Does the Balanced Scorecard Add Value? Empirical Evidence on its Effect on Performance

Fabien De Geuser\textsuperscript{a, b}, Stella Mooraj\textsuperscript{a} & Daniel Oyon\textsuperscript{a}

\textsuperscript{a} HEC Lausanne, Switzerland
\textsuperscript{b} ESCP-EAP Paris, France

Version of record first published: 15 Apr 2009

To cite this article: Fabien De Geuser, Stella Mooraj & Daniel Oyon (2009): Does the Balanced Scorecard Add Value? Empirical Evidence on its Effect on Performance, European Accounting Review, 18:1, 93-122

To link to this article: http://dx.doi.org/10.1080/09638180802481698
whatsoever or howsoever caused arising directly or indirectly in connection with or arising out of the use of this material.
Does the Balanced Scorecard Add Value? Empirical Evidence on its Effect on Performance

FABIEN DE GEUSER, STELLA MOORAJ* and DANIEL OYON*

*HEC Lausanne, Switzerland and **ESCP-EAP Paris, France

ABSTRACT Since its emergence at the beginning of the 1990s, numerous companies have adopted the Balanced Scorecard (BSC). This paper tackles two research questions: (1) whether the BSC adds value to companies and (2) if so, how does it contribute to organisational performance. In contrast to previous literature that does not separate these two questions, we rely on an established methodology (Foster and Swenson, 1997) to separate and quantify both the BSC contribution to performance and the way that the contribution is achieved, by applying a unique cause-and-effect scheme to the BSC. Our empirical results are based on survey data collected from 76 business units. They indicate first that the Balanced Scorecard has a positive impact on organisational performance. More specifically, the BSC improves the integration of the management processes and empowers people. Using the Strategy-Focused-Organisation (SFO) model (Kaplan and Norton, 2001), we empirically find that the sources of performance derived from the BSC are primarily of three types: (1) a better translation of the strategy into operational terms, (2) the fact that strategising becomes a continuous process, and (3) the greater alignment of various processes, services, competencies and units of an organisation.

1. Introduction

After its inception in the early 1990s, the Balanced Scorecard (BSC) spread rapidly through firms, starting in the US and quickly reaching the rest of the world. Its diffusion was so rapid that as early as 1997, it was labelled as one of the most influential management instruments of the 20th century (Sibbet, 1997, p. 12). By 2005, a study conducted by Bain & Company on
management tools stated that 57% of 960 international executives reported using the BSC (Rigby, 2005, p. 13). In 2007, this percentage increased to 66% out of a sample of 1221 firms (Rigby, 2007, p. 14).

This diffusion rate is unique and it triggers the exploration of both the tool and its applications. Research on the BSC can be structured around three main issues: (1) the characteristics of the widespread diffusion, (2) the assessment of the contribution of the BSC to firms’ performance and (3) the way the BSC generates this contribution. The first question related to the diffusion of the BSC has been documented and studied by researchers interested in managerial innovation social processes.¹ The two other questions – its contribution to firms’ performance (‘how much’) and how it contributes (‘how’) – have not received much attention to date. Indeed, existing studies focus on the gap between the widespread use of the BSC and the lack of clear evidence of its effectiveness (Otley, 1999; Speckbacher et al., 2003; Norreklit, 2003; Davis and Albright, 2004). This gap has generated many critical debates about the rationality of the diffusion. Without hard evidence of its usefulness, the adoption of the BSC is associated with the solid rhetorical argumentation developed by its authors. According to Norreklit (2003), the extensive diffusion and use of the BSC is mainly due to the ‘pathos’ of the situations in which it has been implemented and the ‘ethos’ of Kaplan and Norton.² Through a detailed semantic analysis, Norreklit (2003, p. 610) described how the BSC inventors used rhetorical mechanisms to promote the system and showed that the BSC ‘appeals both through pathos and through ethos’ but very little through ‘logos’. Therefore, it appears that managers are convinced to use the BSC because it was created by trusted (ethos) academics and practitioners using a rhetoric that appealed essentially to managers’ emotions (pathos) and only little to their rationality (logos). Norreklit (2003, p. 610) even argued that Kaplan and Norton ‘blur the logos’.

Despite the thorough analysis made by Norreklit (2003), it might be too early to conclude that the massive diffusion of BSC is mainly due to a rhetorical argumentation and not to the strategic and operational effectiveness of this new control system. Some studies have attempted to address this question in an exploratory way and tested the impact of the BSC on a wide range of items related to global firms’ performance (Speckbacher et al., 2003). However, these studies are exploratory and do not use a theoretical framework to formally analyse the impact of management control systems on firms’ performance. Our study does however use such a framework and applies it rigorously to the BSC, thus providing an answer to the ‘how much’ question. The framework we use relies on the methodology developed by Foster and Swenson (1997) and includes a ‘means comparison of success measures’ built on four dimensions: (1) the management evaluation of implementation success, (2) the costs and benefits associated with the development of the BSC,³ (3) the integration of the BSC into the management processes of the organisation, (4) the decentralisation of firms and their work units.
Concerning the ‘how’ question, the existing empirical literature provides little information on how the BSC creates value. Therefore, the question in itself is still not well-understood. For instance, does the BSC create value through its formal use or through the informal and interactive debate it generates during the design, implementation and use stages? Is the value created by its strategic or its operational use? How does the BSC really impact the ‘four perspectives’ (financial, customer, processes, learning and growth) of the organisation? With the BSC, do people better understand these four perspectives and their relationships? If so, how does the BSC improve this comprehension? How does the BSC generate greater alignment within the value chain and between the units of the organisation? Does better alignment come from an increased discipline throughout the organisation or from a better communication of the strategic and operational factors? Failing to answer these ‘how’ questions implies a lack of understanding of the way in which the BSC impacts organisational performance.

The BSC is likely to impact performance through a variety of means. Kaplan and Norton (2001) propose The Strategy-Focused Organisation framework to explain how the BSC contributes to firm’s performance. The framework distinguishes five possible sources of performance: (1) the top management support given to the BSC implementation, (2) the use of the BSC to translate strategy, (3) the use of the BSC to align the organisation, (4) the implication of everyone in the design and implementation of the BSC, and (5) the introduction of a continuous process of strategy formation through the BSC.

The motivation of our paper is to formally assess the impact of the BSC on organisational performance and, based on the Strategy-Focused Organisation framework, to examine how the BSC enhances organisational performance. The paper is divided into six sections. The first section provides a short introduction to the Balanced Scorecard and the research questions linked to its diffusion and use within firms. Section 2 reviews the literature relevant to the link between the BSC and organisational performance, and develops the hypotheses of the study. Section 3 presents the research design while Section 4 describes the measurement of the different constructs and the structure of the data collected. Our results are then presented in Section 5, followed by an interpretation and concluding section.

2. Background and Hypotheses Development

The initial objective of the Balanced Scorecard was to present management with a concise summary of the key success factors of a business, and to facilitate the alignment of business operations with the overall strategy (Kaplan and Norton, 1992, 1996, 2001). This new management tool had two main purposes: ‘providing managers with a richer set of measures for performance evaluation and helping them implement the strategy’. Ittner et al. (2003) summarized these two functions as increasing measurement diversity and improving alignment with firm’s strategy. Braam and Nijssen (2004) used a very similar typology,
contrasting a comprehensive performance measurement tool and one for strategy implementation. Speckbacher et al. (2003) argued that the latter function should be split into two sub-roles: ‘one describing strategy and the other helping managers to implement it’. The first role, the description of strategy, is associated with the concept of the strategy map. Kaplan and Norton (2001, p. 26) explicitly ascribed this function to the BSC. They stressed the fact that the ‘BSC makes a unique contribution by describing strategy’. They expressed it in terms of a cause-and-effect model, leading to the concept of a ‘strategy map’. Over time, and through practical application, the Balanced Scorecard evolved into the second sub-role – that of a strategy implementation enabler. This evolution was partly inspired by the constructive approach in management accounting research (Kasanen et al., 1993). Today, the BSC is therefore not merely a collection of relevant performance measures (at strategic and operational levels), but a managerial tool and process that plays a role in enhancing organisational performance through its support to the implementation of strategy. Elaborating further, Kaplan and Norton (2001) argued that the Balanced Scorecard should become the centrepiece of a strategic control system that integrates all other key management processes such as planning, budgeting, and controlling. Therefore, the BSC should be tied to communication, action plans and incentives (Speckbacher et al., 2003; Malmi, 2001) and not just to performance measures. Speckbacher et al. (2003, p. 363) defined three types of BSC related to these three functions:

(1) Type I BSC: a specific multidimensional framework for strategic performance measurement that combines financial and non-financial strategic measures;
(2) Type II BSC: a Type I BSC that additionally describes strategy by using cause-and-effect relationships;
(3) Type III BSC: a Type II BSC that also implements strategy by defining objectives, action plans, results and connecting incentives with BSC.

According to this typology, only the third type of BSC fulfils the objective Kaplan and Norton attributed to their managerial innovation. The objective is that the BSC explicitly plays both a central and a broad role into planning and control:

We realized that a new organizational form had emerged – the Strategy-Focused Organization (SFO). Executives of adopting organizations were using the Balanced Scorecard to align their business units, shared service units, teams, and individuals around overall organizational goals. They were focusing on key management processes – planning, resource allocation, budgeting, periodic reporting, and the management meeting – on the strategy […] With their new focus, alignment, and learning, the organizations enjoyed nonlinear performance breakthroughs. The whole
truly became much more than the sum of its parts. (Kaplan and Norton, 2001, p. viii)

This places the Balanced Scorecard in a more prominent position within the strategy implementation framework. It implies that the Balanced Scorecard plays a dominant function not only as a strategic performance measurement system (Type I BSC) but also as the core component of the strategic process. Of particular importance are the improved links between strategy and performance, but the strategy implementation mechanisms are also important. Therefore, the Balanced Scorecard should accompany management from the early design stages of their strategy, its implementation, usage and refinement. This normative prescription logically implies that the BSC is positively correlated with value creation for companies that are using it (how much value does the BSC generate) and that this correlation can be explained (how does the BSC generate value). These two issues give the foundations for our set of hypotheses and are developed in the following two subsections.

2.1. The Contribution of the BSC to Organisational Performance: The ‘How Much Hypothesis’

Many normative statements have been formulated to come up with what the Balanced Scorecard should do. Numerous case studies support these normative statements but there remains little empirical evidence on whether the BSC is truly associated with organisational performance. Some evidence is, however, beginning to emerge (Lipe and Salterio, 2000; Ittner et al., 2003; Speckbacher et al., 2003; Braam and Nijssen, 2004; Papalexandris et al., 2004).

The first body of evidence on the contribution of the BSC to organisational performance was documented by Kaplan and Norton themselves, based on their own case studies (Kaplan, 1996; Kaplan and Norton, 2001). These case studies showed signs of value creation under various circumstances. One of the cases describes how the BSC provided the ability to communicate the strategy to all members of the organisation and enabled the organisation to obtain valuable feedback and ideas from employees closest to customers. The feedback was expressed as some of the key benefits obtained from the BSC. In yet another case, a fundamental advantage came from the ability to link the Balanced Scorecard measures for each employee to an internal share price. This dramatically improved productivity as it meant that each individual reconsidered his/her role within the organisation, and concentrated on areas in which he/she could add value to the business. However, the motivation for this change of behaviour was also reinforced by the fact that each employee owned company shares and could win or lose according to overall company performance, as perceived internally.

Finally, the first attempt to use the Balanced Scorecard as a tool for external communication was described in yet another case. Although it was perhaps not the main advantage of the BSC for the company, it demonstrated that the
Balanced Scorecard concealed a potential for communication and that as a holistic system it could encompass all stakeholders of the business.

The above discussion points to the fact that the Balanced Scorecard may be an effective way to improve organisational performance in a variety of ways. Several features of the tool can be put forward to support this association. First, it provides relevant, balanced, and concise information to managers, thereby reducing the time for processing information and increasing the time for decision-making. It facilitates the overall management of the value chain and the integration of the various functions and processes. By clearly highlighting the critical variables on which the whole organisation should focus, it facilitates the delegation of authority and therefore the empowerment of people and units. The explicit representation of the business and the organisational model through the BSC further creates an environment that is conducive to learning through the testing of hypotheses regarding cause-and-effect relationships and by laying the groundwork for a 360° feedback process. Given the demands of today’s competitive environment, these aspects imply that the Balanced Scorecard may be a value-adding system for management.

However, many systems were proposed in the past that aimed at adding value to management. It is therefore necessary to go beyond the subjective assessment of success factors outlined in the case studies, in order to achieve an empirical view of the entire design, implementation and use process. Only then will it be possible to test its contribution to organisational performance in a statistically representative sample of companies.

Recently, a growing number of academics have acknowledged the need for formal, systematic and large-scale evaluation of the effectiveness of the BSC (see for instance Ittner et al., 2003; Speckbacher et al., 2003; Braam and Nijssen, 2004; Davis and Albright, 2004; Papalexandris et al., 2004). This body of literature showed a converging trend towards positive effects of the BSC. It is interesting to note that we found no explicit or analytical studies suggesting that the BSC could also be a failure. A few studies attempted to evaluate the negative consequences of the BSC, such as the cost of its implementation, unsuccessfully. A notable exception can be found in the Papalexandris et al. (2004) paper concerning a case study in a software firm in Greece. Building upon some remarks made originally by Newing (1994), they noticed that ‘the complexity and time involved in [the BSC] development and periodic review [...] may well outweigh improvements in organisational performance’ (Papalexandris et al., 2004, p. 364). However, they did not estimate these costs but highlighted this issue as being an ‘on-going’ theme for BSC inventors.

Based on observations made by field researchers and on the conceptual framework underlying the BSC, we formulate our first hypothesis regarding the impact of the BSC on firm’s performance as follows.

**Hypothesis 1.** The development of the BSC is positively associated with the organisational performance of the firm.
2.2. The Various Sources of Organisational Performance: The ‘How’ Hypothesis

If the Balanced Scorecard contributes to organisational performance, the next question becomes: how does this association take place? The empirical literature does not provide much evidence on this issue. Qualitative research with case studies aims at describing that successful implementation occurred (Braam and Nijssen, 2004; Papalexandris et al., 2004). Other papers highlighted that the success of the Balanced Scorecard could also be attributed to the highly interactive process that it generated within firms (Mooraj et al., 1999). In this latter paper for instance, the authors argued that the major source of contribution of the BSC lay more in the process of discussing and elaborating the BSC than in the BSC itself. In the available literature there is, however, no systematic analysis of this process. The question of how the BSC helps organisations to enhance their performance is often blurred by the question of the quantification of this potential enhancement. This in turn implies that there is a need to understand how the BSC impacts performance and not only to focus on the question of assessing its performance. It is therefore important to make a strict analytical difference between the performance of the BSC (the ‘value’ it helps create) and the modes of its action. Using the BSC vocabulary, this opportunity could be transformed into a twofold research question: on the one hand, the analysis of the effect of the BSC (our first hypothesis) and on the other about the sources of this effect (subsequent hypotheses).

According to our literature review, our knowledge with regards to the BSC value remains sketchy as we often do not make the distinction between its effects and their sources. Some studies attempted to tackle this issue by distinguishing the two different roles of the BSC: the comprehensive performance measurement role and the strategy implementation role (Ittner et al., 2003; Braam and Nijssen, 2004; Speckbacher et al., 2003). Speckbacher et al. (2003) refined these roles, by splitting the latter into a descriptive role and an implementation role. They were then able to correlate these roles with the contribution of the BSC to performance. We can therefore infer that these two roles could be two different sources of value creation. Interestingly, Ittner et al. (2003) and Braam and Nijssen (2004) demonstrated contradictory results. The former reported a relation between the comprehensive measurement function and economic performance, but only little support for the second role. The latter observed opposite results stating that the BSC generated more economic performance when it was used as a strategy implementation tool. Braam and Nijssen (2004, p. 335) referred to ‘the manner of its use’. In our view, this distinction does not address the nature of the source of the value created by the BSC. Indeed, when referring to ‘sources’, these authors referred more to the different levels of development of the BSC (according to the three types of BSC suggested by Speckbacher et al., 2003) than an exact description of how it affects organisational performance. At this stage of our knowledge, it is therefore difficult
to state why a different level of development of the BSC generates more or less value.

To address this issue, a theoretical framework expressing these mechanisms of performance generation by a management control system is needed. The framework would differentiate between causes (sources) and performance (effects) and propose a theoretically-coherent set of hypotheses describing the causes of value creation. Based on their field studies, Kaplan and Norton (2001) proposed five ‘principles’ in their Strategy-Focused-Organisation model (SFO), representing the necessary conditions for an organisation to create value with the Balanced Scorecard. They stated that if organisations follow these principles, they would be ‘Strategy-Focused’ and therefore experience improved performance. These five principles are: (1) build an executive leadership team to mobilize change; (2) translate the strategy into operational terms; (3) link and align the organisation around the strategy; (4) make strategy everyone’s job; and (5) make strategy a continuous process. According to them, these five principles represent the ways that the BSC creates organisational value. The causality between these five principles and the BSC contribution to organisational performance is, however, theory rather than fact (Norreklit and Mitchell, 2007). Our study being exploratory on this issue, we decided to test whether these five principles could be considered as the main sources of value for the BSC. Our idea was that if the inventors of the BSC built it according to these principles, the latter could be considered as the sources of value for which it should be tested.

Based on these arguments and adapting these five principles, we formulate the following five hypotheses to examine the ‘how’ question empirically.

**Hypothesis 2(a).** The higher the support of top management to the development of the Balanced Scorecard, the better the organisational performance.

**Hypothesis 2(b).** The better the translation of the strategy through the Balanced Scorecard development, the better the organisational performance.

**Hypothesis 2(c).** The more the organisation is aligned using the Balanced Scorecard, the better the organisational performance.

**Hypothesis 2(d).** The more the Balanced Scorecard encourages strategic input from all levels of the organisation, the better the organisational performance.

**Hypothesis 2(e).** The more strategy is integrated into the management system using the Balanced Scorecard, the better the organisational performance.

### 3. Research Design

Measuring organisational performance is challenging, especially when it comes to measuring the impact of a ‘broad and deep’ management control system like the BSC. Most scholars agree that the BSC is developed in situations where a single metric for performance is largely questionable. To cope with this challenge, at least three generic approaches can be found in the available literature. The first approach uses a simplified model of performance (e.g. EVA or ROI)
or more developed statistical methods to reduce the complexity of the evaluation (e.g. using pooling methods). Braam and Nijssen (2004) offered a good illustration of this approach. They used three criteria: ROI, a pooled general measure of performance called ‘overall company performance’ and a ‘perceived company performance’. However, the performance of the BSC, using these methodologies is likely to be underestimated due to the fact that the BSC generates a multilevel performance (Papalexandris et al., 2004).

The second approach tests the contribution of the BSC with regards to its traditional four dimensions – finance, customer, internal process and learning and growth – considering the latter as manifest variables of latent global performance. Some qualitative data can be found using this approach (Papalexandris et al., 2004). Quasi-experimental analysis also exists (Davis and Albright, 2004). Yet the external validity of these approaches is often limited by their deeply idiosyncratic methodology and by the strong assumption of the causal relation between the four dimensions of the BSC – and their related performance. A possible solution to this limitation could be to use path modelling and structural equations but, so far, and (according to our review of existing literature), these methodologies have not been used.

A third approach to tackle the issue of organisational performance is to elaborate a list of items that has been identified by academics through a literature compilation. The study by Speckbacher et al. (2003) is representative of this approach. Based on their experience and judgement, they listed 17 dimensions of performance for the BSC (Speckbacher et al., 2003, p. 377). This approach is limited as it is non-exhaustive and therefore inconclusive.

To cope with this difficulty and the limitations of the existing methodologies used in past studies, we decided to use a proven performance research approach, elaborated independently from a BSC study. For our first research question (how much does the BSC create value), we adopted the research framework, design and methodology developed by Foster and Swenson (1997) to assess the success of Activity-Based Cost Management (ABCM) and its determinants. In their study, they compared and contrasted alternative measures of success by using both a priori and factor analysis. Adapting the methodology developed for ABCM appears therefore relevant for research on the effectiveness of Balanced Scorecard as the two types of management systems have several similarities that justify the use of the same evaluation technique. Both ABCM and BSC are cross-functional control systems aiming to achieve greater alignment between the goals of the organisation and the behaviour of its people. They both have strategic and operational dimensions. These two systems are also management systems and therefore the assessment of their success implies necessarily an evaluation of their managerial impact. Furthermore, they emerged within a few years apart and this limits the historical discrepancies that could have occurred due to changes in the business environment. Foster and Swenson (1997) insisted on the fact that ABCM was introduced to both academic and practitioners’ fields in an adoption pattern, which means that the measures of
success were unlikely to be biased by factors of ‘youth’ or ‘seniority’ of either system. The same can be argued for the BSC.

However, there are also certain differences between ABCM and the Balanced Scorecard. The main difference is that ABCM relies much more on quantitative data than the BSC, which allows easier empirical evaluation of its contribution to performance. For instance, ABCM evaluates the costs of a firm’s activities based on actual resources and time consumed in performing them, and provides a basis on which profitability can be improved. The Balanced Scorecard, on the other hand, enhances profitability via strategic controls and monitoring, which provides data of a less quantitative nature and gives less easy access to statistical assessment.

Concerning our second question (how does the BSC create value), Foster and Swenson (1997) stressed the fact that ABCM could be developed in different ways, and these differences could potentially have an impact on the success of the system. According to them, the measures of the use of the system are as important as the way that the system has been developed. However, they do not specifically provide our research with a framework adapted to study the sources of the contribution (the how question). We therefore needed to select a different framework and we chose the Strategy-Focused-Organisation (SFO) model developed by Kaplan and Norton (2001). We used this model to explore the potential sources of value created by the BSC.

4. Data and Methods

4.1. Sample

The data for the analysis were collected in 2000, from a survey sent to European companies that had recently developed a Balanced Scorecard. Because no ‘ready-to-use’ database on BSC adopters existed, we identified the organisations of our sample through the lists of attendances to four BSC conferences for practitioners. These conferences were held in Zurich, Lausanne, London and Brussels in 1999–2000 and were organised either by academics or by consulting companies. For our study, we used the attendance lists of the conferences to build a non-random list of 164 contact persons from separate organisations to which we addressed five copies of our questionnaire. With a covering letter explaining the purpose of the project, we asked them to forward these copies to different business unit managers within their organisation; business units where the BSC had been developed. In return, we received 76 questionnaires coming from 24 different organisations out of the 164 surveyed. This gave us a response rate of 14.5% for the surveyed organisations and 9.5% in terms of the number of questionnaires sent. This is close to prior response rates for similar surveys (Foster and Swenson, 1997).

The complete sample included mainly large international organisations. Due to our sampling process (the attendance to conferences) and the way our
questionnaire was built, we did not have specific and a priori information about these surveyed companies except the name of the contact person (i.e. the attendant to the conference) and their address. More specifically, we did not have data about the size of the organisations, their sectors and their stage of development. Therefore we could not perform the same control tests as the ones done for instance by Simons (1990) or Hoque and James (2000).

Respondents were members of organisations based in Switzerland (34%), UK (40%), Germany (9%), Austria (8%), France (1%) and Netherlands (1%). We checked the geographical dispersion of non-respondents: 36% were coming from Switzerland, 45% from Germany, 9% from UK, 3% from Sweden and the rest from other European countries. From these figures, we can notice mainly two differences between the group of respondents and the group of non-respondents: the high response rate of UK firms compared to German organisations and the high response rate of Swiss organisations compared to the German rate. Some explanations can be hypothesised for these two differences: our study is based upon a survey launched in 2000, only four years after the release, in English and primarily in the Anglo-Saxon countries, of the first book by Kaplan and Norton on the BSC. Therefore, the diffusion of this book might have (at that time) been more prevalent in US-UK cultural background-based companies. This could explain why there are more Anglo-Saxon companies answering than organisations based in continental Europe. Language could also explain the different response rate. The questionnaire being in English, it may have negatively impacted the response rate of non-English speaking people. Finally the difference could also be associated with the greater propensity of Anglo-Saxon organisations to survey research practices than continental European organisations. Regarding the high Swiss response rate, it could be due to other factors such as the proximity of responding organisations with the originator of the survey (University of Lausanne) encouraging the surveyed organisation to contribute to research projects conducted by a local university.

As a matter of fact, these differences may have had an impact not only on the response rate but also on the nature of answers. Prior research on the diffusion of management systems highlighted the potential impact of cultural and institutional factors (see for instance Whitley, 1999). However, we did not control our results for these cultural dimensions because our sample was predominantly from large and mostly European organisations rooted in the same culture. Therefore, the national culture dimension did not appear to be relevant for our study and we expected no significant impact in our results.

A further sampling bias could be linked to the possible role of our contact persons, in particular if they were the designated champion (i.e. ‘promoters’) of the BSC in their organisations. If it was the case, asking them to provide us with information about the value creation of the BSC development could suffer from an over-positive perception bias. Foster and Swenson (1997), as many others (see for instance McGowan and Klammer, 1997), also faced this
potential bias. To control for this problem, we asked these contact persons to send copies of the questionnaires to business unit managers – as with Foster and Swenson (1997). This created diversity in our respondents, which should mitigate this potential bias.

4.2. Data and Methodology

Information was collected through a postal questionnaire with a covering letter that was sent to conference attendants, asking them to forward questionnaires to up to five business unit managers of their company. The questionnaire was produced only in English. The reasons for this are twofold. First, the majority of the organisations surveyed were large, multinational corporations which used English as their managerial language. Secondly, given the terminology involved in the questionnaire, a possible bias could be introduced if the questionnaires were translated. This problem is amplified by the fact that, although certain ‘official’ (i.e. Harvard Publishing Press) translations exist, they are not necessarily used within organisations. Therefore, in order to avoid confusion, we used English as the research language for this study. Reminders were sent once to increase the numbers of responses.

It is also important to note that our survey was aimed at measuring the organisational performance of the BSC. Using surveys as our primary data collection tool, we collected self-reported measures, i.e. asking managers about their perception of this performance. Young (1996) highlighted that this approach could generate some reliability issues. We did not specifically address this problem due to the exploratory nature of our research. We are also aware that archival data sources, which could be an alternative, are not problem-free either, especially for research about qualitative performance measures.

Our survey comprised 68 closed questions related to the development of the BSC. Appendix A presents the set of questions used to measure the contribution of the Balanced Scorecard to organisational performance. Appendix B lists the questions used to test the sources of contribution. Following the Foster and Swenson (1997) approach, we used multi-item proxies resulting in four organisational performance (OP) measures and five sources of organisational performance (SOP).

The first aim of the empirical investigation was to identify whether the Balanced Scorecard is positively associated with organisational performance (H1). For this purpose we measured organisational performance following Foster and Swenson’s methodology. We compared the means for four a priori organisational performance measures (OP) that represent the contribution of the Balanced Scorecard. Foster and Swenson’s four measures were SM_U (the decision use of ABCM information); SM_DA (the decision actions taken based on ABCM information); SM_SI (the financial improvements stemming from ABCM); and SM_ME (management evaluation of the success of ABCM). ABC is a cost accounting methodology aiming at improving the
accuracy and the relevance of decisions. BSC, on the contrary, is intended to be an organisational control system. As such, the first two measures appear to be less relevant for the BSC. In order to build measures for the contribution of the BSC as an organisational device, we leveraged the traditional distinction between differentiation and integration, the two core dimensions of organisational design as per Lawrence and Lorsch (1986) and we expressed the BSC performance on these two axes. In order to be coherent with the BSC literature, we used the word ‘autonomy’ for the dimension of differentiation, aware that there could be discrepancies between Lawrence and Lorsch’s definition of differentiation and the way the BSC literature uses ‘autonomy’. We then developed two a priori measures, one for each dimension.

Like Foster and Swenson (1997), we also estimated a fifth organisational performance measure called OP_AGGREGATE, which is an equally weighted aggregate of the four others. Overall, our organisational performance measures were defined as follows:

(1) OP_MGTEVAL (the management evaluation of the success of the Balanced Scorecard);
(2) OP_COSTBENEF (the cost-benefit relationship stemming from the development of the Balanced Scorecard);
(3) OP_INTEGRATION (the integration of key management processes through the BSC representation of the business and organisational model);
(4) OP_AUTONOMY (the greater autonomy of the Business Units due to the development of the Balanced Scorecard);
(5) OP_AGGREGATE (an equally-weighted aggregate measure representing the global success of the implementation of the Balanced Scorecard).

In all cases (except OP_COSTBENEF), these five measures consisted of multi-item proxies which, according to Foster and Swenson (1997, p. 111), have an advantage over an individual question when ‘...the concept being measured is multi-dimensional and when the questions in that composite capture those multi-dimensions’. The items used to build these proxies were derived from Foster and Swenson (1997) and adapted to the BSC. Appendix A presents the questions of this study. It is worthwhile noting that we used the generic term of benefit and not financial performance in Question 2 (Q2). We did so because the BSC paradigm is grounded on a more global definition of performance, embedding financial and non-financial, quantitative and qualitative, short- and long-term performance aspects.

For the OP_INTEGRATION measure, we derived our questions from the different roles that the literature has found for the BSC in the building of coherence between the local decisions of business units and the global strategy.

The second aim of our paper was to test the five conditions that must be met for a successful implementation of the BSC (H2) that Kaplan and Norton (2001) suggested with their Strategy-Focused-Organisation model (SFO). To test the
five sources of organisational performance (SOP), we proceeded in a similar manner and developed five multi-item proxies.

(1) SOP_EXECLEAD (the support of top management for the development of the BSC);
(2) SOP_TRANSTRAT (the central role played by the BSC for developing the strategy and setting strategic priorities);
(3) SOP_ALIGNORG (the development of the BSC to align the processes, the services and the competencies of the organisation);
(4) SOP_EVERYONE (the degree of implication of everyone in the development of the BSC);
(5) SOP_CONTPROC (the extent to which the BSC is developed to influence management practices, processes and systems on a continuous basis).

The items used to build these proxies were derived from the Foster and Swenson’s (1997) questionnaire. Without a specifically-designed questionnaire to describe the SFO model, we were forced to build such items inductively. We did so by multiplying questions about sources of performance and afterwards selecting those which related to the SFO framework to build our different independent variables. We tested the validity of these choices by running Cronbach alpha tests.

For all these multi-item proxies, we calculated the mean, the standard deviation and the Cronbach alpha to test the reliability of our constructs. Tables 1 and 2 present descriptive statistics. We can notice that, except for SOP_EXECELEAD, the Cronbach alpha scores meet the minimum threshold to consider the multi-item proxies as fully reliable constructs.

To test the various hypotheses derived from the SFO model, we use regression analysis. Our model is defined as follows:

\[
OP = \alpha + \beta_1 \text{SOP EXECLEAD} + \beta_2 \text{SOP TRANSTRAT} + \beta_3 \text{SOP ALIGNORG} + \beta_4 \text{SOP EVERYONE} + \beta_5 \text{SOP CONTPROC} + e
\]

where the OP-dependent variable sequentially equals each of our five organisational performance measures.

Table 3 reports the Pearson correlation and highlights a slight degree of multicollinearity that will need to be considered in the analysis of our results.

5. Results

5.1. The BSC Contribution to Organisational Performance

Table 4 presents the results for the five aggregate organisational performance measures (OP) and the multi-items with which they are built. For each single
item, respondents answered with a scale of five values ranging from the minimum of 0 to the maximum of 4 with an average value of 2. Overall, the results cannot reject the H1 hypothesis that the development of the BSC contributes positively to the organisational performance. The mean score for the five organisational performance measures is above the mid-point mark of 2 and significantly different from this value. However, the analysis for each of the multi-items proxy shows that the impact is not equivalent in the various performance aspects.

Overall, the management in the various business units surveyed considered that the development of the BSC was a success. The mean score for

<table>
<thead>
<tr>
<th>OP_INTEGRATION</th>
<th>2.72</th>
<th>0.52</th>
<th>1.50</th>
<th>4.00</th>
<th>0.71</th>
</tr>
</thead>
<tbody>
<tr>
<td>OP_AUTONOMY</td>
<td>2.25</td>
<td>0.41</td>
<td>1.00</td>
<td>3.57</td>
<td>0.84</td>
</tr>
<tr>
<td>OP_COSTBENEF</td>
<td>2.83</td>
<td>0.90</td>
<td>1.00</td>
<td>4.00</td>
<td>N/A</td>
</tr>
<tr>
<td>OP_MGTEVAL</td>
<td>2.28</td>
<td>0.63</td>
<td>1.00</td>
<td>4.00</td>
<td>0.92</td>
</tr>
<tr>
<td>OP_AGGREGATE</td>
<td>2.42</td>
<td>0.40</td>
<td>1.29</td>
<td>3.50</td>
<td>0.91</td>
</tr>
</tbody>
</table>

Table 2. Descriptive statistics for the five sources of organisational performance (SOP) derived from the Strategy Focused Organisation model

<table>
<thead>
<tr>
<th>SOP_EXECLEAD</th>
<th>2.52</th>
<th>0.80</th>
<th>0.50</th>
<th>4.00</th>
<th>0.51</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOP_TRANSTRAT</td>
<td>2.61</td>
<td>0.61</td>
<td>1.00</td>
<td>3.67</td>
<td>0.65</td>
</tr>
<tr>
<td>SOP_ALIGNORG</td>
<td>1.91</td>
<td>0.69</td>
<td>0.33</td>
<td>3.33</td>
<td>0.68</td>
</tr>
<tr>
<td>SOP_EVERYONE</td>
<td>2.41</td>
<td>0.60</td>
<td>1.00</td>
<td>3.77</td>
<td>0.77</td>
</tr>
<tr>
<td>SOP_CONTPROC</td>
<td>2.03</td>
<td>0.92</td>
<td>0.00</td>
<td>4.25</td>
<td>0.87</td>
</tr>
</tbody>
</table>

Table 3. Pearson correlation between the five sources of organisational performance (SOP) derived from the Strategy Focused Organization model

<table>
<thead>
<tr>
<th>(SOP)</th>
<th>EXECLEAD</th>
<th>TRANSTRAT</th>
<th>ALIGNORG</th>
<th>EVERYONE</th>
<th>CONTPROC</th>
</tr>
</thead>
<tbody>
<tr>
<td>EXECLEAD</td>
<td>1.00</td>
<td>1.00</td>
<td>0.12**</td>
<td>0.08</td>
<td>0.14</td>
</tr>
<tr>
<td>TRANSTRAT</td>
<td>0.33***</td>
<td>1.00</td>
<td>0.43***</td>
<td>0.22**</td>
<td>0.65***</td>
</tr>
<tr>
<td>ALIGNORG</td>
<td>0.12**</td>
<td>0.43***</td>
<td>1.00</td>
<td>0.21**</td>
<td>0.60***</td>
</tr>
<tr>
<td>EVERYONE</td>
<td>0.08</td>
<td>0.22**</td>
<td>0.21**</td>
<td>1.00</td>
<td>0.38***</td>
</tr>
<tr>
<td>CONTPROC</td>
<td>0.14</td>
<td>0.65***</td>
<td>0.60***</td>
<td>0.38***</td>
<td>1.00</td>
</tr>
</tbody>
</table>

***Correlation is significant at the 0.01 level (2-tailed).
**Correlation is significant at the 0.05 level (2-tailed).
Table 4. Results for five measures of organisational performance (OP) of a Balanced Scorecard development

<table>
<thead>
<tr>
<th>MEASURES OF ORGANISATIONAL PERFORMANCE (OP)</th>
<th>Mean score</th>
<th>Standard deviation</th>
<th>Valid responses</th>
<th>t-stat</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) MANAGEMENT EVALUATION (OP_MGTEVAL)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>− Corporate management</td>
<td>2.55</td>
<td>0.91</td>
<td>67</td>
<td>4.50  ***</td>
</tr>
<tr>
<td>− Business unit management</td>
<td>2.54</td>
<td>0.90</td>
<td>68</td>
<td>4.95  ***</td>
</tr>
<tr>
<td>− Quality</td>
<td>2.41</td>
<td>0.98</td>
<td>46</td>
<td>2.84  ***</td>
</tr>
<tr>
<td>− Accounting/finance</td>
<td>2.37</td>
<td>0.90</td>
<td>63</td>
<td>3.26  ***</td>
</tr>
<tr>
<td>− Sales/Marketing</td>
<td>2.34</td>
<td>0.85</td>
<td>58</td>
<td>3.05  ***</td>
</tr>
<tr>
<td>− Human resources</td>
<td>2.30</td>
<td>0.85</td>
<td>56</td>
<td>2.64  ***</td>
</tr>
<tr>
<td>− Customer service</td>
<td>2.29</td>
<td>0.80</td>
<td>48</td>
<td>2.51  ***</td>
</tr>
<tr>
<td>− Information services</td>
<td>2.25</td>
<td>0.90</td>
<td>53</td>
<td>2.02  ***</td>
</tr>
<tr>
<td>− Operations/Manufacturing</td>
<td>2.16</td>
<td>0.87</td>
<td>49</td>
<td>1.29  ***</td>
</tr>
<tr>
<td>− Purchasing</td>
<td>2.08</td>
<td>0.72</td>
<td>37</td>
<td>0.68  ***</td>
</tr>
<tr>
<td>− Research &amp; Development</td>
<td>1.97</td>
<td>0.85</td>
<td>33</td>
<td>0.20  ***</td>
</tr>
<tr>
<td>− Distribution</td>
<td>1.95</td>
<td>0.88</td>
<td>37</td>
<td>−0.35 ***</td>
</tr>
<tr>
<td>2) COST/BENEFITS (OP_COSTBENEF)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3) INTEGRATION (OP_INTEGRATION)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>− Performance measurement</td>
<td>3.14</td>
<td>0.8</td>
<td>76</td>
<td>12.42 ***</td>
</tr>
<tr>
<td>− Strategic alignment</td>
<td>2.91</td>
<td>0.86</td>
<td>75</td>
<td>9.16  ***</td>
</tr>
<tr>
<td>− Performance culture</td>
<td>2.81</td>
<td>0.91</td>
<td>75</td>
<td>7.71  ***</td>
</tr>
<tr>
<td>− Communication of strategy</td>
<td>2.77</td>
<td>0.97</td>
<td>75</td>
<td>6.87  ***</td>
</tr>
<tr>
<td>− Strategic reflection</td>
<td>2.71</td>
<td>0.88</td>
<td>75</td>
<td>6.99  ***</td>
</tr>
<tr>
<td>− Strategic control</td>
<td>2.62</td>
<td>0.86</td>
<td>74</td>
<td>6.20  ***</td>
</tr>
<tr>
<td>− Change management</td>
<td>2.37</td>
<td>0.93</td>
<td>75</td>
<td>3.45  ***</td>
</tr>
<tr>
<td>− Strategic planning</td>
<td>2.36</td>
<td>0.92</td>
<td>74</td>
<td>3.37  ***</td>
</tr>
<tr>
<td>4) AUTONOMY (OP_AUTONOMY)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>− Performance measurement</td>
<td>2.49</td>
<td>0.88</td>
<td>76</td>
<td>4.85  ***</td>
</tr>
<tr>
<td>− Business unit goals/objectives</td>
<td>2.45</td>
<td>0.75</td>
<td>76</td>
<td>5.23  ***</td>
</tr>
<tr>
<td>− Business unit restructuring</td>
<td>2.3</td>
<td>0.55</td>
<td>71</td>
<td>4.60  ***</td>
</tr>
<tr>
<td>− Incentive scheme</td>
<td>2.29</td>
<td>0.65</td>
<td>70</td>
<td>3.73  ***</td>
</tr>
<tr>
<td>− In general</td>
<td>2.21</td>
<td>0.56</td>
<td>73</td>
<td>3.20  ***</td>
</tr>
<tr>
<td>− New product introduction</td>
<td>2.21</td>
<td>0.48</td>
<td>67</td>
<td>3.58  ***</td>
</tr>
<tr>
<td>− Career development</td>
<td>2.19</td>
<td>0.53</td>
<td>73</td>
<td>3.06  ***</td>
</tr>
<tr>
<td>− Customer selection</td>
<td>2.14</td>
<td>0.39</td>
<td>71</td>
<td>3.02  ***</td>
</tr>
<tr>
<td>− Product modification</td>
<td>2.13</td>
<td>0.38</td>
<td>68</td>
<td>2.82  ***</td>
</tr>
<tr>
<td>− Supplier selection</td>
<td>2.07</td>
<td>0.25</td>
<td>66</td>
<td>2.27  ***</td>
</tr>
<tr>
<td>5) AGGREGATE (OP_AGGREGATE)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*** significant at the 0.01 confidence level.
OP_MGTEVAL amounts to 2.28 and is significantly different from the mid-point of 2 at a 0.01 level. However, the perception of success differs across functions and the results per item indicate that the BSC is primarily a tool for corporate management and for the highest management levels of a business unit. It is interesting to highlight the low results obtained for some items such as purchasing, R&D and distribution. This indicates either that the BSC did not gain much acceptance in these operational functions or that it was not properly developed or diffused throughout the entire business unit. The high mean scores of 2.55 and 2.54 for the corporate and business unit management are consistent with the view of the BSC as a tool that helps monitor and manage the business and organisational model as a whole. In that respect, the BSC is perceived as effective.

In terms of cost/benefits impact, the design, implementation and use of a management control system is difficult to evaluate, due to its multiple ramifications and consequences. This is particularly true for the development of a full BSC (type III) that requires upfront effort and cost while potential benefits often appear only after a certain number of months or years of use. The financial benefits of a control system are hard to measure, because they do not clearly materialise, or remain hidden under opportunity costs. However, over time, people support the idea that well-developed control systems facilitate the decision and monitoring processes (Pfeffer, 1978). Our respondents share this perception and consider on average that the benefits of the BSC largely outweigh its costs. The mean score obtained for OP_COSTBENEF amounts to 2.83 and is significantly different from the mid-point of 2 at a 0.01 level. Among the 72 valid responses to this question, 52 (72.2%) consider that benefits exceeded or greatly exceeded costs. However, it is important to mention here that this is a subjective perception of the respondents as another survey question showed that they had difficulty in providing estimates for financial improvements directly linked to the Balanced Scorecard. It is also relevant to note that the minimum score recorded for this question was 1, implying that no respondent gave a 0 for this question and felt that the costs greatly exceeded the benefits.

The respondents to our survey consider that the greatest benefit of the BSC is to improve the integration of the various management processes of a business unit. The mean score for the integration performance measure (OP_INTEGRATION) amounts to 2.72, which is significantly above the mid-point of 2. Therefore, the hypothesis that the Balanced Scorecard leads to extraordinarily integrated management processes, and contributes to organisational performance cannot be rejected on the basis of this data. It is also interesting to mention that the Balanced Scorecard plays a major and specific role in the responding organisations. In particular, the analysis of the single items present high scores for the roles of performance measurement, strategic alignment and the development of a performance culture in contrast with change management and strategic planning. This is coherent with results of Speckbacher et al. (2003) which report that a majority of companies use the BSC principally as a measurement system of strategic performance.
It would appear that our respondents have clearly perceived the benefit of having a management cockpit that presents the critical indicators of their business and organisational model, and helps them align their means to the intended strategy. However, it is also worth noting that our respondents perceive the complementary roles that the BSC can play to communicate the strategy to the various levels of the organisation and periodically debate the critical assumptions on which the strategy is built.

In today’s business world, decentralisation and empowerment appear to be necessary to the success of firms and their business units. The complexity of the issues, the intensity of the competition and the rate at which things evolve is such that firms can no longer keep the decision authority at the highest level of the hierarchy. Business units and operating functions require a higher autonomy to remain responsive and competitive. Our results show that the BSC plays an important role in making the business units gain autonomy. The mean score for the aggregate measure OP_AUTONOMY amounts to 2.25 and is significantly different from the mid-point of 2 at a 0.01 level. This provides some support to the hypothesis that companies having introduced the Balanced Scorecard delegate greater autonomy to their business units and that, in consequence, organisational performance is positively impacted. In addition, the results suggest that the BSC contributes to reinforcing the autonomy of business units with regards to organisational aspects such as the setting of goals and objectives, the measurement of performance, the restructuring of the value chain, or the development of incentive schemes. On the other hand, it appears that the BSC plays a slightly less important role in increasing the autonomy of the business unit for career development, customer selection, product modification, and supplier selection.

Based on the results discussed above, we can conclude that the BSC contributes positively to the organisational performance of firms.

5.2. The Balanced Scorecard’s Sources of Organisational Performance

The results presented in the previous section provide significant evidence that the BSC contributes to the perceived organisational performance of firms deciding to implement this new control system – whether it be as a new strategic performance measurement system or as a more elaborate form of a strategic planning and control system. From a managerial point of view, these results confirm the relevance of the Balanced Scorecard. In that respect, the BSC represents a value-added management system to survive and prosper in today’s complex and dynamic business world. However, the data given in the previous section do not provide evidence on the way the Balanced Scorecard generates this value.

Our study examines the validity of the five principles formalized by Kaplan and Norton (2001) in their SFO model. Table 5 presents the results of our regression analysis. The regressions were significant at a 95% confidence level on a 2-tailed basis. Our results highlight a number of important features related
Table 5. Results of multivariate regression analysis where five independent variables reflecting five possible sources of organisational performance (SOP) are regressed alternatively against five dependent variables reflecting five organisational performance measures (OP)

<table>
<thead>
<tr>
<th>Five dependent variables for organisational performance (OP)</th>
<th>OP_AGGREGATE</th>
<th>OP_MGTEVAL</th>
<th>OP_COSTBENEF</th>
<th>OP_INTEGRATION</th>
<th>OP_AUTONOMY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>1.523***</td>
<td>2.874***</td>
<td>2.437***</td>
<td>3.315***</td>
<td>−0.010</td>
</tr>
<tr>
<td>SOP_EXECLEAD</td>
<td>0.024</td>
<td>0.057</td>
<td>−0.080</td>
<td>−0.014</td>
<td>0.029</td>
</tr>
<tr>
<td>(0.275)</td>
<td>(0.533)</td>
<td>(−0.713)</td>
<td>(−0.131)</td>
<td>(0.176)</td>
<td></td>
</tr>
<tr>
<td>SOP_TRANSTRAT</td>
<td>0.417***</td>
<td>0.205</td>
<td>0.384***</td>
<td>0.305**</td>
<td>0.338</td>
</tr>
<tr>
<td>(3.824)</td>
<td>(1.550)</td>
<td>(2.765)</td>
<td>(2.332)</td>
<td>(1.720)</td>
<td></td>
</tr>
<tr>
<td>SOP_ALIGNORG</td>
<td>0.088</td>
<td>−0.234</td>
<td>0.164</td>
<td>0.244**</td>
<td>0.128</td>
</tr>
<tr>
<td>(0.875)</td>
<td>(−1.821)</td>
<td>(1.246)</td>
<td>(2.020)</td>
<td>(0.735)</td>
<td></td>
</tr>
<tr>
<td>SOP_EVERYONE</td>
<td>0.143</td>
<td>0.148</td>
<td>0.062</td>
<td>0.137</td>
<td>0.160</td>
</tr>
<tr>
<td>(1.570)</td>
<td>(1.342)</td>
<td>(0.537)</td>
<td>(1.256)</td>
<td>(0.937)</td>
<td></td>
</tr>
<tr>
<td>SOP_CONTPROC</td>
<td>0.272**</td>
<td>0.465***</td>
<td>0.049</td>
<td>0.070</td>
<td>0.073</td>
</tr>
<tr>
<td>(2.265)</td>
<td>(3.105)</td>
<td>(0.310)</td>
<td>(0.486)</td>
<td>(0.338)</td>
<td></td>
</tr>
<tr>
<td>R2</td>
<td>0.521</td>
<td>0.340</td>
<td>0.265</td>
<td>0.308</td>
<td>0.255</td>
</tr>
<tr>
<td>Adjusted R2</td>
<td>0.485</td>
<td>0.287</td>
<td>0.208</td>
<td>0.258</td>
<td>0.135</td>
</tr>
</tbody>
</table>

***significant at the 0.01 confidence level.
**significant at the 0.05 confidence level.
to the significance of the various sources of organisational performance and the predictability of our model.

Whilst the aim of their (and our) research was not to create a predictive model, Foster and Swenson (1997) use the adjusted $R^2$ as an appropriate measure for the explicative power of the models. In the case of the SFO model, the regression against the broad-based aggregate measure (OP_AGREGATE) explains the highest part of the organisational performance derived from the Balanced Scorecard. This is consistent with Foster and Swenson’s (1997) study in which their broad-based measure of success also captured more of the contribution potential than the individual success measures.

In terms of sources of organisational performance, the regression analysis shows significant coefficients for three of the five independent variables (SOP_TRANSTRAT, SOP_ALIGNORG, SOP_CONTROC). However, the coefficients are not significant for every regression, which therefore requires a cautious interpretation of the results. When the aggregate performance measure (OP_AGREGATE) is used as the dependent variable, two principles of the SFO model find support: SOP_TRANSTRAT (0.42 with a t-stat of 3.82) is significant at a 0.01 confidence level and SOP_CONTPROC (0.27 with a t-stat of 2.65) is significant at a 0.05 level.

It is worth noting that the SOP_TRANSTRAT is statistically significant in three out of five regressions. These results support the hypothesis that the BSC contributes positively to an increase in the organisational performance when it is used as the main tool to translate the strategy of the firm. They are coherent with the idea of using the BSC as a framework for translating the strategy in order to achieve a clear understanding of the vision and its strategic and operational implications, to discover the major cause-and-effect links between the various strategic objectives, to develop a strategy map that reinforces the translation of the strategy, and to facilitate its communication. This result is important because the development of the Balanced Scorecard may be, for different reasons, totally disconnected from the strategy formulation process, while its promoters assumed that it should be part of it. For example, we have seen in our field research that the BSC could be developed within a business unit where strategy has not been clearly defined or derived in a set of strategic objectives and initiatives. Our results for SOP_TRANSTRAT show that whatever the circumstances, managers perceive that the BSC contributes effectively to the diffusion of strategy. Therefore, even in case of a loosely defined strategy, a BSC might be developed to reinforce the definition and the communication of strategic directions to the various levels of the organisation.

Using the BSC on a continuous basis to influence the management practices, processes and systems is expressed with the independent variable SOP_CONTPROC and is statistically significant in two regressions. These results bring support to the principle that the more the BSC is developed as the primary attention-driving instrument the higher the organisational performance of the firm. A Balanced Scorecard translates the business and organisational model of a
business unit. It brings clear answers to the three critical strategic questions a firm needs to answer: (1) the markets it wants to target; (2) the products and services it wants to offer; and (3) the way it wants to produce and deliver its value to its targeted customers. In addition, the Balanced Scorecard does not only specify clear strategic objectives but also strategic initiatives to be undertaken in order to meet the specified goals. In that respect, it seems obvious that every management practice, process or system will find its roots in the Balanced Scorecard. As a consequence, when the Balanced Scorecard is used on a permanent basis as the overall framework for management action its impact on performance increases.

When the organisational performance measure (OP_INTEGRATION) is used as the dependent variable, the source of performance measure (SOP_ALIGNORG) is significantly different from 0 at a 0.05 confidence level (0.24 with t-stat of 2.0) implying that the BSC produces its highest impact when it is developed to align the various processes, services, competencies and units of an organisation. As already mentioned, a well-developed BSC presents all the critical components of the business and organisational model. Higher organisational performance is achieved through the development of the BSC as the tool to understand the causality between leading and lagging indicators, to identify the bottlenecks, and to adjust the means to the ends. However, the fact that this alignment principle finds support in only one regression may be due to the fact that the control functions of the BSC in the sample firms was, at the time of the study, limited to strategic performance measurement and did not include the coordination dimension of control systems.

As previously mentioned, our regression results should be carefully interpreted as our five independent variables do not have the same explanatory power across the regressions and are not statistically significant in every case. For example, when the regression is run with OP_MGTEVAL as the independent variable, SOP_CONTPROC remains statistically significant unlike SOP_TRANSTRAT.

None of the hypothesised sources of organisational performance demonstrates significant relationships when the dependent variable OP_AUTONOMY is used. This could be due to the difficulty of measuring the contribution of management control systems that were diffused in various environments, at different times, following different implementation processes and fulfilling a small or large set of purposes. Another reason may be the OP_AUTONOMY construct itself. Further research on the performance of management control systems is required to improve the methodology and to understand the requirements for a successful design, implementation and use of these systems.

Last but not least, the independent variables constructed for executive leadership and making everyone part of the strategy development are not significant (SOP_EXECLead and SOP_EVERYONE). This implies that top management support for the BSC development does not appear to be a source of organisational performance nor does the participation of all employees in the elaboration and implementation of the strategy. These results are quite surprising and should lead to further research.
5.3. Discussion: Is the Organisational Performance Generated by the BSC Mainly Linked to its Control Dimension?

In summary, our results support the hypothesis that the BSC does add value to companies, and that this organisational performance comes mainly – for the companies in our sample – from three sources: (1) its role in the translation of the strategy; (2) its capacity to influence the managerial practices on a continuous basis; and (3) its role in aligning resources (means) to strategic objectives (ends). In our view, this demonstrates that the organisational performance generated by the development of a BSC comes primarily from its strategic focus. This management system forces organisations to translate their strategy into strategic objectives and initiatives that can be monitored and evaluated on a permanent basis. It is also worth noting that when the BSC is used to align resources to the strategic objectives, it apparently leads to positive organisational performance.

However, we did not observe an association between two principles of the SFO model – executive leadership and participation of everyone in the elaboration and implementation of strategy – and organisational performance. This might seem counterintuitive. Without the support or approval of top management, it is often difficult to introduce new control systems. It is also hard to develop the legitimacy of such ‘tools’ at the operational levels if the users do not participate in the choice and development stages. However, in the present study, these two hypotheses are not supported. It is surprising, but could be explained by the decentralised organisation of European companies. Assuming that the business unit managers are fully autonomous in their choices of management control systems, the leadership of corporate managers on this matter may therefore not be relevant for a successful development of a BSC at the business unit level. Similarly, if the main purpose of the BSC was to implement a strategic performance measurement system rather than a fully-fledged strategic planning and control system, it may be coherent that it is used only by the highest management levels of the business unit. Therefore, we should be cautious in the generalisation of our results, which suggests only a partial support of the Kaplan and Norton SFO model. Our results might in fact reflect that the BSC at the time of our study was still a Type I BSC and had not yet evolved in a more elaborate architecture that describes the cause-and-effect relationships (Type II BSC) or enables the design and monitoring of the strategy (Type III BSC) as suggested by Speckbacker et al. (2003). The BSC could therefore be developed and perceived by the firms in our sample as a new control system and not as a way of empowering managers in the creation and implementation of strategy. Malina and Selto (2001) provided evidence on the specific controlling role of the BSC which is coherent with our results. The success of the Balanced Scorecard would, in this case, be linked to an issue of organisational power with a BSC development being perceived as successful when it increases top management control on the decentralised managers.

The lack of results for these two hypotheses is also interesting from a research design point of view. It should lead to further exploration of the diffusion of new
management control systems, as well as a way to evaluate their organisational impact.

In our particular case, our study suffers from limitations that might have impacted our results. First, the concept of a contribution to organisational performance is very difficult to assess. We chose the Foster and Swenson framework to measure the contribution even though we knew that they used the subjective concepts of success and the determinants of success. The organisational performance of a control system remains a loosely defined concept and further research is needed to facilitate the managerial assessment. However, we decided to use this terminology since our aim was to evaluate the effectiveness of the BSC, which could take different forms.

A second limitation is associated with the concept of the Balanced Scorecard, which is not uniformly defined between the firms in our sample. As Speckbacher et al. (2003, p. 362) stated, we are facing ‘ambiguous definitions of the BSC concept in the theoretical literature’. Moreover ‘the BSC concept is not a static one’ (Speckbacher et al., 2003, p. 362). Our personal experience showed us that what one firm considers as a BSC, is very often quite different from what another calls a BSC. Considering the BSC as a research object or unit is therefore problematic, especially for quantitative investigation. We deliberately did not include information concerning this problem in the questionnaires we sent out. Indeed, at the time we collected information (June 2000), the diffusion of the BSC was in its beginning stages. We could assume that consistent interpretations and definitions were still scarce. Furthermore, we can imagine that it is too simple to consider a BSC without thinking about the way it has been developed (with the assistance of consultants or in-house resources, etc). The issue is then: has it been ‘well’ designed, implemented and used? Is it really used by managers and if yes by whom? These questions are not specific to the BSC but can be generalized to almost every management tool. However, our field research has shown us that, despite the existence of a clear set of concepts on which the BSC is built, it has led to the diffusion of a large variety of management control systems.

Difficulties also appear in the inconsistent use of terminology. In most of the BSC literature (including this paper) words such as design, implementation and use are key to results, yet inconsistently used with regards to the BSC. In our study we did not collect information for our responding organisations about the progress stage of their BSC roll-out. We could not therefore examine this dimension. Nevertheless, it would be a most interesting piece of research to analyse the contribution of the BSC while controlling for these three stages of its development. It would provide management science with a comprehensive set of data concerning the actual process of diffusion of the BSC within firms. This is coherent with the conclusion raised by Maiga and Jacobs (2003, p. 296) in their study on the relation between BSC and ABC in firms’ performance. In their conclusion, they urge researchers to bring facts and data on the specific performance generated by the BSC by isolating the specific impact of such a tool among other influences (like ABC).
In addition, our sample includes firms that have initiated the development of a BSC at different times, according to different procedures and to meet different purposes. This diversity is, in itself, an advantage but brings some difficulties in terms of interpretation when the variety cannot be fully controlled.

Another limitation of our study already highlighted in our data and in our sample section is the fact that our sample was non-random (based on international and large organisations sending representatives to BSC conferences) and our response rate was quite low (14.5% of the surveyed organisations) yet comparable to similar surveys. Moreover, without any information about their exact size, their sectors and their stage of development, we were not able to control for these variables. The external validity of our results could therefore be mitigated by these data limitations.

Finally, even if we had been able to define better the concepts of organisational performance and the BSC, the problem of the relationship between these two variables would remain. This is mediated by an infinite number of factors, such as the economical environment, culture, size of the organisation, competencies, and power. Indeed, the complexity of this relationship is so acute that it moderates our conclusions. However, we believe that our approach for evaluating the BSC provides a stronger ‘logos’ to our relationship with management tools. We should continue to develop and improve methodologies adapted to the assessment of management systems and technologies, perhaps through techniques such as assessment centres. Assessment centres would provide an environment where management tools could be tested in a controlled manner. This controlled testing would potentially lead to a decrease in the importance given to gurus (Norreklit and Mitchell, 2007) and also to the tendency to transform people within firms into ‘guinea pigs’ while the firms become test-grounds. As this facility is not currently available, managers will continue to implement management tools and test them directly within their organisation, creating difficult managerial issues caused by the use of tools whose contribution to firms’ performance and conditions of use have not been scientifically proven.

Studying the diffusion of new managerial innovations, for instance in the continuity of Abrahamson (1991) or Ax and Bjornenak’s (2005) work, might help us understand the importance of management control systems on the organisational life of companies, as well as the role of academics in the diffusion process. In this regards, we see a possible shift of the way this tool is used, from a strictly control instrument to a more strategic one. This could be explained by the evolution of its inventors and the way they communicated their innovation to the users through teaching and publications.

6. Conclusion

While the BSC continues to be adopted by a large number of firms, our study demonstrates that the BSC contributes positively to organisational performance. With a growing body of evidence, it is, however, surprising that the diffusion of
the BSC still relies on rhetorical arguments. Our study provides empirical evidence that the BSC contribution depends to a large extent on three conditions (principles) of the Kaplan and Norton SFO model: (1) a better translation of the strategy into operational terms; (2) the fact that strategising becomes a continuous process; and (3) the alignment of various processes, services, competencies and units of an organisation. Therefore, these tested conditions increase the existing knowledge on the way the BSC does create value.

Surprisingly, the top management support and the implication of all employees do not appear to be prerequisite conditions to make a BSC development successful. Our study also shows that it is possible to assess the managerial contribution of new management control systems through empirical and quantitative investigation. Therefore, the adoption of new concepts, techniques or systems should not rely only on intuition or ‘pathos’ but should be carefully analysed and evaluated.

**Acknowledgements**

We benefited from comments made on previous versions of this paper by the participants of the ESSEC research seminar, the 2005 American Accounting Association annual meetings and the 2007 European Accounting Association annual meetings, Salvador Carmona (Editor) and two anonymous reviewers. Special thanks to Antonio Davila, George Foster, Chris Ittner, Michel Lebas, Costas Markides for their advice, comments and encouragement.

**Notes**

1See for instance Ax and Bjornenak (2005) for a review of literature on this subject.

2Norreklit (2003) defines ethos, pathos and logos as follows. Ethos is concerned with the recipient’s trust in the sender such that the credibility or authority appealed to by the sender creates approval. Pathos appeals to the recipient’s emotions and mood, while logos appeals to the recipient’s rational commitment. Logos covers everything humans are able to establish through reason. It includes not only logical arguments but also inductive and abductive arguments.

3By development, we mean the design, implementation and use of a BSC. Due to our research design we were not able to separate the development in different stages and measure the various impacts on organizational performance.

4Braam and Nijssen (2004) and Papalexandris et al. (2004) provide a literature review of this function with examples of strategy maps.

5Especially through what is identified as ‘Innovation Action Research’ (Kaplan, 1998).

6As already said, by development, we mean the design, implementation and use of a BSC.

7Cf note 6.

8The full questionnaire and the cover letter are available on request.

9An attempt was made to construct a multi-item proxy for OP_COSTBENEV. However, few of the respondents were able to quantify the financial improvements due to the development of their Balanced Scorecard at that stage. Therefore, for the sake of this research, a single-item proxy is used.

10See Anthony and Govindarajan (2006) and Merchant and Van der Stede (2007) for a review of the linkages between these contingent factors and the need for decentralisation and management control systems.
References


Appendix A

Surveyed questions used to measure the organisational performance (OP) of a Balanced Scorecard development 31 singled questions clustered around 4 dimensions of performance

1) MANAGEMENT EVALUATION (OP_MGTEVAL)

Q1. How successful do the following groups regard your Balanced Scorecard development?

Scale: 0 (As a failure), 1 (Little success), 2 (Average success), 3 (High success), 4 (Extremely successful)

1. Corporate management
2. Business unit management
3. Accounting/finance
4. Research and development
5. Operations/manufacturing
6. Purchasing
7. Distribution
8. Quality
9. Sales and marketing
10. Customer services
11. Information services
12. Human resources
2) COST/BENEFIT (OP_COSTBENEF)
Q2. Based on your results to date, please rate the relationship between the benefits of the Balanced Scorecard compared with its costs?
Scale: 0 (Costs greatly exceed benefits), 1 (Costs exceed benefits), 2 (Costs equal benefits), 3 (Benefits exceed costs), 4 (Benefits exceed costs)

3) INTEGRATION (OP_INTEGRATION)
Q3. Please rate the following roles of the Balanced Scorecard for your Business Unit.
Scale: 0 (Not at all important), 1 (Little importance), 2 (Average importance), 3 (High importance), 4 (Extreme importance)
1. Strategic reflection
2. Communication of strategy
3. Strategic alignment
4. Performance measurement
5. Performance culture
6. Change management
7. Strategic planning
8. Strategic control

4) AUTONOMY (OP_AUTONOMY)
Q4. To what extent has the Balanced Scorecard given your Business Unit(s) greater autonomy over the following?
Scale: 0 (Much less autonomy), 1 (Less autonomy), 2 (Same autonomy), 3 (More autonomy), 4 (Much more autonomy)
1. In general
2. Business Unit goals/objectives
3. New product/service introduction
4. Product/service modification
5. Business unit restructuring
6. Recruitment/Career development
7. Supplier selection
8. Customer selection
9. Performance measurement
10. Incentive scheme

Appendix B
Surveyed questions used to measure sources of organisational performance (SOP) 35 single questions clustered around the five principles of the SFO model

1) EXECUTIVE LEADERSHIP (SOP_EXEICLEAD)
Q1. To what extent do you feel that your Balanced Scorecard development was supported by corporate management?
Q2. Please rate the involvement of the following people with the Balanced Scorecard development in your Business Unit.
Scale: 0 (No involvement), 1 (Little involvement), 2 (Average involvement), 3 (High involvement), 4 (Extreme involvement)
1. Corporate management
2. Business unit management

2) TRANSLATE THE STRATEGY (SOP_TRANSTRAT)
Q3. How important was the Balanced Scorecard framework for developing your strategy map?
Scale: 0 (Not at all important), 1 (Little importance), 2 (Average importance), 3 (High importance), 4 (Extremely important)
Q4. Please rate the use of the Balanced Scorecard for fixing strategic priorities and for strategic decision-making?
Scale: 0 (Not useful), 1 (Little use), 2 (Average use), 3 (High use), 4 (Extremely useful)
Q5. To what extent does your strategy map represent the story of your Business Unit strategy?
Scale: 0 (No representation), 1 (Little representation), 2 (Average representation), 3 (Good representation), 4 (Excellent representation)

3) LINK AND ALIGN THE ORGANISATION (SOP_ALIGNORG)
Q6. To what extent has the development of Balanced Scorecards within your Business Unit influenced you to restructure the following?
Scale: 0 (Not at all influenced), 1 (Little influence), 2 (Average influence), 3 (High influence), 4 (Extremely influenced)
1. Processes
2. Services
3. Competencies

Q7. If other Business Units exist within your organisation, to what extent has the Balanced Scorecard encouraged you to better integrate with them?
Scale: 0 (Not at all encouraged), 1 (Little encouragement), 2 (Average encouragement), 3 (High encouragement), 4 (Extremely encouraged)

4) MAKE STRATEGY EVERYONE'S JOB (SOP_EVERYONE)
Q8. Please rate the involvement of the following people with the Balanced Scorecard development in your Business Unit.
Scale: 0 (No involvement), 1 (Little involvement), 2 (Average involvement), 3 (High involvement), 4 (Extreme involvement)
1. Accounting/finance
2. Research and development
3. Operations/manufacturing
4. Purchasing
5. Distribution
6. Quality
7. Sales and marketing
8. Customer services
9. Information services
10. Human resources

Q9. To what extent does your Business Unit communicate its strategic objectives within the organisation?
*Scale: 0 (Not communicated), 1 (Little communication), 2 (Average communication), 3 (High communication), 4 (Extreme communication)*

Q10. To what extent do you ensure that employees are aware of their role in achieving the Business Unit’s objectives?
*Scale: 0 (Not at all), 1 (Little), 2 (Average), 3 (High), 4 (Extremely)*

5) MAKE STRATEGY A CONTINUOUS PROCESS (SOP_CONTPROC)

Q11. How often are the Balanced Scorecard objectives reviewed within your Business Unit?
*Scale: 0 (Not yet been reviewed), 1 (Annually), 2 (Every 6 months), 3 (Quarterly), 4 (Monthly)*

Q12. To what extent are the following practices, processes and systems influenced by the Balanced Scorecard objectives within your Business Unit?
*Scale: 0 (Not at all influenced), 1 (Little influence), 2 (Average influence), 3 (High influence), 4 (Extremely influenced)*

1. Strategy budget
2. Operational budget
3. Activity Based Costing initiatives
4. Activity Based Management initiatives
5. Total Quality Management initiatives
6. Change management initiatives
7. Competency profiles
8. Recruitment
9. Employee empowerment
10. Business Process reengineering
11. Benchmarking
12. Capital investment decisions