources (MRI) and the perceived ease of use (PEOU) of the BSC system by the managers' influences them to use BSC.</p>	
Keywords: Balanced scorecard, Key performance indicators, management control systems, performance management, Technology Acceptance Model.	

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1 INTRODUCTION

This chapter presents a brief introduction of the research project. It covers the research background, objectives, structure and limitations of the study.

1.1. Study background

For a long period of time profitability measures has been in use as benchmark for good company performance. But with the dawn of the knowledge economy, those profitability measures have somehow become redundant because they present just the company's current performance and say little concerning its going concern. It is against this backdrop that the balanced scorecard (BSC) was introduced (Kaplan and Norton, 1992). Kaplan and Norton (1992) introduced the BSC because the present management system at that time was mainly focused on measuring performance based on financial measures. They argue that by focusing on financial measures, managers tend to forget other aspect of the business that is vital for the company's success. They believe that a company can stay in business only if it improves on its processes, maintain good customer relationship, is innovative, and above all, try to learn all the time.

Indeed, the balanced scorecard concept has attracted a lot of research attention among academics and practitioners. According to Wiersma (2009) BSC is the most profound innovation in management accounting along with Activity Based Costing. In most of the developed world there are reports of major corporations experimenting with BSC (Speckbacher, Bischof and Pfeiffer 2003). Early researchers on BSC focused on understanding the concept and how to implement it (Malmi 2001). However, in a more recent study Wiersma (2009) has shown that the BSC concept has actually been endorsed by major Corporations around the world with the software market being inundated with a plethora of BSC application software's.

What purpose do BSC serve in an organization? Do managers use BSC to accomplish their daily tasks? These questions are asked so that we can understand the exact role BSC play in an organization. As observed by Malmi and Brown (2008), BSC is not the only control tool used in an organization. In fact, Malmi and Brown (2008) have pointed out that companies use a package of control tools to manage their

operations. Therefore, whether the BSC was supplementing or complementing the different management control systems in an organization remain to be established.

So far, various attempts have been made to actually identify the purposes for using BSC. Some studies have attempted to pinpoint the business value of BSC and have benchmark the performance of BSC users with those of non-users to see whether their performance differs (Davis and Albright 2004). To ensure that BSC is use in both small and large corporation, a structured methodology to help small and mid-size (SMEs) companies implement the balanced scorecards has been developed (Fernades, Raja and Whalley, 2006). Unfortunately, most of the studies on BSC adoption have focused only on adoption at the organizational level ignoring to examine the motive behind using the system by the individual end users that is the managers even though managers are to blame for poor organizational performance.

Holden and Karsh (2010) have pointed out that the adoption of an information system goes beyond mere design or purchasing of a reasonably functional technology. More recently, the performance management experts 2GC Active Management (2010), found out that BSC was mainly used at the executive director's level in an organization and in divisions of large corporation for strategic management, monitoring and evaluation of company's performance. Therefore, of interest will be to know the factors that influences or that may influence these executives (managers) to continue using BSC amidst the different control systems in the organization since the utility of any technology is decided only through its use.

1.2. Aim and purpose of the study

The BSC is one of the many management control tools at the disposal of the manager to use in performing their managerial duties. It will therefore be of interest to understand what motivates managers to use BSC when carrying out their functions. The purpose of this study therefore, is to find out the uses of BSC and the factors that may influence the manager to use BSC. The factors examined include; other control systems in the organization (OCS) used alongside the BSC, how the manager perceive information from new system (MRI) and how the manager evaluate their subordinates (ESM) i.e. whether they place more emphasizes on financial or non-financial

information when evaluating subordinates. These variables are drawn from prior research by Wiersma (2009) who identified the different dimensions for which managers use BSC. By focusing on these dimensions for using BSC, we intend to evaluate how the individual manager characteristics (i.e. their evaluative style, how they perceive new information and the effects of other control systems in the organization) influences them to use BSC.

Further, I examine the impact of technology on using BSC because; the popularity of the BSC concept has encouraged software providers to develop applications for implementing the concept. However, most of these applications have become sophisticated and difficult to use making managers to shun their usage. (Wiersma 2009). How technology impact use of BSC is measured with two constructs of the technology acceptance model (TAM). The TAM is a popular tool for assessing how end-users come to accept and use technology. The two core constructs of the technology acceptance model (i.e. perceived usefulness (PU) and the perceived ease of use (PEOU) have been added to the research model. These additional variables aim to capture how managers feel while using their BSC systems since how they perceive the system to be useful and easy to use will influence the acceptance and use of the system (Davis 1989).

1.3. Structure of the study

The study is organized into seven chapters. Chapter one presents the background to the study, the research objectives and structure. The remainder of the study is structured as follows. In chapter two the BSC concept is fully explored beginning with a working definition for the BSC, types of BSC, and perspectives of BSC are discussed. The chapter also explains BSC as a management control tool, the formulation of measures, and the number of measures that could be included in a BSC framework. The chapter ends with a concluding paragraph which summarizes the key topics discussed in the chapter.

Chapter three looks at the purposes for which managers use BSC and the factors influencing the manager to use BSC. The chapter further discusses the organizational factors and the personal characteristics of the manager that may influence their use of BSC.

Chapter four concentrates on how technology influences managers to use BSC. The technology acceptance model (TAM) is introduced and discussed. In addition, selected studies which have validated or extended the use of the TAM in relation to management information systems (MISs) are reviewed.

In chapter five we present the research methodology. The chapter covers the research model and questions, the hypothesis development, data collection method and how the research data are analyzed.

In chapter six the findings are presented and evaluated followed by a discussion on the implications of the study, conclusion and proposal for future studies.

Finally, chapter seven discusses the results by comparing the findings with earlier studies and specifying the practical implications of the study to both managers and researchers.

2 LITERATURE REVIEW

In the literature review, we try to explore the BSC concept by critically examining some of its basic assumptions. We proceed to review selected papers on the BSC. The chapter is structured as below.

In Section 2.1, the BSC concept is explored by examining some of the ways the concept has been define and looking at some implementation issues and performance impact. Then we discuss the types of BSC in section 2.2, followed by how the BSC measured are derived in section 3.3. Next, the BSC as a management control system is also discussed, and then we end the chapter by examining some of the drawbacks of the BSC.

2.1. The balanced scorecard concept

The BSC is undoubtedly the most popular management system in organisations today (Wiersman 2009), its popularity comes from the belief that it brings all of the strategic objectives of a business into a single and balanced framework (Kaplan and Norton 2003). The BSC concept was introduced following a lot of critic from using only financial measures to evaluate the performance of a company. Kaplan and Norton (1992) proposed that financial measure of a company's performance be supplemented with other measures that will capture the intangibles assets of the organization meaning that measures like; customers, internal process, learning and growth, were to complement financial ones to give a clear picture of the company's performance. Kaplan and Norton (1992) define the BSC as a balanced measurement system which provide top management of the organization with a quick and yet comprehensive view of the organizational performance. An analogy they use to describe the BSC is a pilot cockpit whereby, the pilot is presented with a dash board of control buttons to use and steer the plane. Each button is used to measure and control different things (light, altitude or speed etc.) which together enable the plane to fly safely. Likewise, the measures in the balanced scorecard framework help managers to make better decisions that will lead the organization or business unit to succeed. The basic framework of the balanced scorecard is presented in figure 1 below. The figure shows the four

performance measurement areas of the business where the manager should ensure the vision and the strategy of the business are in congruence. (see figure 1).

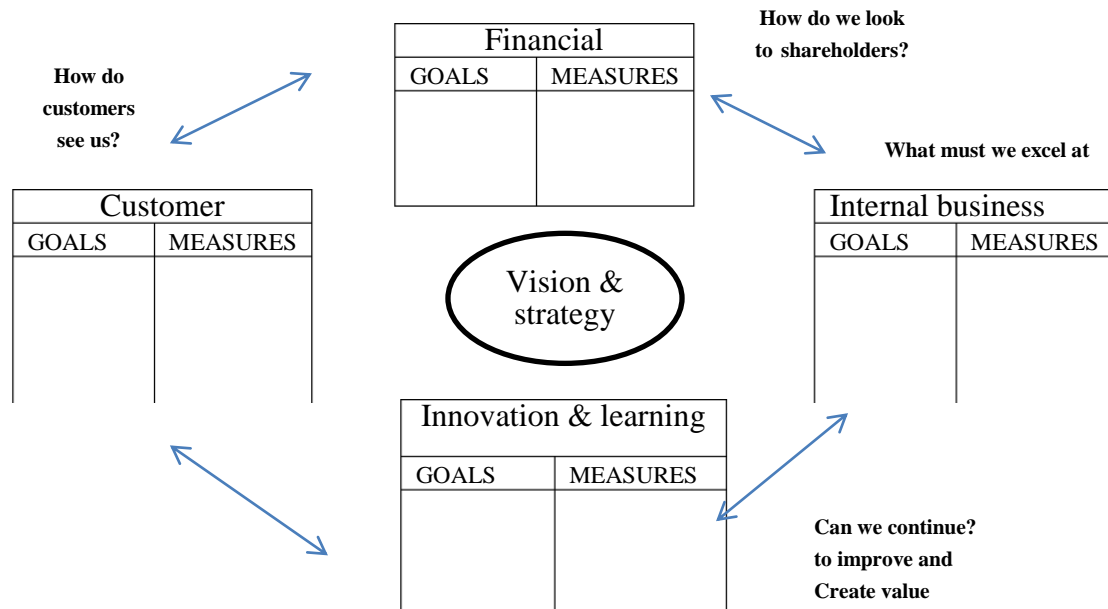


Figure 1: Balanced scorecard framework

Source: Kaplan and Norton 1992

In the literature review process, it seems unlikely that one particular definition is used in the different studies, thereby making it difficult to settle on a standard definition for the BSC. Nevertheless, Malmi (2001) recommends that the success of BSC be judge based on the purpose for adoption because it is only by putting BSC into context that its role can be appreciated in an organization. He therefore point out that a better way is to look at the BSC based on purpose for adoption, its role in the organization and the desired benefits anticipated from using it. The figure below depicts the BSC framework.

Other management scholars have attempted to define or to describe BSC, for example, Niven (2002) consider BSC to be a set of measures derived from an organisational strategy that helps management of the organisation to communicate the outcomes and performance drivers by which the organisation plans to achieve its mission and strategic objectives. The author goes on to explain that, the BSC comprise of three systems: a measurement system, a strategic management system and a

communication system. Likewise, Olve (2003) considers balanced scorecard as a customized communication tool within a management control system applied at different levels of the organization and for different strategies. The author sees BSC as a communication tool and management control system that is used across the organisation.

Previous studies on balanced scorecard

There is a tremendous amount of information on the subject of BSC, starting from when the concept was introduced until today that the concept has become the most popular tool in the field of management accounting. The earlier researchers focused their attention at understanding the concept by investigating organizations that purported to use BSC so as to understand what BSC meant to them. In Finland for example, Malmi (2001) interviewed managers from several organizations and their business units in order to gather the perception of the managers concerning BSC. In other countries, especially those in the western world, similar experimentations with the BSC were undertaken (Heinz 2001 and Speckbacher et al. 2003). Kaplan and Norton (1996) describe BSC as a management communication tool that could be used to spread the vision of the organization to its stakeholders and to communicate and measure the success of the strategy. This view was validated by Malina and Selto (2000) in their study of a large manufacturing organization that had implemented the BSC. Similarly, other researchers have found the BSC to be an instrument that could facilitate the planning process and serve as a means of getting adequate feedback from performance.

A second wave of researchers have focused on measuring the business value from implementing BSC by comparing the performance data of adopters before and after adoption or data from peer company to establish if their performance differs owing to using BSC (Davis and Albright 2000). As the bottom line measure of a company's performance is the shareholder value creation, a substantial amount of research has been done to herald the performance of companies using BSC in both the private and public organization. Studies by Crabtree and DeBusk (2008) and Greatbanks and Richard (2007) prove that firms that adopted the BSC significantly outperform firms that did not adopt BSC using different matching criteria. Greatbanks and Richard (2007) acknowledged that BSC could be quite useful in a public setting organizational context as their study shows how a public sector city council was able to use BSC to enhance the

planning process, team management and improve the performance of the individual staff. Likewise Fernandes and Kiran (2006) concentrated their study on small and mid-size enterprises (SME) and found out that the BSC constitute quite a useful tool for SMEs also.

More recently, the divergent results obtain from using BSC has prompted researchers to actually look into the other variables that can lead to a successful implementation of the BSC. In this regard Law and Ngai (2007) found that factors like the skills of the in-house IT staff, support from top management, extend of business process redesign (BPR) and the IT infrastructural compatibility impact the success of enterprise resource planning (ERP) system adoption. Since most ERP applications have a module for BSC, these factors also apply to influence BSC adoption success although at the organizational level. Wu et al. (2008) corroborate these results by pointing out that the leadership style of the managers and the availability of IT resources within the organization will positively impact the adoption outcome of a management information system (MIS).

There have been a lot of studies on variables at the corporate level in the organization that influence on the adoption and possible success from implementing a management accounting system. But few researchers have focused their attention on the attitudes and the behaviours of the managers responsible for realising the performance goal.

Sandelin (2008) explore how cultural, personal, action and results controls work together to achieve performance goals in a growth firm context. In the paper, the author argues that the type of controls to introduce in an organization depends on the functional demands of the managers pointing out that in most small firm's controls is largely informal and as the firm grows the need for formal controls become apparent. According to Sandelin (2008) the use of informal cultural, personal and action controls working in harmony can substitute for a more formal control system in an organisation. The paper shed light on how the different types of control in an organization affects the performance of the organization by arguing that performance objectives can be achieve by various control system both formal controls and informal form of controls.

Also, Baird, Harrisson and Reeve (2004) studied the effects of strategy and organisational structure on the adoption and implementation of activity management

practices by firms in Australia. They found that business unit size and three business unit cultural dimensions (innovation, outcome orientation and tight vs. loose control) were associated with activity management practice adoption and use. He goes on to say multiple means of control in an organization do not only complement each other but can even substitute one another. In discussing the state of management control practices, author argues that management control do not only involve adoption of management accounting systems (MAS) but also include subjective judgements and evaluation.

In the same way Wiersman (2009) identified some of the factors that motivate individual managers to adopt management accounting practices. The factors includes: the other control system already in place in the organisation (OCS), how the manager evaluate subordinates (ESM) and how receptive are the managers to information from new sources (MRI). The data for the study was collected using a survey questionnaire to nineteen Dutch firm and a few hundred managers responded. By using factor analysis he came up with three dimensions for which individual manager's use BSC: decision support (making decisions and rationalizing the decisions), coordination of work and for self-monitoring of performance.

2.2. Types of balanced scorecard

In explaining what makes a measurement system BSC, Malmi (2001) observed that companies and their business units in Finland were using BSC either as a mere information system or a management by objective (MBO) tool i.e. like a key performance indicator (KPI) scorecards. According to Malmi (2001), the KPI scorecard is a set of strategically relevant information on the company's performance compiled in a framework to help the managers focus. He points out that in companies where there are no targets for the measures in the scorecard, the scorecard barely represents an information system (IS) because there were no targets set that needed to be measured. He goes on to state that the KPI scorecard only reports on the performance of the organization from its main area of operations believing that most of the early adopters of the balanced scorecards used but the KPI scorecards.

Although the KPI scorecard is design to comprise of all the relevant measures considered to be crucial for the organization's success, it has been widely criticized for

not reflecting the organization's strategy. Since, they comprise mainly of the results from past activities, (i.e. lagging performance indicators) and the measures are usually developed from the KPI in each of the BSC perspectives usually neglecting the linkages between the different perspectives of the BSC. Moreover, as each of the BSC perspective will normally have more than one measure, the KPI scorecard has been criticized for being a bunch of measures with no causal link between them as prescribed in the BSC literature.

On the other hand, Kaplan and Norton (1996) points out that the strategy scorecard is developed based on the strategy of the company. In building the strategy BSC, the governing body of the organization defines what needs to be measured, set targets for each measure and assigns someone the responsibility for achieving those targets, and then rewards them based on the level at which the targets are achieved. Kaplan and Norton (1996) further pointed out that the strategic scorecard takes a long term view of the organization. They argue that such scorecards normally will include both leading and lagging performance measures which has been developed based on a cause and effect relationships of the organization's strategy. The focus in the strategy scorecard is therefore, on communicating the organizations goals to every employee using strategy maps.

Lastly, Jensen (2002) describes BSC as a managerial equivalent to the stakeholder theory. The theory explains that firms should consider the interest of the different stakeholders when executing their strategy. This theory contradicts value maximization theory which states that firm maximizes value in a competitive market environment. The stakeholder scorecard like the stakeholder theory is the idea that companies should consider the interest of the different stakeholder such as; employees, shareholders, and the society when implementing strategy. The stakeholder scorecard then should report on the performance of the major stakeholders of the organization. In most of the stakeholder scorecard, performance indicators are assigned to the different stakeholders like Shareholders, customers and employee. Also, the stakeholder scorecard may aim to fulfill other corporate governance and social responsibilities needs of their organizations. This makes it possible in a stakeholder scorecard for it to have as many

dimensions of measures as the needs of the company permits in order for it to achieve its goals.

According to Kaplan and Norton (2001) a stakeholder scorecard defines the goals of the organizations for its major stakeholders. This type of scorecard has been widely criticized. Jensen (2002) argues that an organization cannot pursue multiple objectives at a time and be successful as the stakeholder BSC specifies. Likewise it is argued that the stakeholder scorecard only cares about the goals of the stakeholders and do not explain the strategy of the organization to its members thereby not actually serving as BSC of performance measures (Kaplan and Norton 2001).

To conclude, three types of BSC exist, a stakeholder scorecard, key performance indicator (KPI) scorecard and a strategy scorecard.

2.3. How to derive balanced scorecard measures

In general, there are two ways through which BSC measures are derived. First, when BSC is use as an information system it means there are not targets to measures and no one is accountable for the measure but when the scorecard is used as a MBO tool, then the measures are derived based on the key performance indicators (KPI). The KPI are those measures which the organization must excel at for it to realize its vision. A drawback to derive BSC measures by means of KPI is as follows. The KPI scorecard may emphasize what to measure in each BSC perspective while ignoring the link between the different perspectives. That means the perspectives are not linked to each other. In situations where there is more than one KPI in the different perspectives, the BSC becomes full with measures. Therefore, it makes it difficulties for the employee to understand the business strategy. Yet, according to Malmi (2001) such BSC can be useful if the purpose for implementing the BSC is to reflect the level of organizational performance.

The second way of deriving BSC measures is to generate them from the business strategy. In this case, the business strategy is seen as a series of cause and effect relationships between different perspectives and measures in the BSC. For example, if an organization aim at maximizing its return on capital employed (ROCE) a lagging

indicator of performance, then the rest of the measures; process quality, on-time delivery and loyal customer base are the indicators that will lead the organization towards attaining the ROCE goal. Therefore, for the company to realize higher ROCE, it must train its employee to perform better. Better training will reflect in the process quality, on-time delivery of services, satisfied customers, revenue increases and higher ROCE for the firm. Thus, at each stage of executing the strategy, measures are assigned that will help lead us to attain the ROCE goal. How many measures can we have on our BSC?

The amount of measure to be included in the scorecard should also vary depending on the purpose for using the BSC. In an exploratory study Malmi (2001) found that most of the early companies which adopted BSC in Finland, had at least a minimum of four measures in the BSC and a maximum of 25 measures overall. Although the managers have the discretion of choosing the number of perspective and measures for their BSC, Kaplan and Norton (1996) recommended that the measure be about 20 – 25 for a typical balanced scorecard.

2.4. Balanced scorecard as a management control System

Management control systems (MCS) are the information systems and the various applications software's that managers use to direct the behaviors and actions of its members towards the goals of the company. Otley (1994), define management control as 'the process by which managers assure that resources are obtained and used effectively and efficiently to accomplishment the goals of an organization. In another study, Otley (2003), considers the BSC as a novel management control tool. In fact, the BSC was design to serve as a control tool for managers originally. In their earlier writings on the BSC, Kaplan and Norton (1992) define BSC as a set of measures that give top managers a fast view of their business. These measures were aim to help managers control their organization. To use BSC as a management control tool involves four processes shown in *Figure 2*; namely;

Clarifying and translating the vision and strategy of the organization. This process enables that, managers agree on the direction the company should follow and make it

known to other employee. This involves setting appropriate targets and motivating the employee to reach them. The second process, communication and linking; ensures that the goals of the organization is made known to all the different units of the organization. The process involves linking the business unit goals to those of the organization. It also involves coordination of the various departmental activities such that a common vision is shared among organizational participant. The third process, planning and target setting, ensures the business plans is in line with the financial goal. In the planning and target setting process, the how to achieve organizational goals are elucidated and the measures in the BSC are use as the basis to allocate the resources. The final process, feedback and Learning; makes sure adequate feedback is received from the various activities. The feedback process begins with a clarification of vision for the organization. The whole process form a loop, whereby the feedback received from the management process are then used again to reshape corporate strategy and the process goes on and on.

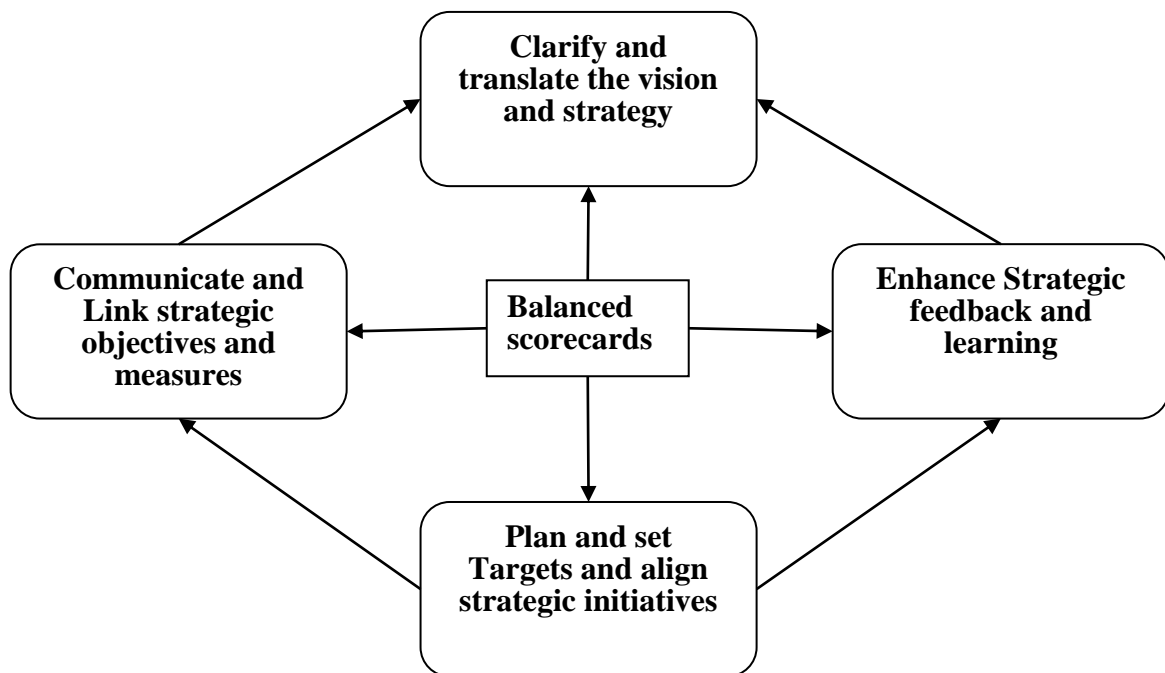


Figure 2: Using the BSC as a strategic Management system

Source: Kaplan and Norton, 1996

2.5. Limitations of the balanced scorecard

The BSC has its own drawbacks. The criticisms levied on the concept target different areas and theories which have developed surrounding the BSC concept. To begin with, it is argued that the concept is not new. The notion that BSC is a new management system is contemptuous. Because, the French for example used the *tableau de Bord* which is widely considered to be a similar concept to BSC long before the BSC was introduced (Bourguignon, Malleret and Nørreklit 2001) . Also, the idea that BSC could be used in all type of businesses is disputed too.

Other critics of the BSC like Norreklit (2000) believe a persuasive rhetoric was used to introduce BSC arguing that that most organizations that used BSC did so because they saw BSC to be a management fashion sweeping the business world. He further pointed out also how the assumed cause effect relationships in business strategy at times do not hold. That is to say, the assumption that improvement in the customer perspective will automatically lead to improved financial results is not always true. Other shortcomings of the BSC frequently cited in the literature concerns maximizing multiple objectives at a time. Yet, according to Jensen (2002), a firm cannot maximize several objectives at the same time. Thus, the stakeholders BSC do not specify any single objective which the organization aims to achieve, instead it gives managers an unlimited power to do what they want only subject to restrictions from the financial markets. Jensen (2002) further argues that by just presenting managers with a list of measures, it is hard for them to make purposeful decisions based on such information.

2.6. Summary of the chapter

This chapter focuses on the balanced scorecard concept. The BSC concept is better understood by looking at what it is being used for and the intended benefits from using it. BSC was defined as a balanced measurement framework which gives managers (top managers) a quick and complete view of the performance of their organizations. Also, we discussed how measures are derived for the BSC. The measures in the BSC may be derived from the key performance indicators of the different perspectives in the BSC or from the strategy of the organization through a causal logic. The BSC is popularly

known as strategic management system. In this this chapter, the close loop in a strategic management system was examined. We describe how the strategic management process starts with clarifying the vision and mission of the organization, communicating them to members, planning and controlling the business strategy, and receiving feedback processes all add together to form a loop in the BSC management system. We again looked at issue related to the number of perspectives and measures in the BSC framework. Kaplan and Norton (1996) point out that the decision as to number of perspective or measures to be included in the scorecard remains the discretion of the organization and its managers. However, they gave of course some guidelines to follow. In their various publication Kaplan and Norton (1992, 1996, 2001) recommends that the number of measures in each perspective of the BSC should be in the range of between 8-12 measures and that the overall measures in the BSC framework should be between the range 18- 25 measures.

In this chapter also, we discussed the different types of BSC. Balanced scorecards can be grouped into three types: Stakeholders scorecard, Key performance indicator scorecard and a strategy scorecard. It is argued that most of the BSC system in place is key performance indicator scorecards. However, the strategy scorecard is hardly ever used by most corporations. The strategic scorecard is supposed to show the cause and effect relationships in the business strategy and most organization hardly build their BSC based on this model. The BSC is not without its own critics though. Among the criticism is the notion that the supply side organizations of the BSC have had a significant effect on the decision of most organization to adopt balanced scorecards (Malmi 2001). Furthermore, Jensen (2002) argued strongly that it is difficult for a company to maximize several objectives at the same time jointly as the stakeholder scorecard theory advocates.

3 PURPOSE FOR USING BALANCED SCORECARD AND FACTORS THAT AFFECT USAGE

Introduction

The chapter starts with the purpose for using BSC. The purposes for using BSC by managers are divided into corporate purpose and the individual manager purposes. The factors influencing or that may influence individual managers to use BSC is the focus of this research. While the literature on the corporate purpose for using BSC will be reviewed, more attention is given to the use by individual managers. Thereafter, the factors that influence usage of the BSC at the individual manager's level are explored in more detail.

The chapter is further organized as follows. In section 3.1, the purpose for using BSC at both the organizational and individual managers level are discussed. Then, the factors influencing using the BSC at the organizational and individual managers level is examined with a focus on the individual managers. More precisely, in sections 3.2.1 we explore factors at the organizational level, whereas in section 3.2.2, our attention is directed to the characteristics of the individual manager that affect using BSC.

3.1. Organizational and Individual managers purposes for using balanced scorecard

Little is known concerning the exact purpose for which organizations use BSC, because most organizations use a package of control mechanisms (Malmi and Brown 2008). Some organizations still use budgetary controls, others use Economic value added (EVA) and yet some use the return on investment (ROI) measures, or a combination of two or more of the management techniques. While we begin our discussion with the purpose for which organizations use BSC, we will likewise examine the factors that influence individual managers to use BSC. Because the organization purpose for using the BSC differs from the individual managers' purposes for use.

In the BSC literature there are many reasons to justify why organizations use BSC. Most companies use it for the following: to improve control, efficiency and strategic

learning within the organisation, to improve communication and understanding among the stakeholders of the organization, for implementing change in the organization and for the measurement of the non - financial aspects of the business (Kaplan and Norton 1996).

Almost two decade following the introduction of BSC; a considerably larger amount of studies have been carried out on the usefulness of the BSC system. Malina and Selto (2000) concluded in their study of a large manufacturing organization that the BSC was an effective tool for communicating the goals of the organization to its entire member. Also, Malmi (2001) has identified five reasons that appear to influence the decision of companies in Finland to adopt the BSC. The pursuit of quality awards such as Total Quality Management (TQM) certification, difficulties associated with executing strategy, problems related to implementing change within the organization, a change from the budgetary practice to a BSC framework and lastly, a mere fashion sweeping the organizational world. Likewise, Crabtree and Aaron (2008) found that many firms adopt BSC as a way to implement strategy and measure firm performance. Their study compared stock market return of users and non-users of the BSC for a three year period starting from the year of adoption. They found that the firm that adopted BSC performed better than those that did not.

Wiersman (2009) has argued that although a firm might decide to implement an Information System, use of it by individual managers will still differ. This is because individual managers have their idiosyncrasies. Some Managers are more innovative than others. That is to say, innovative managers are quick to adopt new accounting systems whereas; their counterparts (less innovative managers) are not. Therefore how the individual manager's use BSC will differ greatly among managers. He further observed that managers use BSC to support their decisions making and rationalism. Decision support means they use it in two ways. The first is for problem solving and the other for decision rationalizing. To use BSC to solve problems means that managers use BSC report to justify that the reported measures are accurate based on the cause and effect logic of the BSC model.

On the other hand, decision rationalizing purports to rationalize business decisions based on information from the BSC reports especially to superiors. Also, they use it for

coordination of work and for self-monitoring of their performance. Accordingly, the use of BSC for coordination encompasses using it to integrate work both horizontally and vertically. Horizontal integration involves coordinating one's own work with others in the work group. Whereas, vertical integration takes into account how the individual managers organise their own work and communicate vertically with superior and subordinates alike. And lastly, the self-monitoring dimension refers to using BSC to monitor and plan the work of the manager and to get feedback on performance.

3.2. Factors influencing use of balanced scorecard

The factors influencing the use of BSC can be grouped under two main headings as follows; organizational factors and the characteristics of the Individual managers. The managers' characteristics are further sub divided into three broad headings namely; how the other control systems in their organizations affect their usage of BSC, their receptiveness to information from new accounting information system and how they evaluate their subordinates i.e. do they rely more on financial or non-financial information in making judgments.

3.2.1. *Organizational factors*

The balanced scorecard has been described in many ways. Some authors when discussing BSC refer to it as a performance management system (PMS), management information system (MIS), a strategic management system (SMS) or a management control system (MCS). The factors that motivate implementation of such systems at both the organization and the individual use level by the manager vary. Factors like size of the organization, market share and high turnover have been associated with the adoption of such system. Other factors like leadership style, organizational learning and availability of IT resource constitute internal factors within the organization that also influence the adoption of MIS (Wu et al. 2008). According to Law and Ngai (2007) factors such as the skills of in-house IT staff, support from management, business process redesign and IT infrastructure compatibility have an impact on the adoption of an Enterprise Resource Planning Systems (ERP). These factors could also be adapted to BSC system because some companies integrate a BSC module in their ERP application.

Other studies Abernethy et al. (2005) have pointed to other situational factors that impact the design and probable outcome of a management control systems. They highlight differences in aspects of the national culture, the organizational structure, size of the organization, competitive environment and so on to all appear to affect the type of control and success of the management control system (MCS). Concerning the adoption of the BSC per se; Hoque and James (2000) are among the early researchers on BSC performance impact. They examine the contingent relationship between BSC usage, organizational size, product life cycle stage and the firm's market position on performance. The author's goals were to examine if BSC usage was related to the size of the organisation, the life cycle stage of its product or its market position. Also they wanted to establish if this relationship had an impact on the performance of the company. They used data from Australian Manufacturing Companies to test their hypothesis. The results from the study show that greater BSC usage was associated with large organisation. Also companies with product at an early and growth stage of their life cycle are prone to use BSC. The authors further observed that whereas BSC usage is associated with the size of the company; no relationships however exist between BSC usage and market strength of the firm. The study concluded that large firms with a strong market position with new products in their product portfolios use the BSC more.

On the other hand, Malina and Selto (2001) studied how effective BSC can serve as a communication vessel and a management control tool. This study is one amongst the early researches to show that BSC can be an effective communication tool. Although Kaplan and Norton (1996) commended the using BSC as a tool for communication; this study echoes the fact that BSC presents an opportunity to develop, communicate and implement strategy. Kaplan and Norton (1996) hinted that Strategy focused organization were using this tool to communicate objectives, measures and organizational values to member. The authors use interviews and archival data from the multiple divisions of a large manufacturing company in North America to test their hypothesis. The results from the study indicated that BSC is an effective tool for setting objectives and measures. Also, BSC can influence lower level managers to conform their actions to the overall goals of the organisation. Likewise, Burgess, Ong and Shaw (2007) support these discussions. They found out that foreign own companies and larger

companies in terms of number of employees use more of contemporary performance management systems.

3.2.2. *The individual manager characteristics*

People have different personality traits. Although some of these traits can be learned, still most are unique to the individual. As managers, they have unique talents that distinguish one from the other. These unique traits influences the way they behave, act and do things. Although organizational factors have been seen to influence the adoption and decision to use management information system or an information system more generally; however, it is the managers in these organizations who work with these systems. Thus, the extent to which they use the systems differs also. Whereas some managers use the system often, others do not. Wiersman (2009) identify some of the factors that motivate managers to adopt innovative management accounting techniques. These factors include: the receptiveness of the managers to new form of information, the other forms of control in use in the organization and the evaluation style of the managers. We shall examine how the characteristics of the managers affect their decision to use BSC. We examine these variables along the lines of the evaluative style of the managers (ESM), their receptiveness to new information (MRI) and, how other control system (OCS) in the organization affect their decision to use BSC.

Evaluative style of the Managers (ESM)

According to Otley and Fakiolas (2000), the way managers evaluate subordinates also could serve as motivation for them to use BSC. Prior research has found out that the way managers evaluate subordinate affects the extent to which they use their management control system. For example Otley and Fakiolas (2000) point out how managers can evaluate their subordinates using four evaluative styles: a budget-constraint style (BC), profit conscious style (PC), none accounting style (NA) and lastly, budget-profit (BP) style. We expect therefore that the evaluative style of the managers will have an influence on how they use BSC. Because, managers with a rigid mindset may have problems using BSC since the system presents them with a whole lot of information from which to base their decisions. On the other hand, managers who put

more value on non-financial information are expected to use the BSC more when evaluating their subordinates; since the BSC framework warrants that they consider both the financial and non-financial information before making decisions.

Manager's receptiveness to information from new sources (MRI)

How a manager perceives information from new MIS sources may influence the way they use the BSC. According to Wiersman (2009), managers who are receptive to information from new sources of accounting information systems will most likely use BSC more than those that are not. Also, Baird, Harrison and Reeve (2004) further argue that managers who are more innovative and open to new ideas are more susceptible to use information from new Management Accounting System (MAS) such as BSC or activity based costing systems. As mentioned already, some managers are more innovative than others, therefore at the organizational level, a firm with an innovative culture will be quick to adopt a new MIS such as Activity Management Concept, because, innovative manager's will act as the project champions for the management control system implementation project (Baird et al. 2004).

Other control systems used in the organization (OCS)

Most organizations use a package of control systems. We shall examine how other control systems in the organization impact the use of the BSC by the manager. Management control systems (MCS) are defined as: a general system in an organization by which managers in the organization influence the other members of the organization to implement the organization's strategies (Otley 1999). According to Sandelin (2008), BSC is a result control mechanism that is used alongside other controls; action control, personal and cultural control. Action control puts in place rules and procedures to guide employee actions while, Personal and/or cultural control on the other hand focuses on selecting the right employee to achieve high performance impact.

In the same vein, Malmi and Brown (2008), explain that organizations always use a package of control mechanisms. These control mechanism may either complement or supplement the BSC. Among the different control systems used in organization; Wiersman (2009) distinguishes three types: A result control system (BSC), action control and personal or cultural control. These control systems help managers to realize

high performance from their organizational units. For example, action controls ensure that specific rules and procedures are followed by every members of the work force so that specific desired outcomes can be obtained. To add to action control, firm may use personal or cultural control. The goal of cultural control is to carefully profile the candidates when hiring; so that the right employee is selected based almost on their understanding of the culture of that particular environment. Because, it is believed that such employee possesses certain cultural values that are required to function in that particular environment so that they do not need to be monitored or mentored extensively.

3.3. Summary of the chapter

In this chapter, we discussed the uses and the factors that influence managers to use BSC. There were several uses for the BSC mentioned in the literature review. But most of the uses specified were normative statements from management experts and consultants. In the literature review we realized that the BSC can be used to communicate and control the company strategy, to implement change in the company, to help managers make decisions and to rationalize the decision and also for performance monitoring and evaluation. However the design of the BSC depends very much on the purpose for using it too. For example, if the BSC is designed to control strategy or for decision making, it affects the number of perspectives and measures that will be included in the scorecard.

Our attention in this chapter was on the factors that influence the managers to use BSC. These factors are grouped into organizational factors (e.g. size or turnover), and the personal characteristics of the managers. In the latter category, factors like the presence of other control systems in the organization, how the manager perceive information from new management control systems, whether they value financial or non-financial information when evaluating their subordinates all discussed.

4 TECHNOLOGY AND ITS INFLUENCE ON MANAGERS

This chapter is about BSC technology and how it affects the use of BSC by managers. I will briefly discuss some of the behavioural theories that are widely used to explain how end-users come to accept and use a new technology. I then go on to examine selected papers which have either extended these theories or validated them as reliable models for assessing the use of technology by end – users.

4.1. Technology Acceptance model

The technology acceptance model (TAM) was developed by Davis (1989) to explain how end-users come to accept and use a new technology; meanwhile it has since become the de facto model for assessing end-user use of new technology. The TAM has four main constructs: perceive usefulness (PU), perceive ease of use (PEOU), behavioural intention to use (BI) and actual usage. The original TAM posits that the key to increasing use of a technology was to first increase its acceptance by asking the users about their future intentions towards using the technology. Thus, the PEOU of the technology influences its usefulness and the altitude of the users, which in turn affects behavioural intentions and eventual usage of the technology. The TAM has undergone a number of changes and has also been widely tested with lots of empirical researches and has been proven to be a valid model to predict and enhance end users acceptance of new technology. A modified version of the TAM called TAM2 also added and removed some of the variables in the original model. The TAM2 removed the attitude construct which mediated the PU and PEOU variables in the original model and added the subjective norm to explain the social influence from colleagues and superiors towards using a technology.

However, there has been a continuous effort to unify the theory to explain end-users acceptance of technology. A new theory based on the origin TAM has been developed. The unified theory of acceptance and use of technology (UTAUT) integrates some of the variables in the original TAM with new ones. For example the PU variable from the original TAM was transformed into performance expectancy in the UTAUT model. Whereas the PEOU which in fact influences use in the original TAM was included into

the UTAUT model as an effort expectancy variable just like how the subjective norm from the TAM was transposed into social influence in the UTAUT model.

Nevertheless, studies on end-user computing have always focused on other users in the organization neglecting to pay particular attentions to the way senior executives perceive and use the technology at their disposal. It is even believed that although the information technology is adopted in order to help provide the senior executives with information on which to base their decision, most of the time these executives instead rely more on hearsay and information from informal sources. (Pijpers et al. 2001) That's why in most studies on end user computing, the researcher seldom focuses attention on the managers. This is not surprising though as the senior executives do not actually need to be conversant with all of the different aspects of most Information technology (IT) applications in their organization since their role requires that they be fed with just the relevant information that will help them make decisions. Pijpers et al. (2001) further argue that in order to ascertain whether a technology is beneficial or not; we must assure that the technology after it had been adopted and put to use is actually being used.

4.2. Selected studies on technology acceptance model

The TAM is widely used model for studying end-users acceptance of technology. This model has widely been validated with empirical researches with different management information systems from different industrial sectors. Also, the model has been widely extended in many studies, whereas other studies have at least used some of its key construct to explain the acceptance of a variety of IT application. But as for the BSC per se, to the best of my knowledge, no study was found that had used the TAM to validate its suitability to measure manager's use of BSC application. However, only a few studies have actually used the TAM to predict or enhanced the use of dashboard systems like the BSC applications by senior executives or manager.

Pijpers et al. (2001) developed and tested a new research model based on the TAM in order to assess the factors that influence the use of Executive Information Systems (EIS) by senior managers. The new model was tested using EIS which is an information system (IS) designed to present senior managers with the information they need to execute their duties. The study therefore explores the application of the TAM to study

senior managers' use of EIS. The sample for the study comprised of 87 senior executives drawn from twenty one European based multinational corporations. The authors compiled a list of external variables which they thought affect the discretion of senior executives to use the EIS and tested with a series of hypothesis developed for the study. The results of the study validate the original TAM and found a small number of external variables that also affects how the senior executives use EIS.

In the same way, Holden and Karsh (2010) justified the use of TAM as a model that can be used to assess the use of health information technology by clinicians and physicians. Holden and Karsh (2010) conducted an extensive review of on past studies that have used the TAM or extended it to assess health practitioners' use of health IT services. They concluded that the TAM can be adequately used to assess the acceptance and use of health IT services by health practitioners adding that further research is needed to examine other contextual variable (subjective norm) that can help to explain PU and PEOU. Further, they urge future researchers on health technologies to focus on studying the possible barriers and factors that can facilitate use of health IT by health practitioners.

The study by Kwasi Amoako-Gyamppah (2007) also shed light on the validity of the TAM as a valid model for assessing end-users technology acceptance. The author uses three constructs of the TAM : ease of use, perceive usefulness and other variables to explain how they influence the behavioural intentions of the end users to accept and use the enterprise resource planning system (ERPS).The author argues that antecedent like the prior usage of technology, a convincing argument for the decision to adopt a new system, situational involvement in the design of the new system by the end user and eventually ease of use of the system, has a profound effect on the perceive usefulness of the system and also on the behavioural intentions to use the system by end users. He goes on to say that PU and PEOU variables have been widely discussed in the information system and information technology (IS/IT) adoption studies. He further points out that the participation of users in design of the system helps in building a positive perception about the technology which in effect motivates the user to use the system. The other variable i.e. intrinsic involvement explain how the particular technology has personal relevant or psychological significant to individual. These

variables and the argument for change of the technology justified by the manager will help to build a strong belief among the employee on the importance of the technology which in effect pushes the individual to use the system.

Finally, Seeley and Targett (1999) focus on using personal computers (PC) by managers. The authors show how use of PC differs among managers although they may have received the same training and support. They also observe different pattern of use over time. They argue that some managers invest considerable amount of time to learn to use an application to the extent that they become experts in using the application. But, over time they may slide back to an intermediate user level or even to novice's user if they do not maintain their skill. (Seeley and Targett 1999) Further, they criticise the dimensions of measuring usage in management information system (MIS) researches by arguing that system use should not be measured at a particular data point but that a process view be adopted where usage is measured over time. They recommend therefore a process approach rather than a variable approach to be applied to measure usage of technology. The study was carried out through an in depth interviews with one hundred and three senior managers from the top companies in the UK. The authors found four pattern of using PC among senior executives which include, steady state users, declining state users, born again users and growing state user. The steady state user can either be novices or experts and their usage of any technology can either decline or grow over time, on the other hand, in some cases they might revive their skill by learning to use the technology again (i.e. born again users)

4.3. Usability rate of the balanced scorecard application software

The advancement in modern technologies development has encouraged the development of different kinds of BSC applications software. Before, the BSC may have been implemented barely using simple spreadsheet applications like MS Excel or Access. However, given the complex nature of modern forms of organization and the need to report real time information has made it difficult to implement BSC with these simple applications. As a result, there are new BSC software applications developed to facilitate its implementation. According to a survey by CMA management, 70% of organizations with scorecarding systems use some type of software in their

implementation. Of these organizations, 31% use off-the-shelf (OTS) software, 43% use software developed in-house (such as a spread sheet or database application), and 27% use both types. (CMA management 2006) Concerning balanced scorecards per se the software market is inundated with BSC software application packages. As of 2007, 21 software vendors became certified vendors of BSC software with major software providers such as: SAP, People soft and Oracle already extending their ERP products to include a BSC module (Marr and Schiuma, 2003).

In order to optimize the performance of these software applications they need to be integrated with other systems in use in the organization. At times the integration process become complex and renders the use of the software complex too. Cavalluzzo and Ittner (2004) points out that information compatibility from disparate application software influence adoption and possible benefits from using management information systems. BSC applications software systems are develop by the Information Technology (IT) department of a company, or bought off-the-shelve (bespoke) from some software vendor, so that their integration with other legacy system may be difficult.

In most companies, Information technology investment is important and attracts much of a company's budget since most companies use IT applications to build, sustain and extend their competitive strength. They also use them to improve decision making speed, accuracy and comprehensiveness including to coordinate disperse group within the organisation. In our knowledge-based economy, IT application tools help in serving higher customer's expectations, tightening control over personnel and expenditure and also to comply with governmental reporting regulations.

The proliferation of diverse Information technology application in companies is making the integration of such IT tools difficult to use. These applications integration usually become too complex for the users and may affect their usage of the system especially concerning usage by senior executive with very little time to learn new skills. Therefore, the influence of technology is used in this study as a variable to test how the PU and PEOU of the technology by the manager and their satisfaction with their particular company BSC applications software systems can motivate them to use BSC. They believe is that their satisfactions with their companies BSC applications software's

thus influence their use of the system and the extent to which they will eventually use it after.

Therefore, we use two constructs of the technology acceptance model (TAM) i.e. Perceive usefulness (PU) and perceived ease of use (PEOU) of the BSC application software to evaluate the user's satisfaction with their company's BSC application software systems. Because, the way the user perceives the system as being useful in helping them perform their job will affect how they use the system. That is, when a person believes that by using the new system it will enhance her job performance, they definitely will use it more often. Thus, the perceive ease of use (PEOU) and usefulness variables explain that when users of information technology feel at ease using the technology they most probably like it and want to use it more.

4.4. Summary of the chapter

This chapter focuses on the technology impact on using BSC. The perception of the managers towards their BSC application is examined by using the PU and PEOU constructs of the TAM to see how the managers perceive their company's BSC application as useful and easy to use. I also discussed the effects of technology and how they influence the behavioral intentions of the managers to use BSC. There is a consensus that the way people feel and think about a particular technology affect their behavioral intentions concerning that technology and their probable use of the technology. Thus, I intend to examined how managers assesses their BSC application software's as being useful in helping them perform their duties and how easy to use is the company's BSC application software to the managers. Therefore we use the PU and the PEOU variables from the TAM to evaluate the manager's perception towards their companies BSC application.

Also covered in this chapter are the other theories used to explain how end-users come to accept new technology. Briefly I have touched on the unified theory of acceptance and use of technology (UTAUT) model, and explained how some of its basic tenet draws from the TAM. Furthermore, a few studies that have used the TAM to explain and to valid its suitability as a model to predict end-users acceptance of technology has been reviewed. Since no study was found related to the BSC directly,

related literature on ERP systems, decisions supports systems and Executive information systems were reviewed.

5 METHODOLOGY

This chapter explains how the empirical part of this study is done. The objectives of the research are restated in section 4.1, followed by a research model and question. In Section 4.3, we developed the hypothesis whereas in section 4.4, we describe how the data were collected. Finally, in section 5.5, the procedure involved in analyzing the data is explained.

5.1. Research objectives

As stated already in chapter one section 2.1 above, the aim of this study is to examine the factors that may influence the individual manager to use BSC. Although many studies have been conducted on the factors that influence the use of IS generally and other IT applications like the ERP systems, decision supports and EIS; majority of the studies have neglected to examine how the managers use these systems even though they bare the blame for poor performance. Since the BSC has become the most popular management accounting tool, an understanding of the factors that motivates managers to use the application will help future adopters to understand beforehand while some adopters of BSC system achieve their goal of adoption whereas others do not. The results of this study will help managers and would be managers to evaluate their skills and altitudes and to know where to focus in order that they can achieve their performance goals, as they go about making decision that will steer their organization to success.

This study contributes to the ongoing discussion of measuring the non-financial aspects of the organization and the perceive benefits from doing so by examining the factors that influences managers to use BSC. It also add to the literature on end user technology acceptance by focusing instead on the managers than the ordinary users in the company since the managers are the ones who receive the blame when results are not obtained. More specifically, this will be the first study to examine the impact of technology on using BSC by managers. By using two constructs of the TAM, a model which has been widely tested and proven to predict and enhance end user acceptance

and use of technology, I have examined how the PU and PEOU of the BSC by the manager influences them to use BSC.

5.2. Research model and question

The research method for this study is a survey questionnaire to managers in companies using BSC in Finland. The survey targets managers, work supervisors and controllers of business units, departmental heads of large corporations, presidents, executives and other key personnel within the organization with decision making rights and who use BSC to do their work. In Finland, the business community and academics are very familiar with the BSC. And, there are lots of studies on the topic. However, most of these studies are case base researches. Few have actually surveyed the opinions of managers across a wide spectrum of enterprise. Except for Malmi (2001), who interviewed managers in Finland to get their opinion on BSC during the early years when the BSC were introduced? Others studies on BSC in Finland have focused on the adoption at the organizational level (Haapasalo, Harri 2006). It is important therefore, to look into the factors that motivate not just organizations, but the individual managers also, to use BSC; what they use it for and which drivers are associated with which purpose of usage. This study attempt to answer the following research question: What factors influences managers in Finland to use BSC?

5.3. Hypothesis development

According to Welman and Kruger (2001), a research hypothesis is a tentative assumption or preliminary statement about two or more things that need to be examined. This implies a tentative explanation to a problem that needs to be investigated. In line with the definition, I shall in the paragraphs that follow state the research hypothesis for this study which is based on the literature reviewed in chapter three. The chapter was on factors that affect the decisions of managers to use BSC. Four factors were discussed and how they influence manager's decisions to use BSC will be hypothesis here and investigated in the next section. The chapter also discusses the measurement instrument used for the independent variables. The four independent variables used in this study include:

The existent of different control systems in the organization – In most organizations there exist various forms of management controls both formal and informal controls. Therefore, how these different tools are used in the organization differs. Do they complement others tools or supersedes them? Studies by Malmi (2001) found that some of the early adopters of BSC amongst Finnish companies were replacing their budgetary practices in favor of BSC. Meanwhile, others organizations were continuing to use their BSC along with other control systems (e.g. action control, personal or cultural control) that existed in their organizations. Action controls we have said are rules and procedures put in place to guide employee actions. While, personal and cultural control are behavior that emanates from the culture of the people or organization. They are practices or way of life which identify individuals of a certain community. So, where these other control tools exist already in the organization; we assume that they tend to affect the decision to use newer control tools e.g. BSC systems. Following this logic, our first hypothesis is stated:

Hypothesis 1 (h_1): In an organization where (action, personal or cultural control are in use; it will negatively affect the use of BSC.

How other control tools (action, personal or cultural control) are measured is taken from Wiersman (2009) study. The measures include three items that captures how rules and procedures are specified in the organization and how these rules are being enforced. Therefore to understand whether action, personal and cultural control may influence the use of BSC we asked the questions (appendix 1 question 10.) below:

1. Do you think by hiring the right personnel the evaluation of performance is relatively unimportant?
2. Do you believe by taking care of good culture in your organizational unit, one can depend upon people doing their jobs as best as they are able to which makes performance measurement essentially useless.
3. How precisely do the rules and procedures in your organization specify how the task within your organizational unit is to be done?

Although Malmi and Brown, (2008) explain that organizations use a package of control tools other factors also may have an influence on the decision of managers to use BSC. In the next paragraph, I will explore the literature on how manager's receptiveness to information from new sources influences their decision to use BSC. Then, based on the review, a hypothesis will be formulated which will be tested in the preceding section. Now let's examine how manager's receptiveness to information from new sources affects their decision to use BSC.

The way managers receive information from new performance management system (PMS) is seen to influence their use of BSC systems. We discussed in (section 3.3.2) how people have different character and traits unique to them as individuals. Also, these differences make them behave and act in dissimilar way. Those open to receive information from new types of management information system may be seen as innovative people whereas their counterparts (i.e. managers who may be skeptical of new type of information) are not considered innovative. Innovative managers therefore are the ones who are willing to use information from modern management accounting systems like the BSC systems. These categories of managers we believe are those that will use more the BSC performance measures comprising of financial and non-financial information. Following that logic we can therefore hypothesises therefore that:

Hypothesis 2 (h₂): Managers who are receptive to information from new sources are positively related to BSC usage.

To answer whether managers who are innovative will use less information from traditional accounting systems (e.g. profit statement or return on investment), we asked question number nine found on the survey questionnaire (appendix 1). These questions were extracted from the Wiersman (2009) study. This variable is measured using one item that asked managers whether they think information from modern management accounting system like the balanced scorecards are more appropriate than information from traditional costs and profits statements. The question asked to the managers is stated as follow:

How appropriate in your opinion are traditional measures like profits, return on investment are costs figures for managing your organization compared to measures like complaints from customer, customer satisfaction index found in the BSC report?

Thus far, two of the variables that affect the decision of managers to use BSC have been discussed. Another factor that seems to affect how managers use the BSC system is the way they evaluate their subordinates.

According to Wiersman (2009) managers differs in the way they evaluate their subordinates. The discussions on how managers evaluate their subordinates have been going on since 1972. According to Otley and Fakiolas (2000), the prior research on this came up with an instrument which was widely used to measure how managers evaluate subordinates. This instrument was developed in the 1970s when the budget was the only control tool in an organization. During that time managers evaluated their subordinates using either of the following evaluative styles: budget constraint style, profit conscious style and a non-accounting style. But with the advent of modern PMS (e.g. BSC); more dimensions to the evaluative style by managers were introduced. Thus managers can evaluate their subordinates using PMS indicators or the budget. When budgets are used to evaluate subordinate performance, the managers may focus on either a short-run vs. long run evaluation of performance or they might use a short vs. long run emphasis on other quantitative targets, or maybe on an absolute performance vs. comparison with targets. All these are options that managers can utilize when they use budgets to evaluate their performance. Lastly, the managers may also rely on their judgment concerning the relative importance of subjective vs. objective criteria when evaluating subordinates performance. Therefore, to know whether the way managers evaluate their subordinates affects their decisions to use BSC; the hypothesis three was developed.

Hypothesis 3 (h₃): Managers with a flexible evaluative style are more motivated to use BS to evaluate their subordinates.

To answer how the way managers evaluative their subordinates influences them to use BSC; we asked question number eight found on our survey instrument. The questions were drawn from Wiersman (2009) study. They aim to measure the appropriateness of using financial versus non-financial measures by the manager for

executing their function and for performance evaluation. The measure also sought whether managers value more of quantitative or qualitative measures and if they preferred a rigid or flexible evaluative style. In order to address these issues, we asked the following questions to the managers:

1. Do you find financial measures to be more appropriate to present the performance of your organization than non-financial measures?
2. In order to exercise your function how often do you use financial or non-financial information?
3. In order to exercise your functions as managers do you find qualitative information more useful than quantitative
4. When the results do not match performance expectations do you adjust the performance management system? (See appendix 1 question 8).

The last factor that might influence the manager to use BSC is how they perceive their company's BSC application software to be usefulness and ease to use for them. In the information system literature different theories are used to explain the way user feels when confronted to use Information Systems. The main theory in this regard, is the Technology Acceptance Model (TAM) developed by (Davis 1989). The model explains that the perceived usefulness and ease of use of a technology by the user affect their behavioral intentions to use the technology and how they subsequent use the technology. Over the years, the BSC concept has been transformed into various powerful application software tools. The TAM model is used in this study because, it explains how users come to accept and use technology. Therefore, I intend to measure if the manager's satisfaction with the BSC system will in turn influence their decision to use BSC. Technology impact in the form of BSC applications software is examined to see how ease of use and their perceived usefulness of the tool affect the manager's decision to use BSC. When users are introduced to a new technology, factors like ease of use and the perceived usefulness of the technology motivate them to use the system. Following these discussions we introduce our next hypothesis:

Hypothesis 4 (h₄): Perceived usefulness (PU) of BSC by the manager positively influences BSC usage.

1. In the course of performing my task I find using the BSC to be quite useful.
2. The information I get from the BSC is clear and understandable to me.
3. I find the BSC system to be quite a flexible application to use

Hypotheses 5 (h₅): Perceive ease of use (PEOU) of the BSC system by the manager positively influences usage of the system

Therefore, for us to examine if perceived usefulness and perceived ease of use of BSC application software affects managers discretion to use BSC; questions number six in the survey questionnaire were asked to managers. These questions were taken from Davis (1989) study. They measure how the manager thinks the technology in their organization is helping them to carry out their function and how easy it is for them to use the technology. When managers find a technology to be useful and easy to use it enhances their ability to do their work i.e. it affects their behavioural intention to use the technology and leads to more usage of the technology by the manager. The usefulness and perceive ease of use of the BSC system by the manager were measured with the following questions that we asked the managers (appendix 1, question 6)

1. I find learning to use the BSC to be quite easy for me
2. The BSC makes it easy for me to do my job.
3. I think our company's BSC system is quite an easy application to use.
4. I think it is easy for me to become skilful in using the BSC

Like most management concept, where a concept is usually transformed in powerful application software to facilitate implementation, the BSC concept has been translated into a variety of applications software. The software market for BSC applications software is inundated with several software vendors coming up with a package for BSC software applications. Almost 30 certified vendors of the BSC application exist and more companies are pushing to get their applications certified. These application tools differ greatly in terms of functionality, modules and so on. Therefore how users of these

applications (e.g. managers) believe the tools are useful in helping them carryout their duties and easy to use; will also affect their behavioural intentions to use the system and consequently the frequency of use of the system by the managers. In summary, all of the proposed relationships to be tested are summarised in the model below;

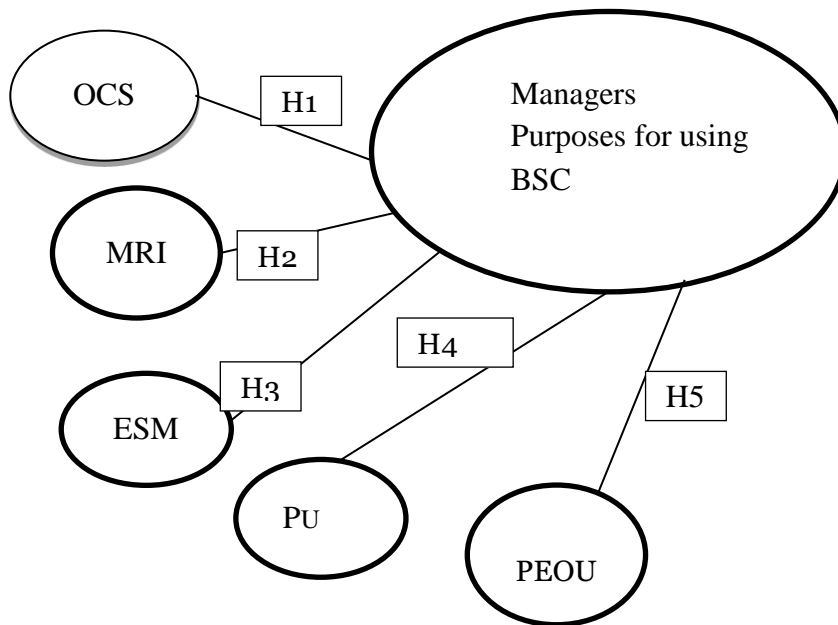


Figure 3: Research Model

5.4. Data collection and analysis method

Data for this study were collected using survey questionnaire. The questions in the survey are taken from Wiersman (2009) and Davis (1989) studies albeit with some slight modifications. The instrument is used to measure the purpose for which managers uses MIS generally, and has already been proven to be suitable for measuring the manager's use of BSC (Wiersman Elke, 2009). The survey targeted managers in companies already identified as using BSC in Finland. The survey questions are answered on a five point likert type scale (see appendix 1). All together there were twelve questions. They aimed at collecting information from the managers concerning the following: how they evaluate their subordinates, how receptive they are to

information from new applications; and on how the other control tools in their organization influences their use of the BSC. Further, the questionnaire also assesses how comfortable the managers were with using their BSC application software systems. Included in the survey questions though, were questions on the demographics of the respondent. They were asked question concerning their position in their organization, the size of their organization, and whether they used BSC or not.

Survey questions were created and published on the internet to collect response for the study. Webropol (a popular survey tool) was used to create the question. The respondents' email addresses were obtained from the Profinder database at the Hanken School of Economics. The sample consisted of people (managers, President, Executives) with decision making responsibilities within their organization. First that organization which was identified as users of balanced scorecards were contacted (Malmi 2001). After that, other companies were randomly chosen and added to the list. The reason for this random selection was because the BSC concept has been around for close to three decades. So, I believe most companies in Finland were already familiar with it following the volume of research carryout on the subject in Finland. A total of 300 questionnaires were sent out to collect responses for this study.

The data collected for this study were analyzed using a statistical software package (Stata). The responses from the field were uploaded from webropol application into excel spreadsheet. In excel, the data was further trimmed and codified to allow easy access to the Stata software package. Afterwards, the dependent and the independent variables were each assign a code that will aid the interpretation of the output from the Stata system. In the stata statistical software program, factor analysis was used to structure and classify the variables. The different questions asked pertaining to each of the variables was collapse into a single variable. For example, the perceived usefulness (PU) variable, had three sub questions i.e. PU1, PU2, PU3, was transposed to PU only. The same treatment was given to all the variables in the model. Then, Ordinary least square (OLS) regression method was used to analyses the data. The OLS method is a technique in statistics that minimizes the sum of the squared deviations between a dependent and an independent variable. The equation of the regression is specified below.

$$\text{BSC USAGE} = \alpha_0 + \beta_1 X_1 \text{ (Other control systems)} + \beta_2 X_2 \text{ (Managers receptiveness to new information)} + \beta_3 X_3 \text{ (Evaluative style of manager)} + \beta_4 X_4 \text{ (perceived usefulness)} + \beta_5 X_5 \text{ (Perceived ease of use)} + \varepsilon \text{ (error term)}$$

Definition of the variables

X_1 = Other control tools in use in the organizations (OCS)

X_2 = How the manager perceive information from new system (MRI)

X_3 = How the managers evaluate their subordinates (ESM)

X_4 = Perceived usefulness (PU) of the BSC system by the manager

X_5 = Perceive ease of use (PEOU) of the BSC by the manager

5.5. Summary of the chapter

This chapter began with a re-statement of the research objective which is to examine the factors that influence managers to use BSC. Five factors are discussed followed by a research hypothesis for each of the factors. In effect, I presented and developed the five hypothesis use for this study. The study uses online survey method to collect data which will be analyzed using standard multiple regression statistical method. To facilitate the data collection process, a web survey tool (webropol) was used and the email addresses of the respondent were obtained from the profinder database at the Hanken school of Economic.

In sum, the chapter explains how the empirical part of the study will be accomplished by explaining each of the independent variable and developing hypothesis to test the validity of each of the variables. The chapter then ends with a summary model of the whole research project.

6 EMPIRICAL RESULTS AND ANALYSIS

This chapter presents the research findings, the implications for the study, conclusions and direction for future researches.

6.1. The response rate

A total of 300 questionnaires were sent and out of that number, 52 actually click on the links to the survey questionnaires but only 43 provided answers for the study. Of the 43 who responded, nine indicated they do not use BSC and had to skip the remainder of the questions. Consequently, those nine responses were excluded from our analysis. In effect 34 responses out of the 300 questionnaires sent out for this study were used in our analysis. So the response rate was 11.33 %.

The results of the regression analysis are stated in the tables below and an explanation of each result follows from the data in the table. Before delving into the interpretation of the result, details are given of the characteristics of the statistics. The first table is a summary of the characteristics of the independent variable showing the mean score for each question and the standard deviation, the same information is presented for the dependent variable too, the summary statistics for both independent and the dependent variables is shown below.

6.2. Characteristics of the statistics

The statistics in this table represent the mean scores and the standard deviations for each of the questions in the independent variable category. The table has four columns; in the first column a brief description of the variable is given, the mean score, standard deviation, minimum value in the measurement scale and the maximum value. The respondent had to indicate their agreement with each question on a scale whereby one was the minimum value and five maximum. The questions are grouped following the way they were posed to provide answers to evaluate our hypothesis. Also, the statistics on the type of organization in terms of the number of employees using BSC is also presented at the end of this section.

The table 1, below therefore show the individual responses for each of the questions in the dependent variable category.

Table 1 Survey responses for the independent variable

Independent Variables	mean	Std. Deviation	Min.	Max.
PU (Perceived usefulness of the BSC)				
PU1 Usefulness in performing one's task	3,08	1,31	1	5
PU2 Information is clear and understandable	2,69	1,11	1	5
PU3 flexible application to use	3,50	1,40	1	5
PEOU (Perceived ease of use of the BSSC)				
PEOU1 easy to learn how to use BSC system	2,83	1,15	1	5
PEOU2 Ease to become skillful in using BSC	3,25	1,10	1	5
PEOU3 BSC application software easy to use	2,66	1,04	1	5
PEOU4 The BSC system makes work easy	3,00	1,49	1	5
OCS (Other control system in the organization)				
OCS1 hiring and retaining the best people	1,83	0,69	1	5
OCS2 emphasizing good culture in the org. unit	3,16	1,08	1	5
OCS3 action control by rules and procedures	3,08	1,27	1	5
ESM (Evaluative style of the manager)				
ESM1 financial/non-financial performance eval.	2,46	1,01	1	5
ESM2 frequency of using financial/non-fin. info.	1,99	1,11	1	5
ESM3 Use of qualitative Vs. quantitative info.	3,65	1,50	1	5
ESM4 are PMS adjusted if results don't match?	2,16	1,13	1	5
MRI (Receptiveness to new information)	3,16	1,15	1	5

The table show mean score and the standard deviations for all of the questions that was asked to the respondents about the independent variables. All together there were nine questions in the survey but many of the main questions had about three to four sub-questions. The questions were posed in a manner that will help to provide support for the different hypothesis that was developed. The codes given for each question consist of a letter and number whereby the letter represents an acronym for the main question and the number pertain to the relevant question number for the variable under consideration. Therefore, each question in the independent variable were coded as follows: Perceived usefulness (PU1, PU2, PU3), other control systems in the organization (OCS1, OCS2, OCS3), perceive ease of use (PEOU1, PEOU2, PEOU3, PEOU4), the way manager's perceive information from new sources (MRI) and how they evaluate their subordinates was coded as (ESM1, ESM2, ESM3,ESM4).

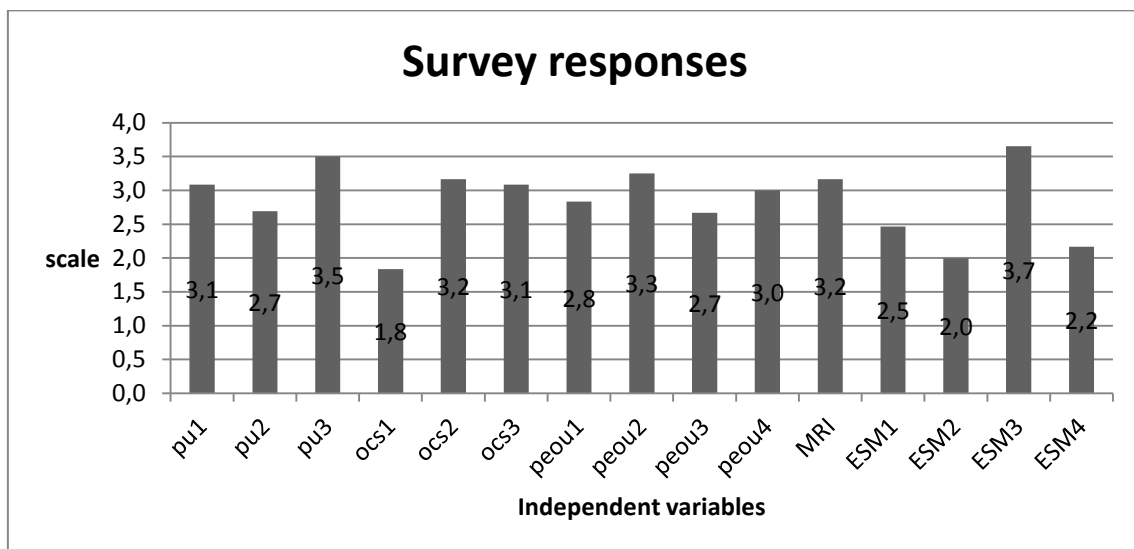


Figure 4 Summary responses for the independent variable

The figure shows the responses for each of the question on the independent variable. Most of the respondent rated the questions above the mean score of (2.5), which means they however showed a positive view towards the balanced scorecard system. A fairly high score was recorded for the perceive usefulness (PU) and perceive ease of use (PEOU) variables. Both the PU and PEOU variable had a rating above the mean score. Of, the three question for the PU variable the respondents gave a high score for question PU3, indicating that they found the BSC to be quite a flexible application to use. Fairly enough though the PU1 question got a relative high score of 3.1 too, this means most of

the respondents agreed the BSC was quite useful for them in performing their job. In the same way, the perceive ease of use (PEOU) variable was tested by asking four question (PEOU1 through to the PEOU4). All of the questions got a comparative high scores with PEOU2 and PEOU4 recording the highest score. The PEOU2 question was intended to test how the respondents perceived the BSC could help them to perform their job and the PEOU4 asked respondent to indicate whether they think they could become skillful in using BSC. Both questions received a high score indicating that the respondent believed the BSC is helping them to carry out their function and that they could become skillful in using BSC. Although the other two question i.e. PEOU1 and PEOU3 got scores above the mean, compared to the PEOU2 and PEOU4 questions they lag behind a bit. This implies of the four questions asked to capture the perceive ease of use of BSC, most of the respondent did not find learning to use the BSC to be that easy for them nor did they find their companies BSC to be that easy to use.

The influence of the other control system on BSC usage was positive. We asked three questions in order to provide a clue as to whether other controls system in the organization impacted the use of BSC. The respondent rated questions (OCS2 and OCS3) with high scores far above the mean score. The questions were meant to measure how the different control systems: taking care of good culture, hiring the right people, and putting in place strict rules and procedures operate alongside BSC in the organization. Question OCS2 and OCS3 got a high score far above the mean whereas OCS1 was rated low below the mean. This implies the respondents agreed that if care is taken to enforce good culture that may help also to facilitate the management process in the organization, likewise where there are rules and procedure clearly spelt out for the employee to follow, it also help the organization meet its goals. The question OCS1 was asked to examine whether by hiring the right people performance measurement was essentially unimportant. This question got the least score, far below the mean, which implies they did not see how by hiring the right people could supplement for performance management.

On the other hand, respondent were asked questions concerning how they evaluate their subordinates i.e. whether they valued quantitative or qualitative information more when evaluating performance of the organization and those of subordinates.

Surprisingly, the questions with the most favorable response was ESM3 which seek to find out whether the managers considered more of qualitative or quantitative information in the evaluation of their subordinates. The score for this question was far above the mean indicating that the managers also place substantial importance to qualitative as well as quantitative information when evaluating their subordinates. Finally, the question on how receptive are the managers with information from new sources of accounting information system, got high rating above the average meaning the way these managers perceive information from new sources may indeed affect their use of BSC.

To summarize, almost all of the questions asked concerning the independent variables got scores above the average implying in one way or the other that these questions shine some light on how BSC are being used in the organization. We examine whether the BSC was useful and easy to use by managers and received some interesting responses. For example the question (PU1) had a score of (3.1), meaning that most of the managers found the BSC to be quite a useful tool. Likewise was the PEOU variable whereby most of the respondents answered that the BSC was helping them to perform their job and that they also thought they could become skillful in using the BSC. As concern how the other controls in the organization affects using BSC, the respondents did not think by hiring just the right personnel makes performance measurement relatively unimportant.

The table 2 also presents the different mean scores and the standard deviations for the different questions asked to examine the respondents' opinion on the different dependent variable. The table presents the scores for each of the question on the dependent variable. Like in table 1 above, the table 2, has four columns also. The first column is for the variable name i.e. it comprises of a code for the variable and a brief description of it. Then, there is the average score that indicate the mean score for that particular question as perceived by the respondents. The standard deviation shows how far the dispersion of the answers from the mean score is. Whereas the last columns shows the minimum and maximum value of the scale from where the respondents had to choose.

The mean score and the standard deviation for all the responses are summarized in this table 2, and a more elaborate discussion of the table is presented immediately after the table. The dependent variables are given a code comprising of letters and numbers e.g. DV1 for dependent variable 1, to describe the variable and the subsequent numbers refers to the number of questions asked in the survey questionnaire. The details of the results from the survey are shown as in table 2 below.

Table 2 Survey responses for the dependent variable

Dependent variables	mean	Std. Deviation	Min.	Max.
DV1 (Decision making Process)				
DV11 analyze why problems occur	2	0,92	1	3
DV12 check thinking against data	2,41	1,13	1	4
DV13 Make sense out of data	1,72	0,84	1	5
DV14 communicate with others people	2,83	1,15	1	5
DV15 explain my decisions to other	2,83	1,23	1	5
DV16 Justify the reasons for my decisions	2,91	1,27	1	5
DV17 make explicit the reasons for my decision	2,08	0,77	1	5
DV18 improve decision making effectiveness	2,50	0,87	1	5
DV2 (Coordinate work with others)				
DV21 Coordinate with others in same work group	2,50	1,13	1	5
DV22 coordinate with others in different work group	2,41	0,96	1	5
DV23 Exchange information with people	2,25	0,93	1	5
DV3 (To monitor one's own performance)				
DV31 monitor my own performance	1,91	0,87	1	5
DV32 plan my work	2,58	1,05	1	5
DV33I use BSC to get feedback on job performance	2,50	0,97	1	5

There were three dependent variables used in this study: decision making and rationalizing (DV1), using BSC for coordination (DV2) and lastly for monitoring one's own performance (DV3). Most of the responses that were received from all the questions converged around the average. Table 2, presents the average and the standard deviations of all the responses. A quick glance at the table shows that most of responses clustered around the mean except for a few questions which the respondents rated far above the mean score of the scale. The highest rating was for the dependent variable (DV12 and DV3) using to evaluate how the managers use BSC to communicate with other people and to explain their decisions. However, this is totally in line with the original purpose for using BSC as Kaplan and Norton (1992) introduced the concept as a communication tool to help managers sell the vision of their organization. Among the scores, the least so far was recorded in the question concerning the dependent variable (DV31, DV13 and DV11) these questions aimed to measure use of the BSC to monitor one's own performance, make sense of data and analyze why problems occur in the organization by using data from the BSC to justify. The figure below summarizes these findings.

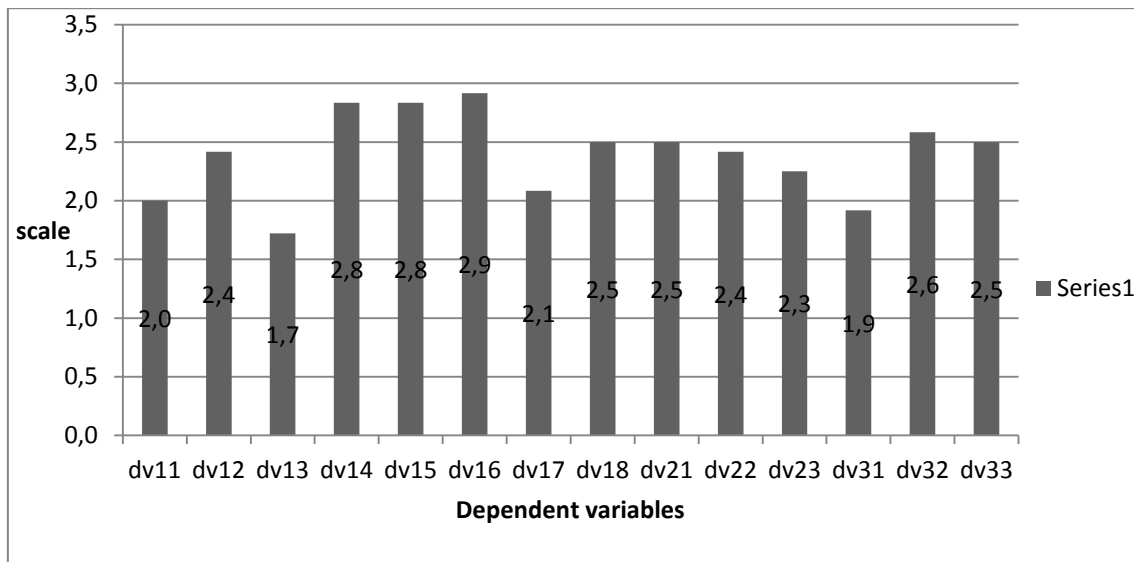


Figure 5: Summary responses for the dependent variable

6.3. Presentation of the results

The findings from the regressions analysis is summarized below. Five hypotheses were developed in an attempt to explore factors that influences managers to use

balanced scorecards and three dimensions of balanced scorecards usage by managers were examined. The correlations between the independent and dependent variables are discussed below. The first purpose for which the individual managers use BSC examined in this study was for decision support. This means the manager base their decision on the BSC data and rationalize those decisions to colleagues or superior based on the information from the BSC system. The table 3, below summarizes the regression results. The table has four columns, the first describe the independent variables and the other three the dependent variables i.e. the three different purposes for which managers use the BSC.

Table 3 Summary of the results

Independent variable	Decision making variable.	Coordination variable	Self-Monitoring variable
Other controls in the organizations (OCS)	0,18 (0,12)	0.09 (0.25)	0.28* (0.18)
Receptiveness to new information (MRI)	0,26** (0,13)	0.50 (0.27)	0.73*** (0.20)
Evaluative style (ESM)	-0,07 (0,10)	-0.12 (0.21)	-0.11 (0.16)
Perceived usefulness (PU)	0,12 (0,15)	-0.13 (0.30)	0.30 (0.23)
Perceived ease of use (PEOU)	0,60*** (0,16)	0.50 (0.34)	-0.24 (0.25)
Constant	0.21	0.37	0.33
Adjusted R square	0.93	0.66	0.78

Number of Observation 34. Reported numbers are coefficients and standard error. ***, **, * denote significance at 1, 5, and 10% levels. Numbers in brackets are the standard error.

The data indicate that the beta coefficient β_2 (managers' receptiveness to information from new sources) and β_5 (the perceived ease of use of the BCSs) are both positive and

significant, $\beta_2 = 0.26$, $p = (0.054)$ and $\beta_5 = 0.60$, $p = (0,001)$. These results support the hypothesis that the perceived ease of use of the BSC and the way the managers perceive information from new sources of accounting information systems affects their use of BSC if the purpose for using the BSC was for decision making purposes. As concerns the other variables in the model i.e. β_1 (other control in the organization), and β_4 (perceived usefulness of the BSC), both have a positive effects on using the BSC. Although β_3 (evaluative style of the managers) has a negative effective on the BSC usage, their effects is not significant. In sum, the way the managers perceive BSC as being easy to use i.e. as they vanish the paranoid and build a conviction that the system is easy to use couple with how the manager is receptive to information from unfamiliar or new sources both will significantly influences how the manager uses the BSC to execute their daily routines.

The second purpose for which managers' use balanced scorecard is for coordinating their own work with other in the work group. We set out to evaluate how the use of BSC helps the manager to accomplish this task. Our regression output for this construct is presented in the table 3, below. The result shows that no statistical significant relationship between the dependent variables and the use of BSC for coordinating the work of the manager with those in his own work group exist. Nevertheless, three of the variables: β_1 (other control in the organization), β_2 (managers' receptiveness to information from new sources) and β_5 (the perceived ease of use of the BCS) shows a positive relationship but none was significant. Whereas the other two β_3 (evaluative style of the managers) and β_4 (perceived usefulness of the BSC), instead had a negative relationship but still not significant.

The final dimension for using BSC was how the manager's use the BSC system to monitor their own performance. Contrary to the use of BSC to coordinate work discussed above, in which no significant relationship was found between the variables and how managers use BSC system; the way that the managers perceive information from new system (i.e. their openness to such information) turn to significantly influence how they use BSC, i.e. $\beta_2 = 0,73$ and the P-value = 0.001 . Therefore our hypothesis two is supported. That means, the way the manager are receptive to new information will significantly affect how they use BSC to monitor their own performance. The other

variables in the model (β_1 other controls in the organization, and β_4 perceived usefulness of the BSC) although they all did not have a significant effect on how the managers use BSC, they nevertheless had some positive effect on using the BSC by managers, except for these other variables; β_3 (evaluative style of the manager and β_5 perceived ease of use of the BSC) which the effect was negative. The summary of the regression analysis on how managers use BSC to monitor their own performance is presented in the table 3, above.

To conclude, our regression analysis show that two of the independent variables (i.e. perceive ease of use (PEOU) of the BSC system and the attitude of the managers towards information from new sources (MRI)) influences managers to use BSC for decision making purposes. Both variables had a beta coefficient of PEOU $\beta_5= (0.60)$ and a P-value = (0.001) and the MRI variable $\beta_2= 0.30$ and P-value = 0.054. Likewise, how the manager perceive information from new sources also significantly influence the usage of BSC by manager in instances where the BSC was being used for monitoring of the manager's own performance $\beta_2= 0.73$ and P-value = 0.001.

Concerning how the BSC was being used for coordination purposes, we did not find any statistical significant relationship with the way managers use BSC especially for the coordination of their work with others in their work group. As to the other variable (i.e. perceived usefulness (PU) and how the manager evaluate subordinate) although they did not significantly influence the use of BSC, nevertheless had positive effects on using BSC by manager especially for decision making purposes as can be seen in table 3 above

BSC usage by industry and company size

Respondent were asked to specify the industry and the position they occupied in their companies. The responses we received include: service sector, software, advanced decision support for health care in Scandinavian, IT business, intranet services, consulting and IT services, Distribution, retail, collection and book keeping and chemical industry among others. Out of the 34 responses received 15 of them came from people working in the consulting and IT industry. This was followed by the retail industry where close to ten respondent indicated they were working for. The financial

services industry and manufacturing also had a sizeable number of responses. As to the job titles of the respondents, we received responses like: managers, technical service manager, key account manager, CRM administrator, sales director etc. Therefore, one may conveniently say that the BSC concept have already penetrated into many of the industrial sector of the Finnish economy.

Apart from knowing the different industries using BSC, I also seek to find out the types of companies using it. When the BSC was introduced, only large corporations were able to implement the system leaving the small and medium size enterprise (SME) out because of the substantial amount of costs involved in the implementation. Thus, in the survey questionnaire, I asked respondents to indicate the size of their organizations. The respondents were therefore asked to indicate the number of employee in the company for which they are working. A range of values were given from which they had to choose. The findings are summarized in figure 5 below.

The figure 5 below shows that large corporation and even SME use balanced scorecards. Out of the 34 people who took part in this survey, a fairly large number of responses came from people working in larger corporations. For the purpose of this study, we had classified large corporation to mean companies or business unit where the number of employees was above 500 people. The remainder of the responses appears to split between the small companies and the medium size companies as well. The smaller companies had the least number of BSC user. But when compared to the mid-size companies, it becomes difficult to draw a fine line. To conclude therefore, BSC is being used in larger corporations as well as SMEs (see figure 5).

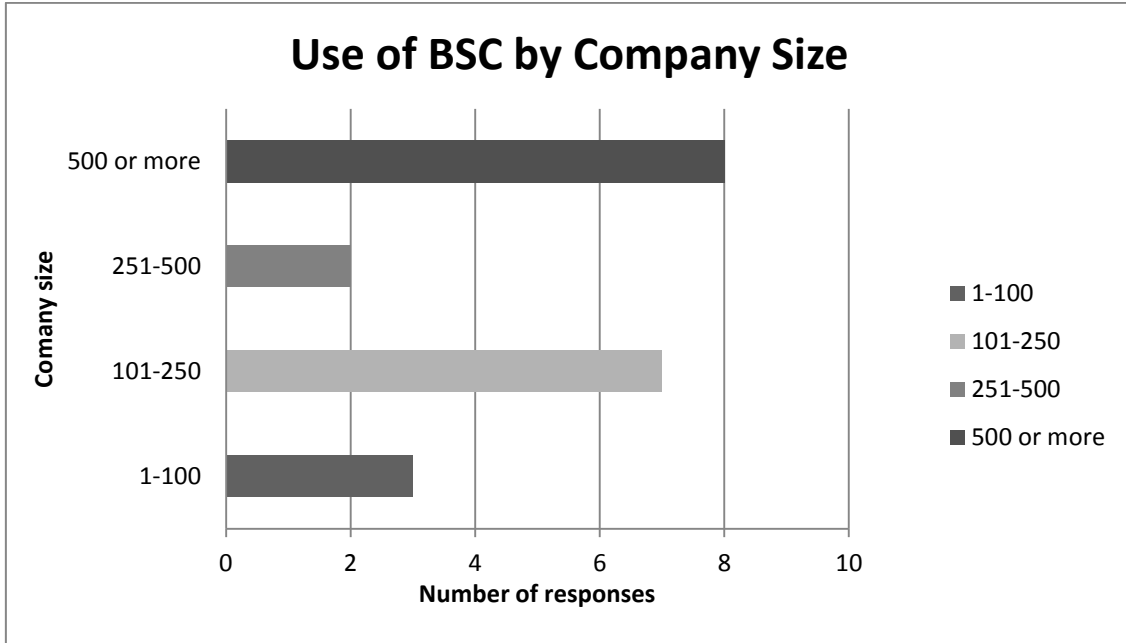


Figure 6: BSC usage by company size

6.4. Evaluation of the empirical results

When an organization adopts a new system; how the managers use the system is usually enhanced by how they see the system as being useful for doing their work and how easy it is for them to use the system (Amoako-Gyampah, Kwasi 2007). As the BSC are also a management information system tool, it is imperative therefore that we consider how perceived usefulness of the system by the managers and ease of use of it affect the behavioral intentions of the managers to use the BSC application. This issue was addressed using hypothesis four and five and question number six in the survey questionnaire (see appendix 1). In order for us to evaluate this, the managers were asked to rate their level of satisfaction with their company's BSC application on a five points likert type scale. The results are contained in tables two, three and four following the three dimensions for using BSC.

As can be seen from table 3, the PEOU of the BSC is positively and significantly related to using BSC for decision making purpose by managers. The standardized coefficient beta for the PEOU variable is ($\beta_5=0.60$) and is also statistically significant with P-value of (.001) significant level. This implies that the perceived ease of use of the BSC system significantly influences the behavioral intentions of the managers to use

the BSC applicant. It also implies that the more managers perceive their BSC as ease to use for their task, the more they are willing to use the system. This results is not surprising though, as many other studies have also found a significant relationship between perceive use ease of use of an IT application and the behavioral intentions of the users to use that particular IT system.

Included in our model also was a variable to measure the altitudes of the managers towards information from new sources. Following our regression analysis, manager's receptiveness to information from new sources (i.e. MRI variable); also significantly affects their usage of the BSC systems. In our model, we estimated this variable using question nine in the survey instrument (appendix 1). In that question, we asked managers to indicate how the perceived traditions performance measures like Profit figures, ROI and other costs figures compared to measures like customer satisfaction when evaluating company performance. The results from the regression analysis show that the way managers perceive information from new sources significantly influences their usage of the BSC system. The standardized coefficient beta was for this variable ($\beta_2 = 0.72$), table. This variable had the highest beta value amongst all the other explanatory variables used in this study. Also, the variable prove to have a high significant effect on the usage of the BSC with a (P-value = 0.001) significance level.

We just discussed how Perceived ease of use of the BSC system by the managers and how receptive managers are to information from new sources affect their decisions to use BSC systems. Both of these independent variables show a significant and positive relationship with BSC usage. Concerning the effects of the other variables; i.e. the other control systems in the organization and its impact on BSC usage, the relationship is positive but the variable does not make any statistically significant contribution to the prediction of BSC usage. This also is the case with the way manager's evaluative subordinates included in our regression model.

7 DISCUSSION OF THE RESULTS

This section discusses the research findings, then compare and contrast the current findings with those of other studies and highlight how the theoretical and practical implication of the results will be of benefit to the academic community and in practice.

Generally speaking, there appear to be paucity in research on the factors that influences managers to use management information system and new technology. Because, most of the researchers on MIS adoption or new technology have always focused their attention on the ordinary users in the company (usually referred to as end-users). The rationale behind such idea is that the managers form only a small group of users compared to the hundreds of ordinary employees who use the system to execute their daily task. Thus, end-users in most studies often refer to day to day users thereby ignoring how the manager's themselves use the technology (Pijpers et al. 2001).

However, since it is the managers who usually are held accountable when performance does not meet expectations; it is but wise to start looking at how these managers use the systems at their disposal and the new technologies they even help to implement. Whereas, numerous studies have identified top management support as a precondition for IT project adoption success, few researchers indeed go beyond looking at how the manager oversee the project to examining how these managers use the technology and the implication of their action.

The goal in this study therefore was to examine the purpose for which managers use BSC and the factors that motivate them. In order to examine the relation between the factors influencing managers to use BSC and the different purpose for which the managers were using BSC, five hypotheses were developed along three dimensions for using BSC. The first dimensions is for decision support (making decisions and rationalizing them), the second is for coordination of work and lastly for self-monitoring. Consequently, we examined the implication of the following independent variables: other control systems used alongside BSC in organization, how the manager perceive information from new sources, how they evaluate subordinates, perceive usefulness and ease of use of their BSC, and how they affect their usage of the BSC system.

Although an implicit relationship exist in all of the hypothesized relationships, the main finding from this study show that the way managers perceive information from new sources (MRI) appear to positively and significant affect using the BSC for the different purposes. The relationship is strongest when the manager uses the BSC to monitor their own performance. Likewise, a positive and significant relationship is equally observed between the way the managers perceive information from new source and their use of the BSC for decision support purposes. Thus, MRI influences their use of BSC for self-monitoring and decision support.

Another interesting finding though, is that the way the manager perceive the BSC to be easy to use significantly influence them to use BSC. The relationship between PEOU of the BSC and usage of the system by managers is strongest especially when managers use the BSC for decision support purposes.

The main findings from our regressions analysis supports hypotheses (h_2) and (h_5), that the way managers perceive information from new MIS and how they perceive such a system to be easy to use affect their usage of the system. That means; two of the independent variables in this study: perceive ease of use (PEOU) of the BSC system and attitude of the managers towards information from new sources (MRI), influences how the managers use BSC. Further, amongst the five independent variables, it is the manager's receptiveness to information (MRI) from new sources that made the most contributions to determining usage of BSC by the managers in all of the three purposes for using BSC discussed in this study. Meanwhile, the PEOU variable likewise had a significant effect in influencing managers to use BSC especially where the purpose for using the BSC is for decision support.

As noted by Baird et al. (2004), the managers who embrace new type of information are the innovative managers. Just as firm with an innovative culture are usually quick to adopt novel management accounting practices, it is not surprising to find that a significant relationship exist between how the manager perceive information from new sources and their use of BSC since the BSC is a new management accounting technique that is widely used in major corporations all over the world. These results are in line with that of Wiersman (2009) who found out that the receptiveness of the manager to

new type of information was positively associated with using BSC for decision making and decision rationalizing purpose.

The implications for practitioners are that managers should always make some conscious effort to experiment with new systems and to try and use those applications at their service. It is only by so doing, they are able to overcome the phobia and paranoia clouding their minds from using new technology. Surely, without optimizing the use of the system it is impossible for the organization to rip the full benefits from implementing the technology. In the same way, how managers perceived the BSC system to be easy to use significantly affects the way they use the system. This hypothesis was tested and the coefficient of the variables turnout to be positive and significant. This result contributes to the wider literature of technology acceptance by explaining that the PEOU of the BSC by the manager influences the way they use the BSC.

The finding further points to the fact that, the role of consultants and other knowledge experts cannot be undermined in influencing the adoption and subsequent use of the BSC systems. It implies therefore that, Organization that can hire the service of a management consult to help them with the implementation of new system will most like use the system more. The consultants are able to adequately convince the managers and other users about the ease of use of the system and even provide training on how to use the system better. This result is also in line with those of Amoako-Gyampa (2007) who found that the efforts of consultant at increasing the perception of personal relevance and importance of a technology thus lead to a feeling of perceive ease of use of the technology and hence, puff up users' intention to use the technology.

In conclusion, even though some negative relationship exist in some of the hypothesized cases, those cases with a negative coefficient were however not statistically significant. Likewise, we observed some connections between usage of the BSC system and the effect of other controls within the organization. Although in this study the presences of other control system within the organization did not significantly affect usage of the BSC for the three different purposes, the coefficients of the variable was however positive though not statistically significant.

7.1. Limitations of the study

From the review of the BSC literature, we observe that different types of BSC systems existed and it is hard to tell what type the respondents are using. Also, what actually makes a performance management system (PMS) a balanced scorecard is not clearly known, therefore, using a survey to collect data for the thesis may have been a bit bias because the respondent on their own are left to judge whether their management information system is a balanced scorecard or not. However, in order to mitigate this bias in the responses, questions ten in the survey instrument required that respondents state the dimensions they have in their company's BSC systems. The responses obtain shows that most of the respondents have at least the four BSC dimensions in their company's BSC applications.

Surprisingly though we did not get any entry for the space provided the managers to state whether they had additional perspectives in their companies BSC applications other than those from which they had to choose. Does this mean most BSC system consist of only six dimensions as was specified in this study? These are areas that need to be looked into because, this information may help us to establish if the same factor influencing the managers to use BSC cut across the different BSC types and dimension of measures.

7.2. Conclusion

In this study, we set out to examine the factors that may influence the decision of managers to use BSC. The motivation for this research was the fact that a lot of articles has been written about the uses of BSC. But unfortunately most of those literatures are normative statements from management experts and white papers of companies. Moreover, most of the studies have concentrated on the factors influencing adoption at the organizational level failing to direct attention to the individual managers who indeed bare the blames for poor performance. Furthermore, there are many influential authors and academics that have argued for and against BSC role in an organization claiming that the concept is flexible and needs to be adapted to each particular situation.(Olve et al. 2003) Never the less there is a general conclusion however that most organizations use a package of control tools. Therefore, to actually examine the factors that may

influence the individual managers to use BSC amidst the different control system in the organization was worth our attention.

Our sample comprised of managers from companies in Finland who were identified as using BSC. The manager refers to individuals within their organizations who have the decision making responsibilities. Amongst the respondents were; marketing and sales managers, chief accountants or finance officers, president and other executives in the different organizations we contacted with decision making responsibilities.

Questionnaires were sent by email to companies targeting the managers to collect responses for the study and with the help of the webropol survey instruments it was easy to create the questions then publish them online. Forty three people actually responded and out of that number, nine indicated they do not use BSC and were excluded from the data. Therefore only 34 responses were actually used for the data analysis amounting to a response rate of about 11.33%.

In order to analyze the data, we used the ordinary least square regression method. This method is a statistical technique for estimating the unknown parameter in a linear regression model. All of the hypotheses were analyzed using OLS regression analysis. The findings show that the PEOU of the BSC by the manager and how the managers perceive information from new sources (MRI) significantly influences how they use BSC for making decisions and for performance monitoring. Whereas two of the explanatory variables (PEOU and MRI) showed a significant and positive relationship with the BSC usage, the other variables in the research model did not have any statistically significant relationship with using BSC although the coefficient of the variables were mostly positive.

REFERENCES

- Abernethy, Margaret A. and Bouwens, Jan October 2005, "Determinants of Accounting Innovation Implementation", *Abacus*, vol. Vol. 41, no. No. 3, pp. pp. 217-240,
- Amoako-Gyampah, K. 2007, "Perceived usefulness, user involvement and behavioral intention: an empirical study of ERP implementation", *Computers in Human Behavior*, vol. 23, no. 3, pp. 1232-1248.
- Ax, C. & Bjørnenak, T. 2005, "Bundling and diffusion of management accounting innovations—the case of the balanced scorecard in Sweden", *Management Accounting Research*, vol. 16, no. 1, pp. 1-20.
- Baird, K.M., Harrison, G.L. & Reeve, R.C. 2004, "Adoption of activity management practices: a note on the extent of adoption and the influence of organizational and cultural factors", *Management Accounting Research*, vol. 15, no. 4, pp. 383-399.
- Bedford, D.S., Brown, D.A., Malmi, T. & Sivabalan, P. 2006, "Balanced scorecards design and performance impacts: some Australian evidence." *Working paper University of Technology Sydney, Helsinki School of Economics.,.*
- Bergeron, F., Raymond, L., Rivard, S. & Gara, M. 1995, "Determinants of EIS use: Testing a behavioral model," *Decision Support Systems*, vol. 14, no. 2, pp. 131-146.
- Burgess, T.F., Ong, T.S. & Shaw, N.E. 2007, "Traditional or contemporary? The prevalence of performance measurement system types", *International Journal of Productivity and Performance Management*, vol. 56, no. 7, pp. 583-602.
- Cavalluzzo, K.S. & Ittner, C.D. 2004, "Implementing performance measurement innovations: evidence from government", *Accounting, Organizations and Society*, vol. 29, no. 3-4, pp. 243-267.
- Chenhall, R.H. 2005, "Integrative strategic performance measurement systems, strategic alignment of manufacturing, learning and strategic outcomes: an exploratory study", *Accounting, Organizations and Society*, vol. 30, no. 5, pp. 395-422.
- Christopher D. Ittner & David F. Larcker 1998, "Innovations in Performance Measurement: Trends and Research Implications", *Journal of Management Accounting Research*,
- Crabtree, A.D. & DeBusk, G.K. 2008, "The effects of adopting the Balanced Scorecard on shareholder returns", *Advances in Accounting*, vol. 24, no. 1, pp. 8-15.
- David Allen Christesen 2008, *The Impact of Balanced Scorecard Usage on Organizational Performance*, University of Minnesota.

- Davis, S. & Albright, T. 2004, "An investigation of the effect of Balanced Scorecard implementation on financial performance", *Management Accounting Research*, vol. 15, no. 2, pp. 135-153.
- Davis & Fred D 1989, "Perceived Usefulness, Perceived Ease Of Use, And User Acceptance Of Information Technology", *The MIS Quarterly*, vol. 13; no. 3, pp. 318.
- Doll, W.J. & Torkzadeh, G. 1998, "Developing a multidimensional measure of system-use in an organizational context", *Information & Management*, vol. 33, no. 4, pp. 171-185.
- Fernandes, K.J., Raja, V. & Whalley, A. 2006, "Lessons from implementing the balanced scorecard in a small and medium size manufacturing organization", *Technovation*, vol. 26, no. 5-6, pp. 623-634.
- Goldsmith, R.E., Freiden, J.B. & Eastman, J.K. 1995, "The generality/specificity issue in consumer innovativeness research", *Technovation*, vol. 15, no. 10, pp. 601-612.
- Greatbanks, R. & Tapp, D. 2007, "The impact of balanced scorecards in a public sector environment: Empirical evidence from Dunedin City Council, New Zealand", *International Journal of Operations & Production Management*, vol. 27, no. 8, pp. 846-873.
- Haapasalo, H., Ingalsuo, K. & Lenkkeri, T. 2006, "Linking strategy into operational management: A survey of BSC implementation in Finnish energy sector", *Benchmarking: An International Journal*, vol. 13, no. 6, pp. 701-717.
- Heikki Rajala 2008, "Performance Measurement and Balanced scorecards in an Operations Organizations", *Msc. Thesis*,
- Hoque, Z. and W. James 2000, "Linking the Balanced scorecard measures to size and market factors: Impact on organisational performance",
- Ittner, C.D., Larcker, D.F. & Randall, T. 2003, "Performance implications of strategic performance measurement in financial services firms", *Accounting, Organizations and Society*, vol. 28, no. 7-8, pp. 715-741.
- Johnston, R. & Pongatichat, P. 2008, "Managing the tension between performance measurement and strategy: coping strategies", *International Journal of Operations & Production Management*, vol. 28, no. 10, pp. 941-967.
- Julie Pallant (2010) & Julie Pallant *Survival Manual: A step by step guide to data analysis using SPSS program*, McGraw-Hill Education, Berkshire, England.
- Kaplan, R.S. & Norton, D.P. 2006, "How to implement a new strategy without disrupting your organization", *Harvard business review*, vol. 84, no. 3, pp. 100-9, 150.

- Kaplan, R.S. 2008, "Conceptual Foundations of the Balanced Scorecard" in *Handbooks of Management Accounting Research*, ed. Christopher S. Chapman, Anthony G. Hopwood and Michael D. Shields, Elsevier, , pp. 1253-1269.
- Kaplan, R.S. & Norton, D.P. 1998, "Putting the Balanced Scorecard to Work" in *The Economic Impact of Knowledge*, eds. Dale Neef, G. Anthony Siesfeld & Jacquelyn Cefola, Butterworth-Heinemann, Boston, pp. 315-324.
- Karen Wilken Braun, Wendy M. Tietz and Walter T. Harrison 2010, *MANAGERIAL ACCOUNTING*, Prentice Hall, Boston , United States.
- Kenneth A. Merchant and Wim A. Van der Stede 2007, "Management Control Systems; Performance Measurement, Evaluation and Incentives" in , second edition edn, Pearson Education limited, England.
- Law, C.C.H. & Ngai, E.W.T. 2007, "ERP systems adoption: An exploratory study of the organizational factors and impacts of ERP success", *Information & Management*, vol. 44, no. 4, pp. 418-432.
- Malmi, T. 2001, "Balanced scorecards in Finnish companies: A research note", *Management Accounting Research*, vol. 12, no. 2, pp. 207-220.
- Malmi, T. & Brown, D.A. 2008, "Management control systems as a package— Opportunities, challenges and research directions", *Management Accounting Research*, vol. 19, no. 4, pp. 287-300.
- Marr, B. & Schiuma, G. 2003, "Business performance measurement â€“ past, present and future", *Management Decision*, vol. 41, no. 8, pp. 680-687.
- Mary A. Malina, Frank H. Selto 2001, " Communicating and Controlling Strategy: An Empirical Study of the Effectiveness of the Balanced Scorecard ", *Business Ethics Quarterly*, .
- Mia, L. & Chenhall, R.H. 1994, "The usefulness of management accounting systems, functional differentiation and managerial effectiveness", *Accounting, Organizations and Society*, vol. 19, no. 1, pp. 1-13.
- Michael C. Jensen 2002, "VALUE MAXIMIZATION, STAKEHOLDER THEORY AND THE CORPORATE OBJECTIVE FUNCTION", *Business Ethics Quarterly*, vol. 12, no. 2.
- Michalska, J. 2005, "The usage of The Balanced Scorecard for the estimation of the enterprise's effectiveness", *Journal of Materials Processing Technology*, vol. 162-163, pp. 751-758.
- Neely, A. 2005, "The evolution of performance measurement research: Developments in the last decade and a research agenda for the next", *International Journal of Operations & Production Management*, vol. 25, no. 12, pp. 1264-1277.

- Nils-Göran Olve, Jan Roy and Magnus Wetter 2000, "Performance drivers: A practical guide to using the Balanced scorecard", .
- Otley, D. 2003, "Management control and performance management: whence and whither?", *The British Accounting Review*, vol. 35, no. 4, pp. 309-326.
- Otley, D. 1999, "Performance management: a framework for management control systems research", *Management Accounting Research*, vol. 10, no. 4, pp. 363-382.
- Otley, D. 1994, "Management control in contemporary organizations: towards a wider framework", *Management Accounting Research*, vol. 5, no. 3-4, pp. 289-299.
- Otley, D. & Fakiolas, A. 2000, "Reliance on accounting performance measures: dead end or new beginning?", *Accounting, Organizations and Society*, vol. 25, no. 4-5, pp. 497-510.
- Otley, D. & Pollanen, R.M. 2000, "Budgetary criteria in performance evaluation: a critical appraisal using new evidence", *Accounting, Organizations and Society*, vol. 25, no. 4-5, pp. 483-496.
- Papalexandris, A., Ioannou, G., Prastacos, G. & Eric Soderquist, K. 2005, "An Integrated Methodology for Putting the Balanced Scorecard into Action", *European Management Journal*, vol. 23, no. 2, pp. 214-227.
- Paul R. Niven 2002, "Balanced Scorecard Step - By - step: Maximising performance and Maintaining Results" in John Wiley and sons, Inc., New York, .
- Pijpers, G.G.M., Bemelmans, T.M.A., Heemstra, F.J. & van Montfort, K.A.G.M. 2001, "Senior executives' use of information technology", *Information and Software Technology*, vol. 43, no. 15, pp. 959-971.
- R, N.P. 2005, "Driving focus and alignment with the balanced scorecard: why organizations need a balanced scorecard", *Journal for Quality and Participation*, vol. 28, no. 4, pp. 21-25.
- Richard J. Holden Ben-Tzion Karsh 2010, "The Technology Acceptance Model: Its past and its future in the health care", *Journal of Biomedical Informatics*, vol. 43, pp. 159-172.
- Robert S. Kaplan and David P. Norton, 1997, "The balanced scorecard: Translating strategy into action.", *Harvard Business School Press. Long range planning*, vol. 30, no. 3, pp. 467-467.
- Robert S. Kaplan, David P. Norton 1992, "The Balanced Scorecard - Measures that Drive Performance", *Harvard business review*, .

- Robert S. Kaplan & David P. Norton, 2001, "Transforming the Balanced Scorecard from performance measurement to strategic management", *accounting Horizons*, .
- S, K.R. & P, N.D. 1996, "Using the balanced scorecard as a strategic management system", *Harvard business review*, vol. 74, no. 1, pp. 75-85.
- Sandelin, M. 2008, "Operation of management control practices as a package—A case study on control system variety in a growth firm context", *Management Accounting Research*, vol. 19, no. 4, pp. 324-343.
- Seeley, M. & Targett, D. 1999, "Patterns of senior executives' personal use of computers", *Information & Management*, vol. 35, no. 6, pp. 315-330.
- Speckbacher, G., Bischof, J. & Pfeiffer, T. 2003, "A descriptive analysis on the implementation of Balanced Scorecards in German-speaking countries", *Management Accounting Research*, vol. 14, no. 4, pp. 361-388.
- THOMPSON, K.R. & MATHYS, N.J. 2008, "The Aligned Balanced Scorecard:: An Improved Tool for Building High Performance Organizations", *Organizational dynamics*, vol. 37, no. 4, pp. 378-393.
- Tommi Kasurinen 2002, "Conceptualising the encoding process related to institutionalisation in organisations", .
- T-S, T. 2005, "The interplay of different levers of control: a case study of introducing a new performance measurement system", *Management Accounting Research (UK)*, vol. 16, no. 3, pp. 293-320.
- Vila, M., Costa, G. & Rovira, X. 2010, "The creation and use of scorecards in tourism planning: A Spanish example", *Tourism Management*, vol. 31, no. 2, pp. 232-239.
- Wiersma, E. 2009, "For which purposes do managers use Balanced Scorecards?: An empirical study", *Management Accounting Research*, vol. 20, no. 4, pp. 239-251.
- William J. Doll, Gholamareza Torkzadeh 1988, "The Measurement of End - User Computing Satisfaction", *MIS Quarterly*, .
- Wu, C., Zhao, J., Xia, L. & Zhu, Z. 2008, "Impact of Internal Factors on Information Technology Adoption: An Empirical Investigation of Chinese Firms", *Tsinghua Science & Technology*, vol. 13, no. 3, pp. 318-322.

Appendix 1: cover letter and Questionnaire

Dear Respondents,

I am a master student at the Hanken school of Economics, Helsinki. The enclosed survey is part of my master thesis which is a requirement for the award of a MSc. Degree in Advanced Financial Information Systems.

The goal of this research project is to find out the purposes for which managers use Balanced Scorecards (BSC) and what motivates them. Also, the study examines how useful; and easy to use the Balanced scorecard system is to the organization.

Balanced scorecard in this study refers to management Information systems that use financial and non – financial information to measure performance and to reward employee.

This project is an academic research, and all the information provided here will be treated with strict confidentiality. Also, I understand how busy you all are especially during this time of the year. But your participation will be highly appreciated, as this will go a long way to enhance the research.

The survey will take between 10 to 15 minutes to fill and send. I heartily thank you for your participation.

Best Regards

Eric Tanyi
eritanyi@gmail.com

Questionnaire

This survey is on Balanced Scorecards (BSC). Our interest is on how BSC help Users (Managers) carry out their duties. In this study, BSC refers to Management Information System (MIS) that uses financial and Non-financial measures to manage the organization and to reward employee. .Questions 1-4 in the survey covers background information of the respondent and of the organization. While, the remainder seven questions are the actual research questions. In question eleven, chose all that applies or write your own answer as it may be necessary. You may also leave out the questions you do not know. The survey questions are answered on a five point likert type scale as

follows: 1 = not at all, 2= a little, 3= moderately, 4= Much and 5 = a great deal. 0 = do not know / No opinion. I encourage you to, please read carefully and then answer

1. In what sector does your firm operate?
2. What is the title or position you hold in your firm?
3. What is the number of employee in your organization? You may choose below:
 - below 100
 - 101- 250
 - 251-500
 - Over 500
4. Do you use balanced scorecards? Yes or No.
5. Which are the measurement dimensions in your BSC application; specify:
 - Financial
 - Customer
 - Internal process
 - Employee
 - Stakeholders
 - Learning and Growth
 - * others (please specify)

Statements	1	2	3	4	5	0
6. Evaluate how useful and easy it is to use BSC?						
I find learning to use the BSC to be quite easy for me						
I find the BSC to be quite a flexible application to use						
I think it is easy for me to become skilful in using BSC						
I think our company's BSC system is quite an easy application to use.						
The BSC makes it easy for me to do my job						

Statements	1	2	3	4	5	0
<p>The information I get from the BSC system is clear and understandable to me</p> <p>In the course of performing my task I find using the BSC to be quite useful</p>						
<p>7. Please evaluate how BSC helps in the decision process</p> <p>I use BSC to analyse why problems occur</p> <p>I use this application to check my thinking against the data</p> <p>I use this application to make sense out of data</p> <p>I use this application to communicate with other people in my work group</p> <p>I use this application to help me explain my decision</p> <p>I use this application to help me justify the reason for my decision</p> <p>I use this application to help me make explicit the reasons for me decision</p> <p>I use this application to help me improve the effectiveness and efficiency of the decision process</p>						
<p>8. Please indicate how the use of BSC helps you to evaluate performance</p> <p>Do you find financial measures to be more appropriate to present the performance of your organization than non-financial measures</p> <p>In order to exercise your function how often do you financial or non-financial information</p> <p>In order to exercise your function do you find qualitative information more use than quantitative</p> <p>When the result does not match performance expectations do you adjust the performance management system</p>						
<p>9. How appropriate are in your opinion traditional measures like profits, ROI and costs figures for managing your organization compared to measures like complaints from customers, customers satisfaction index found in the BSC report.</p>						

Statements	1	2	3	4	5	0
<p>10. Please evaluate how the other types of control systems in the organization affects usage of the BSC</p> <p>Do you think by hiring the right personnel evaluation of performance if relatively unimportant</p> <p>Do you believe by taking care of good culture in my organizational unit, one can depend upon people doing their jobs as best as they are able to which makes performance measurement essentially useless</p> <p>How precisely do the rules and procedures in your organization specify how the task within your organizational unit is to be done</p>						
<p>11. Please evaluate how BSC can be used to monitor one's own performance</p> <p>I use this application to monitor my own performance</p> <p>I use this application to plan my work</p> <p>I use this application to get feedback on job performance</p>						
<p>12. Please evaluate how BSC helps to coordinate work?</p> <p>I use this application to coordinate activities with others in my work group</p> <p>My work group and I use this application to coordinate our activities</p> <p>I use this application to exchange information with internal and/or external customers</p>						