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Strategic management accounting and business strategy: a loose coupling?

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Abstract

Purpose – The purpose of this paper is to investigate whether business strategy influences strategic management accounting (SMA) usage. Business strategy has been operationalized through strategic pattern, mission and positioning.

Design/methodology/approach – The paper is based on an internet questionnaire survey of Italian companies. Multiple regression analysis is used to test the impact of strategic variables (pattern, mission and positioning) on SMA usage. Company size is included as control variable.

Findings – Several SMA techniques appear to be used in Italian companies as they are in other countries investigated in different studies. Customer accounting, competitive position monitoring, competitor performance appraisal based on published financial statement and quality costing represent the most widely used SMA techniques in the Italian sample. From the regression analysis, both defender- and cost leader-type of strategy are found to be more willing to use SMA techniques addressing cost information.

Research limitations/implications – The issue, common in contingent research, of business strategy definition and operationalization constitutes the main limitation of the paper; in an attempt to restrict its effect, it uses three strategic typologies (pattern, mission and positioning) and employs a measurement method used in previous studies. A second issue concerns the definition of SMA techniques. There is no concurred list of SMA techniques in the literature and further discussion is expected in the future.

Originality/value – First, empirical evidence is provided to a field (SMA) where empirical research is needed in order to be comparable with traditional management accounting techniques. Second, for the first time in SMA studies, a framework is employed that considers all of the three main strategic variables (pattern, mission and positioning) used in management accounting literature. As a result, the loose coupling between SMA techniques and business strategy typologies indicates (with the possible exception of cost-related SMA techniques) that the same SMA technique can support different strategic approaches of the company.

Keywords Strategic management, Accounting, Corporate strategy, Italy

Paper type Research paper

1. Introduction

This paper attempts to extend the research questions concerning the role of business strategy into the area of strategic management accounting (SMA) by exploring its linkages with the implementation and usage of SMA techniques in companies.

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Understanding the relationships between strategy and accounting is one of the focal points in the reflections based on a contingent view of accounting (Chapman, 1997). Within this issue, the fundamental relationship between strategy and management control systems (MCS) has been widely explored (Dent, 1990; Chenhall, 2003; Langfield-Smith, 2007). Since the 1980s surveys and case studies have investigated the connection between particular elements of the MCS and the specific strategy adopted by the firms under a contingency theory approach (Miller and Friesen, 1982; Govindarajan and Gupta, 1985; Simons, 1987, 1990; Govindarajan, 1988; Shank and Govindarajan, 1992a; Bruggeman and Van Der Stede, 1993; Chenhall and Langfield-Smith, 1998). Other contingent studies have tested the relationship between strategy, MCS and performance (Simons, 1987; Govindarajan and Fisher, 1990; Chenhall and Langfield-Smith, 1998). Other authors have researched the role strategy might play in accounting system design (Dent, 1990; Chapman, 1997; Langfield-Smith, 1997, 2005; Chenhall, 2005a).

In the management accounting literature, the term SMA was introduced for the first time by Simmonds (1981), and this theme was subsequently positioned by Bromwich (1990) in an influential paper; in the USA, Kaplan, Cooper and Shank developed innovative approaches to costing and strategic use of cost information, thus opening the path to Shank's proposal of strategic cost management (SCM), addressed as the innovative approach that could overcome the crisis condition in traditional management accounting (Shank, 1989; Shank and Govindarajan, 1989, 1993). The "external orientation" of SMA was well established by the scholars who dealt with it, however, it can be interpreted in different ways, and there is no consensus on a clear definition in literature (Langfield-Smith, 2008). Only in recent years have management accounting techniques, considered to belong to SMA techniques, been object of surveys and contingent research (Guilding *et al.*, 2000; Cravens and Guilding, 2001; Cadez and Guilding, 2007, 2008).

In this paper, this fundamental research question has been addressed:

RQ1. Does SMA techniques usage differ with regard to the particular business strategy adopted?

Undertaking such research can be relevant in two ways. First, due to the wide range of approaches available to SMA, the findings could help managers in their choice of SMA technique to adopt in a company-specific strategic setting. Second, the issue of the linkage between strategy and SMA is explored in a new perspective: while SMA has always been considered as the informative support for strategic decision making by managers, only a few studies have considered strategy, to some extent, as one of the variables affecting the introduction of SMA in organizations (Cravens and Guilding, 2001; Cadez and Guilding, 2008). Here, the focus is placed on business strategy by considering it the main variable of a contingent model of SMA orientation in organizations.

In order to perform the research, a web-questionnaire survey was conducted concerning 11 SMA techniques used at a business unit level in a sample of medium-large Italian companies. In modelling the contingent framework of the study, business strategy was considered as the independent variable and was operationalized including pattern, mission and position strategy dimensions (according to a scheme adapted from Langfield-Smith (1997, 2007)). In addition, company size was included as control variable. The multidimensional perspective in operationalizing strategy as an independent variable has been widely adopted in MCS contingent studies, but is

relatively new with respect to contingent research on SMA. Considering that the influence of strategy on the design of MCS has been widely confirmed in literature, we could expect this variable to be even more critical in the design of SMA systems.

After following the specifications of Gerdin and Greve (2004) for contingency choices and research models of analysis, the findings of our study partially confute the role of pursued strategy as a major factor affecting SMA technique usage. The contribution of the paper is therefore in addressing the potential flexibility of the adoption and usage of SMA techniques in different pursued business strategies. This means that different strategies do not clearly imply different orientations in the adoption of SMA tools. In other words, the terms “strategic” referred to these techniques can be interpreted solely as the ability to provide information to support strategic decision-making process, without a clear preference of certain techniques according to the strategies followed. As a consequence, the term “strategic” in SMA should be substantially interpreted as the support the techniques provide in strategic decision-making process, but a loose couple with business strategy would rise if considering the reverse relation between different strategic typologies pursued and specific SMA techniques. These results could also reflect the ambiguity of the concept of strategy and the possibility that companies will follow aspects of different strategic typologies to varying degrees (Langfield-Smith, 2007).

The paper is organized as follows: in the next section, a brief review of the SMA concept and the definition of SMA techniques from previous survey-based research is provided; the matter of strategy as contingent variable is also discussed. Following this, the description of the research framework is developed and hypotheses are formulated. The subsequent sections are dedicated to the empirical study: the research method adopted, the variable measurement and the results are presented. Finally, the main findings of the study and some limitations and conclusions are discussed.

2. Literature review

2.1 SMA techniques: identification and selection

The increase in research on SMA is due to the increasing importance to managers of information from outside the boundaries of the firm: Simmonds (1981) and Bromwich (1990) pointed out the external focus of SMA, and further research has been consistent with their premise.

From a strategic management perspective, Brouthers and Roozen (1999) addressed the following “strategic functions” that information provided by a strategic accounting system should support:

- environmental analysis;
- strategic alternative generation;
- strategic alternative selection;
- planning the strategic implementation;
- implementing the strategic plan; and
- controlling the strategic management process.

This information should, therefore, be:

- mostly non-financial;
- focused on the future;

- both internal and external; and
- based on reliable projections of the future.

In the accounting literature, there is no agreed definition of SMA (Langfield-Smith, 2008). Even though the “external orientation” of SMA is well established, it can be interpreted in different ways. Roslender and Hart (2003, p. 272) simply suggest that “SMA is about making management accounting more strategic”. Dealing with the aforementioned classic distinction between the US approach to SCM and SMA, Langfield-Smith (2008) points out a unifying link between the two in the “strategic orientation to the generation, interpretation and analysis of management accounting information”, and “competitors’ activities provide the key dimension for comparison”.

The “external orientation” (“outward looking”: Guilding *et al.* (2000)) of SMA can be referred to the importance of accounting information about competitors, suppliers and customers. Simmonds (1981, 1982, 1986) developed a conceptual framework underlying the importance of competitor information (related to cost, prices, market share, etc.) in developing and monitoring business strategy. Later, various authors recognized the role competitor information plays in achieving a competitive advantage (Jones, 1988; Bromwich, 1990; Ward, 1992; Moon and Bates, 1993). Several approaches – based on accounting, financial and non-financial information – can help in this effort: competitive benchmarking, financial statement competitive analysis and position monitoring. Bromwich (1990) addressed the need for external orientation which focuses on the product offer that can satisfy customer needs but, at the same time, takes into account the product attribute costs. It is also possible to interpret as satisfaction of customer needs the achievement of a desired target profit/cost (Monden and Hamada, 1991; Morgan, 1993; Ewert and Ernst, 1999) or performance (Narver and Slater, 1990). In the USA, Shank and Govindarajan (1989, 1992a, b, 1993) considered useful internal and external information that enables a company to fruitfully exploit connections with suppliers as well as customers; their approach exploited the potential of value chain analysis by developing SCM, gaining a competitive advantage in a value chain perspective of accounting. These approaches lead to greater awareness of the internal and external information (cost drivers, accurate product costs, cost of activities along the extended value chain and value retained by each participant of the value chain), which can support both cost leader and differentiation strategic decisions (Porter, 1985). Recently, Anderson (2007) has developed the approach based on value chain analysis, introducing a fundamental distinction between structural cost management, which is oriented towards building cost structures coherent with strategy by means of organizational, product and process design tools, and executional cost management, which embraces effective measurement tools to evaluate cost performance.

In qualifying the external orientation of SMA, a further contribution has been by Roslender and Hart (2002), who have provided a framework for integrating management accounting and marketing to advance the potential of SMA. They distinguish between the approaches that have been taken to integrate management accounting and strategy, from those that seek to integrate management accounting and marketing, and generally find shortcomings in the first approach.

In addition to the external orientation of SMA, a further consideration is that most of SMA techniques are “cost-based” (Hoque, 2001). This is not surprising, considering the advances in cost management in the last few decades that have enabled accounting

information to support strategic decision making. Since the spread of the activity-based costing (ABC) approach (Kaplan, 1984; Johnson and Kaplan, 1987; Cooper and Kaplan, 1987, 1988) the dimensions of cost analysis have been expanded, and much greater refinement in cost information of traditional or yet unexplored cost objects, such as activities, customers, product attributes and unused capacity, has been allowed (Kaplan and Cooper, 1998; Maher, 2005). This change in costing has fostered applications in building information to support decisions to enhance competitive advantage in an increasingly competitive business environment: cost information can have a strategic external orientation if it is able to support decisions that increase or contribute to creating a sustainable competitive advantage in terms of more efficient resource usage (e.g. reducing or avoiding non-value-added activities/costs: Miller (1996) and Cokins (2004)), to increase the value delivered to the customer (e.g. aligning the costs and the perceived value of product attributes: McNair *et al.* (2001)) and to strategically position the product or service in the marketplace (e.g. making a unit cost for pricing that avoids cross-subsidization in a differentiated product portfolio: Cardinaels *et al.* (2004)). Several studies on ABC have examined, to some extent, the issue of the link between ABC and business strategy: Shields (1995), in exploring the degree of success in ABC implementation, found the link to competitive strategies to be one of the critical variables of ABC success; Gosselin (1997) showed that in pursuing strategy companies acting as “prospectors” more frequently adopted activity-based techniques than did “analyzers” and “defenders” (Miles and Snow, 1978); Baines and Langfield-Smith (2003) found that increased emphasis on differentiation strategies was significantly related to the increased use of advanced management accounting practices, Bhimani *et al.* (2005) on the contrary found that strategy does not seem to influence the decision to implement ABC.

In addition to cost, the relevance of non-financial information has also increased due to its ability to provide predictive trends in performance of the overall company and of operational business processes (Nanni *et al.*, 1992; Ittner and Larcker, 1998): the widespread use of the balanced scorecard (BSC) is an indication of the need to find integrated/multidimensional management accounting tools to drive organizations strategically (Kaplan and Norton, 1996a, b, 2000). In this respect, research has focused on links between BSC usage and market position as a contingent factor (Hoque and James, 2000) and on the effectiveness of BSC as a strategy communication and management control device (Norreklit, 2000; Malina and Selto, 2001; Chenhall, 2005b).

The selection of the techniques investigated in this study was made considering the main SMA criteria as recognized in the aforementioned literature: external or future focus, multidimensionality (objects) and measurement typologies (financial/non-financial). Previous studies by Guilding *et al.* (2000) and Cravens and Guilding (2001) provide lists of SMA techniques investigated in their research: these references have been taken as starting points to perform the selection for our study. In addition, recent Italian surveys, carried out to monitor the spread of advanced management accounting techniques, were also considered (Marasca and Silvi, 2004; Arena and Azzone, 2005), in order to make a preliminary assessment of their use and understanding in Italy. Taking into account the results of these studies, techniques such as attribute costing (Bromwich, 1990), brand valuation (Guilding and Pike, 1994) and lean accounting (Johnson, 2006) were not considered among the SMA techniques in our study.

The practices selected comprise the following: ABC/management (ABC/M), life cycle costing, quality costing, target costing, value chain costing, customer accounting (CA), competitive position monitoring, competitor cost assessment, competitor performance appraisal based on public financial statements, benchmarking, integrated performance measurement and BSC. They have been grouped in four broad categories (costing, customer, competitor and performance) according to their main objective. Table I provides a short description of each technique based on the literature, while Appendix 1 provides the definitions used to operationalize the practices under study.

2.2 Business strategy

Several critical aspects occur in empirical studies when business strategy is considered as a contingent variable. The multidimensional nature of strategy, the difference between intended and realized strategy, the difficulty of communicating the significance of different strategy typologies to managers and the recognition of strategy as an ongoing development process represent weak elements in operationalizing strategy (Langfield-Smith, 2007, pp. 776-7). However, the typologies of Miles and Snow (1978), Gupta and Govindarajan (1984) and Porter (1980, 1985) have attracted most attention in contingent research, because, as recognized by Langfield-Smith (1997), they make it possible to cluster firms with (apparently) homogeneous features.

Miles and Snow (1978) consider that management has to face three types of problems: the entrepreneurial (the strategic management of product and markets), the technological (the production and distribution of products) and the administrative (the organization to support the entrepreneurial and technical decisions). When these problems are solved in a successful manner, a stable strategic pattern is identified. Along this path, three typologies are shown according to their rate of change in product or market[1]. Prospectors compete primarily through product innovation, offer a wide product range and are considered pioneers in the product and market area. Marketing and research and development (R&D) are the principal functions in these organizations. Defenders, on the other hand, operate in a relatively stable environment and offer a narrow product range. They focus on efficiency, so they prefer production and engineering functions. Analyzers combine features of these two typologies, because they compete in a two-type product-market domain; one is more stable so, as defenders, they concentrate on efficiency, while the other is more dynamic so, as prospectors, they contrast competitors through product innovation.

Gupta and Govindarajan (1984) adopt a life cycle approach using the concept of strategic mission (or portfolio strategy). According to the life cycle stage in which the market and product match each other, the company will prefer one mission to the another. Gupta and Govindarajan describe four strategic missions depending on the balance between the objectives of market-share growth and short-run profit maximization. Build mission aims to increase market share and competitive position, even at the expense of short-term earnings and cash flow. At the opposite end, harvest mission aims to maximise short-term earnings and cash flow rather than improve market share. Hold mission finds itself in the middle between the previous configurations and divest strategy implies the choice to end the activity.

Finally, Porter (1980, 1985) distinguishes three generic strategies that allow the company to achieve a sustainable competitive advantage. Cost leadership strategy implies obtaining the lowest cost compared to competitors; it is possible by exploiting

SMA technique category	SMA technique	Description
Costing	ABC/M	The technique is based on the definition of the activities performed by the company; they are considered the ultimate causes of indirect costs (Cooper <i>et al.</i> , 1992; Cooper and Kaplan, 1999). ABC strategic focus consists in supporting the management of the activities through which it is possible to define actions aiming at achieving a competitive advantage (Kaplan and Cooper, 1998; Palmer, 1992; Shank and Govindarajan, 1989)
	Life cycle costing	It aims at calculating the total cost of a product throughout its life cycle (from the design to the decline, through introduction, growth and maturity) (Berliner and Brimson, 1988; Shields and Young, 1991; Wilson, 1991). Its clear long-term accounting perspective and market orientation make it part of the group as SMA techniques. In a similar vein, total cost of ownership has been underlined as a long-term and strategic orientation SMA tool (Ellram and Siferd, 1998)
	Quality costing	Product quality has become a precondition to compete in the market. This technique classifies and monitors costs as deriving from quality prevention, appraisal and internal and external failures (Heagy, 1991). Modern competition also requires the monitoring of safety and environmental costs. In a strategic perspective, the technique must support the pursuit of quality (Simpson and Muthler, 1987; Carr and Tyson, 1992)
	Target costing	Target cost results from the difference between the product price, derived from how much the market is willing to pay, and a desired target profit. Through an accurate product design, the costs must be contained to achieve the target cost (Monden and Hamada, 1991; Morgan, 1993). External market factors intervene frequently in this SMA technique
	Value chain costing	Developing the value-chain model (Porter, 1985), Shank and Govindarajan (1989, 1992a, b) propose an approach to accounting that considers all the activities performed from the design to the distribution of the product. The strategic implications regard the exploiting of the economies and efficiencies deriving from the external linkages between the company as well as suppliers and customers
Customer	CA	The technique considers customers or group of customers as a unit of accounting analysis (Bellis-Jones, 1989; Guilding and McManus, 2002). CA includes all the practices directed to appraise profit, sales or costs deriving from customers or customer segments. Since it is widely related with "relational marketing", this accounting approach is classified as an SMA technique
Competitor	Competitive position monitoring	The technique is constituted by the provision of competitor information. These include sales, market share, volume and unit costs (Simmonds, 1981, 1986). According to the information provided, the company is able to assess its own position relative to main competitors and, consequently, control or formulate its strategy

Table I.
SMA techniques from the literature

(continued)

SMA technique category	SMA technique	Description
	Competitor cost assessment	Competitor cost assessment concentrates uniquely on cost structures of competitors (Simmonds, 1981). There can be different sources of such information. Ward (1992) suggests some indirect sources such as physical observation, common suppliers or customers and ex-employees of competitors
	Competitor performance appraisal based on public financial statements	A relevant source of competitor evaluation is constituted by public financial statements. Moon and Bates (1993) underline the strategic insights that it is possible to obtain from this type of analysis. The technique, which represents an elaboration of common and traditional methods, finds a strengthening in today's evolution of IASB that may allow for a simpler comparison between companies of different countries
Performance	Benchmarking	The technique involves identifying the best practices and comparing the organization's performance to those practices with the goal of improvement. There are many types of benchmarking (Miller <i>et al.</i> , 1992; Mcnair and Leibfried, 1992) but, in general, they underline the external strategic orientation toward competitors
	Integrated performance measurement and BSC	The consideration of both financial and non-financial measures defines an integrated performance measurement system (Cross and Lynch, 1989; Nanni <i>et al.</i> , 1992). BSC belongs to this class, and its role in the strategic management cycle is apparent through the four perspectives (Kaplan and Norton, 1996a, b, 2000)

Table I.

the economies of scale and scope and achieving superior technology that grants a low cost. Differentiation strategy focuses on providing products that are perceived by customers to be unique. This is possible by offering superior quality, customer service and brand image. The sources of this advantage could be: brand loyalty, product design, after-sale services and retail facilities. Focus strategy implies competing in a specific market segment through either cost leadership or differentiation.

Table II summarizes these strategic variables that constitute the foundation of a consistent part of the empirical research addressing MCS and strategy: prospector/defender regards the rate of change in product and markets (strategic pattern), build/harvest concerns the strategic mission and differentiation/cost leadership relates to the way the company decides to compete in the market (strategic positioning)[2].

In exploring the relationship between MCS and strategy, the operationalization of the latter has been widely performed according to these dimensions (Langfield-Smith, 2007). Surveys and case studies have investigated the connection between particular elements

Strategic dimension	Author/s	Typologies
Strategic pattern	Miles and Snow (1978)	Prospector vs defender
Strategic mission	Gupta and Govindarajan (1984)	Build vs harvest
Strategic positioning	Porter (1980, 1985)	Differentiation vs cost leadership

Table II.
Strategic
variables/typologies

of the MCS and the specific strategy of firms (Miller and Friesen, 1982; Govindarajan and Gupta, 1985; Simons, 1987, 1990; Govindarajan, 1988; Shank and Govindarajan, 1992a; Bruggeman and Van Der Stede, 1993; Chenhall and Langfield-Smith, 1998). All of these studies adopted a contingency theory research approach: their proclivity was to analyse strategy from the business level and the most widely discussed problem regards the generic constructs of strategy (Miller and Dess, 1993; Kotha and Vadlamani, 1995; Chenhall and Langfield-Smith, 1998; Bouwens and Abernethy, 2000; Chenhall, 2005b). According to Langfield-Smith (1997, p. 212), these studies have not generated findings that are comparable, because of the different paths adopted in operationalizing business strategy and the different scope and focus of these typologies.

In an attempt to capture the multidimensional nature of strategy, the aforementioned strategic typologies are combined so as to consider the complexity of strategy. In seeking to integrate the dimensions of strategy, Shank and Govindarajan (1992a) found some consistent fit between Porter's classification and that of Gupta and Govindarajan. They observed that companies pursuing a differentiation strategy and those pursuing a build strategy faced the same environmental uncertainty; similar considerations could be developed for cost leadership and hold mission followers. A few years later, Langfield-Smith (1997) and then Kald *et al.* (2000) sought to integrate the three mentioned classifications; they proposed a series of viable combinations, calling for empirical research to validate them. In greater detail, Langfield-Smith (1997) mitigated the limits of each classification in a renewed integrated framework to describe the strategies followed by particular business units along three dimensions (Table II): strategic positioning (cost leadership and differentiation), strategic pattern (prospector, analyzer and defender) and strategic mission (build, hold and harvest).

Actual contingent research on SMA techniques has considered and operationalized only one of the three dimensions of strategy (pattern, mission and positioning) or has adopted different dimensions, as in Cravens and Guilding (2001). In studying the influence of strategy on SMA, what is novel about this paper is its attempt to consider the strategy variable in its multidimensional perspective by simultaneous exploration of the three typologies established in the literature. In this respect, our paper contributes to previous contingent models on SMA, where this multidimensional perspective of strategy has only been partially operationalized.

2.3 Contingent survey-based studies on SMA

The research on SMA has only in recent years been dedicated to exploration of the contingent factors underpinning the implementation and use of a number of SMA techniques. These studies are survey based, adopt a contingent model and deal with a set of tools to be tested which were selected according to the aforementioned basic SMA criteria of identification. Table III reports a summary of these surveys and related findings; these studies constitute the path of research on SMA, which this paper contributes to. In addition to the studies reported in the table, two other survey-based studies on SMA can be found, Guilding *et al.* (2000) and Cadez and Guilding (2007), which have not been included, as they primarily develop an international comparison of SMA practices in different countries rather than try to collocate their research in a contingent framework.

Assessing contingent variables associated with adoption of competitor-focused accounting (CFA) techniques, Guilding (1999) found a significant relationship between CFA and competitive strategy, strategic mission and company size;

Papers	Contingent factor/s	SMA techniques considered	Findings
Guilting (1999)	Strategic pattern (Miles and Snow, 1978) Strategic mission (Gupta and Govindarajan, 1984) Company size Industry	CFA practices	Positive association between company size, strategic pattern and strategic mission and CFA Little evidence for industry
Cravens and Guilting (2001)	Competitive strategy (Porter, 1985)	SMA techniques	Positive association between "R&D", "Broad market coverage" strategy follower and SMA
Guilting and McManus (2002)	Intensity of competition,br Market orientation Company size	CA	Positive association between market orientation and CA Weak association between competition intensity and CA
Cadez and Guilting (2008)	Business strategy Degree to which adopted strategy is deliberately formulated Market orientation Firm size	SMA techniques	Little evidence regarding size Positive relation between accountants' strategic decision making participation and the application of a prospector strategy and also deliberate strategy formulation SMA usage is positively associated with adopting a prospector strategy, deliberate strategy formulation, company size, and accountants' strategic decision making participation SMA usage also positively affects performance

Table III.
SMA survey-based
studies under the
contingency theory

competitive strategy was derived by means of Miles and Snow's (1978) prospector/defender typologies, while strategic mission was measured using Govindarajan and Gupta's (1985) approach. In exploring the relationship between SMA usage and competitive strategy, Cravens and Guilding (2001) used eight sub-dimensions based on Porter (1985) (R&D, product quality, product technology, product range, service quality, price level, advertising expenditure level and market coverage), and significant relationships were found with R&D and breadth of market coverage. Guilding and McManus (2002) explored the use of CA techniques, and their findings suggested a greater incidence of CA practices and a positive relationship between competition intensity (measured on a scale of perceived intensity related to selling and distribution, quality and variety of products, price, market share and customer service) and market orientation. Cadez and Guilding (2008) examined the effect of strategic choices, market orientation, and company size on two distinct dimensions of SMA and the mediating effect of SMA on company performance in a comprehensive contingent model. The authors have found that the application of SMA systems is not necessarily related to superior performance, but that superior performance is a product of an appropriate match between the contingent factors considered (business strategy, degree to which adopted strategy is deliberately formulated, market orientation and firm size) and SMA application. In this study, business strategy was operationalized starting from the prospector/defender dimension and its measurement developed by Shortell and Zajack (1990).

3. Research framework

3.1 Model and variables

In investigation of business strategy as the main variable affecting the use of SMA techniques, the sub-dimensions of strategic pattern, mission and positioning are considered. In other words, the investigation is "whether SMA usage rate is associated with strategy (measured by means of three variables)". Given these premises, the form of contingency fit tested here invokes the Cartesian paradigm (Gerdin and Greve, 2004) because it refers to the view of context-structure fit as a "continuum", opposed to the configuration approach, which advocates "states of fit". Concentrating on the link between business strategy and SMA technique usage, we tend to exclude company performance from the analysis. A congruence approach is adopted here as the fit between context and structure is not analysed with regard to performance (Gerdin and Greve, 2004). The alternative scheme is the contingency approach, where the aim is to demonstrate that higher degree of fit provides higher performance. With respect to this distinction and what asserted by Chenhall and Langfield-Smith (1998) and Chenhall (2003) about the need to use performance as the dependent variable contingency-based management accounting research, many previous works in management accounting research that declare to find in the "contingency-based" studies (Bruggeman and Van Der Stede, 1993; Guilding, 1999; Guilding and McManus, 2002) would be better described as applications of the "congruency paradigm" (Cadez and Guilding, 2008). This view once more suggests that this research adopts a "congruency paradigm". In analysing previous studies presented in Table III and classifying them with Gerdin and Greve's (2004) taxonomy, we were able to distinguish two papers that adopt the congruence paradigm (Guilding, 1999; Guilding and McManus, 2002), one in contingency paradigm (Cadez and Guilding, 2008) and one that seems to use both (Cravens and Guilding (2001) investigates the impact of contingencies on SMA use and their

impact on organizational performance). Such clarification will be useful for comparing results with research which tests a form of contingency fit similar to the one we employ.

Furthermore, as Luft and Shields (2003) have addressed, the causal model that we have proposed is additive, because we consider that strategic choices affect SMA usage, the other contingent variables *ceteris paribus*. Company size was also included as control variable. Industry was initially included as a second control variable, but then it was excluded because it did not lead to any significant finding. Brierley *et al.* (2007) argue that there are no significant differences in product costing practices across manufacturing industries. In a previous study of Guilding (1999), negligible support was also found for the relationship between competitor-focus accounting and industry. In fact, this variable encounters the problem of industrial classification schemes, which would be solved by using other proxies such as degree of competition, technology of production, etc. (Guilding, 1999, p. 594).

In summary, our research model includes four contingent factors (three of which are related to strategy and one to size) as independent variables, and SMA usage as the dependent variable.

As previously mentioned, the reason for including three strategic dimensions (pattern, mission and positioning), summarized by Langfield-Smith (1997), as contingencies in SMA usage, is to try to capture the multidimensional nature of strategy. This effort is much more valuable in survey-based SMA studies where only one or two of the strategic dimensions were considered. For that reason pattern, mission and positioning are independent variables in our model.

Company size is also included in the model as control variable, because in contingency research it is frequently mentioned as a variable influencing management accounting system design. Previous studies (Bruns and Waterhouse, 1975; Merchant, 1981; Guilding, 1999; Guilding and McManus, 2002) have demonstrated that larger companies are more willing to use accounting sophistication. In this way, considering SMA as comprising advanced accounting techniques we would expect it to have an influence on SMA usage rate.

SMA usage rate is the dependent variable in the model, as our interest is to understand how it varies with different strategic choices. This variable will be divided into the four categories of SMA techniques developed in Table I.

3.2 Hypotheses formulation

The investigation around the variables influencing SMA usage rate were based on the developing of hypotheses which consider the basic information requirements expected to pursue different strategic goals, as found out in previous theoretical and empirical research. Strategies have been identified according with the framework depicted in Table II. This allowed the identification of six categories of companies grouped in three classes (prospector vs defender; build vs harvest and differentiation vs cost leadership) that have been considered in relation to each contingent variable.

Strategic pattern (prospector vs defender). Prospectors are generally recognised as innovators and pioneers in market and product whereas defenders are more efficiency oriented and neglect innovation (Miles and Snow, 1978). It is well recognized that prospectors and defenders represent the extremes of a continuum and that prospectors need much more environmental and market information than do defenders (Shortell and Zajack, 1990; Smith *et al.*, 1989). Furthermore, Simons' (1987) findings demonstrated that

prospectors need a broader range of information than defenders. Abernethy and Gutrie (1994) found that sophisticated management accounting system (as SMA when compared to traditional MA) has a positive effect on performance in firms that adopt a prospector strategy than in firms that adopt a defender strategy. Gosselin (1997), in studying the adoption of activity management (as comprising the three levels of activity analysis, activity cost analysis and ABC), suggested that strategic pattern influences the adoption of the innovation because he finds that prospector strategy is associated with the adoption of activity management approaches. In studying CFA techniques, Guilding (1999) underlined the more external (strategic) orientation of prospectors compared with defenders. We believe that the type of information needed by prospectors could be acquired by adoption of a wider range of SMA techniques than adopted by defenders. Moreover, the latter are more willing to cost control, because they are efficiency oriented (Miles and Snow, 1978; Langfield-Smith, 2007); this lead us to the hypothesis that defenders will use more SMA-costing techniques than prospectors. Thus, we could expect that:

H1a. SMA (customer, competitor and performance orientations) usage rates are higher in “prospectors” than in “defenders”.

H1b. SMA (costing) usage rate is higher in “defenders” than in “prospectors”.

Strategic mission (build vs harvest). Build companies tend to increase market share and competitive position whereas harvest companies try to maximise short-term earnings (Gupta and Govindarajan, 1984). It has been recognized that build mission needs more external, non-financial and future-oriented information than harvest mission (Langfield-Smith, 1997; Chenhall, 2003). This leads us to believe that build companies are more willing to use SMA techniques to a greater extent than are harvest companies. Support for this idea is provided by Guilding (1999) findings of a weak, though positive and statistically significant relationship between build and CFA usage rate (a subsample of SMA techniques). For this reason, the following hypothesis was formulated:

H2. SMA (customer, competitor, costing and performance orientations) usage rates are higher in “build” than in “harvest” companies.

Strategic positioning (differentiation vs cost leadership). Differentiation strategy implies the provision of a superior product or service whereas cost leadership strategy needs to find the lowest cost compared to competitors (Porter, 1980, 1985). Shank and Govindarajan (1992a) argued that cost leadership companies mainly use traditional costing systems and competitor (cost) analysis, while differentiating companies would pay attention to marketing and differentiation costs. This means that differentiators could be associated with both prospector and build companies because of their need for a wider range of information (Langfield-Smith, 1997; Chenhall, 2003). This is further confirmed by Chenhall and Langfield-Smith (1998), where combinations of management techniques and management accounting practices are examined in order to understand how they affect performance with different strategic priorities (differentiation vs cost leadership). They found that high-performing differentiators are associated with quality management techniques, integrated systems, team-based human resource structure and with management accounting practices including employee-based measures, benchmarking, strategic planning techniques and activity-based techniques. With respect to high-performing cost leaders, Chenhall and Langfield-Smith (1998) found an association with management techniques of improving existing processes, integrating systems,

innovating manufacturing systems and activity-based management accounting techniques. Also, the conclusion of Baines and Langfield-Smith (2003) support the idea that a competitive strategy based on differentiation leads to an increased use of management accounting practices. Furthermore, Porter (1980) suggested that cost controls were appropriated when following a cost leadership positioning (Langfield-Smith, 2007). For this reason, we could expect that:

H3a. SMA (customer, competitor and performance orientations) usage rates are higher in “differentiators” than in “cost leaders”.

H3b. SMA (costing) usage rate is higher in “cost leaders” than in “differentiators”.

4. Research method

4.1 Sampling procedures

Data were collected using an internet questionnaire survey. The initial sample comprised 328 companies obtained from “Business International” database[3] and it contained the largest Italian manufacturing firms (measured by sales higher than €25 million) from different industrial sectors. A prior phone contact directed to the “chief accountant”, “chief financial officer” or “controller” was made to present the research and to ensure participation related to a single business unit (if the company had more than one) because it constitutes the main unit of analysis in the research. From the phone contact, 113 companies declared they would not participate, so they were classified as “non-participants” and removed from the sample. Five companies were considered “non-participants” because they were business units of a corporation, which had already been included in the sample; four other companies did not participate because they were closing. The reasons for not participating were divided in a “too busy at the moment” or “not enough time” (51), “not interested in the research because the management accounting techniques considered in the questionnaire are irrelevant for my organization” (17), “the company policy does not permit us to compile research questionnaires” (19) and “we outsource the accounting activities” (17). The final sample size was 215 companies.

Afterwards an e-mail was sent containing the cover letter, access codes (username and password) and web link to the questionnaire. According to Kittleson’s (1997) follow-up advice on internet-based surveys, a first reminder was e-mailed after one week; a second one followed one week later. Then, 15 days after the second reminder, the web site of the questionnaire was disabled.

In total, 93 responses were received (43.3 per cent of the final sample). Only one could not be used. Therefore, 92 responses were received with a usable response rate of 42.8 per cent. The response pattern is presented in Table IV.

Initial sample size	328
Non-participants	113
Final sample size	215
First mailing respondents	46
First reminder respondents	28
Second reminder respondents	19
Total respondents	93
Unadjusted response rate (%)	43.3
Usable response rate (%)	42.8

Table IV.
Survey response pattern

Three investigations to estimate possible non-response bias were undertaken. The first one concerned a new e-mail contact when the research process was finished and the web site disabled, for ten non-respondents in order to understand the reason of their non-response. They justified primarily with "I am sorry, but I was too busy." The second investigation pertained to the comparison of the characteristics (in terms of sales and number of employees) of the respondents and non-respondents. These investigations showed that the "non-respondents" category had no substantial differences or features compared to the "respondents" category. The third analysis was conducted to look for differences in responses provided by "initial", "first reminder" and "second reminder" respondents. First, a comparison of the usage means for each SMA technique of the three groups was conducted. Then, an ANOVA test to verify the differences between the means of the three groups was carried out. None of the variables revealed any statistically significant association with the time of response. This indicates that non-response bias is not a significant threat to the validity of the research.

For analysing sample characteristics, it must be noted that all the companies of the sample are privately owned. Most of them (82) are family owned or headquarters of bigger companies, whereas ten are subsidiaries of multinational companies. Seven different industries are represented in the sample, plus there is a group representing a collection of companies from other various sectors: furniture and wooden products (27 companies); mechanical and electronic equipment (19); chemical and oil (15); automotive (nine); textile, fashion and clothing (seven); printing and editing (four); construction (two) and other sectors (nine). In terms of sales, half of the sample falls into the range €25-75 million of revenue. The other companies are shared between the ranges €76-250 million (about 25 per cent) and more than €250 million (about 20 per cent). The mean value for company size is €197 million and it is heavily conditioned by the revenue level of the larger companies.

4.2 Variable measurement

In order to measure the degree the SMA techniques were used (SMA usage), we employed the same approach of previous studies (Guilding *et al.*, 2000; Cravens and Guilding, 2001; Cadez and Guilding, 2007, 2008) employing the following question: "To what extent does your organization use the following accounting techniques?" Immediately following the question, the 11 previously addressed SMA techniques were listed. Next to each technique a Likert scale, ranging from 1 ("not at all") to 5 ("to a great extent") [4], was provided. In this sense, the purpose of the question is to measure the intensity of usage of each SMA technique and not the frequency. Next, to each accounting technique a link to the glossary gave a clear understanding of its significance. Appendix 1 provides the definitions of the accounting techniques included as glossary in the questionnaire. The same question was used in other studies (Guilding *et al.*, 2000; Cravens and Guilding, 2001; Cadez and Guilding, 2007, 2008) but with a different range of the Likert scale (from 1 to 7). The choice of a five rather than seven-point scale does not compromise the data characteristics (Dawes, 2008). In order to measure the SMA usage referring to each category (costing, customer, competitor and performance) presented in Table I, the mean of the responses for the techniques included in each category was calculated.

Business strategy was operationalized using the three dimensions of strategic pattern, strategic mission and strategic positioning reported in the first part of the paper.

We employed a measurement instrument derived from Shortell and Zajack (1990)[5]. For each dimension, a five-point scale was used with a description of opposite strategic profiles at the two extremes of the scale: harvest (1) and build (5), defender (1) and prospector (5), cost leader (1) and differentiator (5). This measurement method was previously used in other studies in SMA survey-based literature such as Guilding (1999) and Cadez and Guilding (2008). Appendix 2 provides the descriptions of the typologies included in the body of the questionnaire. None of the terms, defender, prospector, cost leader, differentiator and build or harvest were used in the questionnaire.

Company size was measured using total revenues. The database provided the company size in terms of revenues and number of employees; given the high correlation between the two measures ($r = 0.98$, $n = 92$, $p < 0.000$), revenues were selected as measure of company size. In order to normalize the data, a logarithmic transformation of the measure was necessary (Cadez and Guilding, 2008).

5. Results

Table V summarises the descriptive statistics of the 11 SMA techniques. They are presented in descending order of usage as the rank in the first column shows; the mean scores range from 3.57 (CA) to 2.28 (life cycle costing) and the actual range coincide with the theoretical range (1-5) for all the techniques. CA, competitive position monitoring, competitor performance appraisal on published financial statements and quality costing present mean usage scores above the midpoint of the measurement scale. The techniques examined are indeed strongly oriented towards providing information for decision making involving the two main external factors which influence the strategic success of the firm, i.e. customers and competitors. By also examining competitor cost assessment, which is very close to the midpoint of the scale, we can clearly see how competitor information plays a critical role in company decisions. Lower usage scores are registered for most of the costing techniques, except for quality costing, with the lowest position covered by life cycle costing. SMA techniques falling into the category “performance”, as defined in Table I, reveal a quite low level of usage: benchmarking ranks seventh and integrated performance measurement systems tenth.

In comparing our results with those of previous similar studies[6], we can confirm a strong orientation towards the need for competitor information (Table VI). Also in other

Rank	Variable	<i>n</i>	Median	Mean	SD	Actual range
1	CA	89	4	3.57	1.36	1-5
2	Competitive position monitoring	87	3	3.46	1.21	1-5
3	Competitor performance appraisal on published statements	85	3	3.29	1.37	1-5
4	Quality costing	87	3	3.08	1.37	1-5
5	Competitor cost assessment	86	3	2.96	1.23	1-5
6	Target costing	82	3	2.74	1.47	1-5
7	Benchmarking	84	3	2.73	1.33	1-5
8	Value chain costing	84	2/3	2.62	1.47	1-5
9	ABC/M	82	2	2.51	1.48	1-5
10	Integrated performance measurement systems	83	2	2.45	1.41	1-5
11	Life cycle costing	79	2	2.28	1.4	1-5

Table V.
Descriptive statistics of
SMA techniques

Table VI.
International comparison
of SMA techniques usage

Study	This study			Guiliding <i>et al.</i> (2000)			Cravens and Guiliding (2001)			Cadez and Guiliding (2007)		
	ITA	UK	USA	NZ	USA	USA	USA	USA	SLO (sub-sample)	AUS (sub-sample)	Rank	Mean
Sample size	215	155	920	217	915	298			388			
Total respondents	92	63	127	124	120	26			134			
Scale used	1-5 ^a	1-7	1-7	1-7	1-7	1-7			1-7			
CA	Rank 1	Mean 4.86	Rank NA	Rank NA	Rank NA	Rank NA			Rank 6	Mean 3.90	Rank 5	Mean 3.50
Competitive position monitoring	2	4.69	1	4.93	1	4.95			2	4.31	1	4.40
Competitor performance appraisal on published financial statements	3	4.44	2	4.78	2	4.50			3	4.50	3	4.04
Quality costing	4	4.12	4	3.11	6	3.07			4	3.46	9	3.07
Competitor cost assessment	5	3.95	3	4.37	3	4.09			5	4.09	9	3.38
Target costing	6	3.62	5	2.90	4	3.19			6	3.16	8	3.64
Benchmarking	7	3.61	NA	NA	5	NA			7	3.19	8	3.64
Value chain costing	8	3.43	6	2.60	5	3.15			8	3.15	5	3.92
ABC/M	9	3.27	NA	NA	6	NA			9	3.54	6	3.90
Integrated performance measurement systems	10	3.17	NA	NA	NA	NA			10	4.00	4	3.94
Life cycle costing	11	2.92	6	2.60	7	2.73			11	2.73	10	2.90

Note: ^aRecoded in seven-point scale according to Dawes (2002) in order to compare results with previous studies

countries (i.e. New Zealand, the UK, the USA, Australia and Slovenia), competitor-focus SMA techniques, and in particular competitive position monitoring and competitor performance appraisal on public financial statements, are among the most extensively used. Both the techniques find among the first three positions for each country. Moreover, CA appears to be used greater in Italy than in Slovenia and Australia (Cadez and Guilding, 2007) but is in line with another study conducted in Australia, specifically concerning CA techniques (Guilding and McManus, 2002). Competitor cost assessment is close to the midpoint of the measurement scale, in line with other countries (except for Slovenia). On the contrary, the rate of use of quality costing and target costing in Italy is much more similar to that of Slovenian companies than to the rest of the countries. The extent of usage of ABC/M in Italy and the USA appears to be similar; remember we address the degree of usage and not the degree of diffusion of the technique in a sample. For value chain costing, Slovenia is the country with the highest degree of usage and Italy finds in the second position. Life cycle costing is in the lowest position of usage in all the countries except for Australia.

Table VII reports a matrix of the Pearson correlation between SMA orientations (competitor, costing, performance and customer), strategy typologies (pattern, mission and positioning) and company size. All SMA orientations are positively correlated to each other, positioning variable is negatively related to SMA costing orientation and company size is positively related to both SMA performance orientation and positioning variable[7]. A result that could appear surprising is the absence of significant correlation between the pattern, mission and positioning variables. On this point, Langfield-Smith (1997: pp. 212-13) proposes a combination of the strategic variables aiming at integrating and comparing the results of several research on the relationship between MCS and strategy; in particular, considering the similar characteristics in terms of degree of environmental uncertainty, she proposes the viable combinations of defender/harvest/cost leaders and prospector/build/differentiator as the extremes of the spectrum of strategic typologies. However, at the same time, she affirms that "further empirical research needs to be undertaken to validate the combinations proposed" (Langfield-Smith, 1997, p. 213). Such assumptions are mainly theoretical and not based on empirical data. None of the empirical studies carried on to date aimed at responding to such a proposition by using the three strategic variables at the same time. In this respect, our research could be considered a test of the validity of those combinations if we could find a positive correlation between the pattern (defender vs prospector), mission (build vs harvest) and positioning (cost leader vs differentiator) variables. Possible explanations of the fact that results do not support this idea are:

- the inconsistency of the combinations; or
- the inconsistency of the sample in testing this idea of fit.

Given that this study is the first attempt to examine the three strategic variables simultaneously, further empirical work should be done to provide clear evidence.

The multiple regression method was employed on the data to test the hypotheses. According to Gerdin and Greve (2008), this approach is typically used to test the congruence approach of contingency fit in management accounting studies, as in this case. This choice is also coherent with Luft and Shields' (2003) framework on the additive causal model.

Table VII.
Matrix of Pearson
correlation coefficients

	Competitor orientation	Costing orientation	Performance orientation	Customer orientation	Mission	Positioning	Pattern
Competitor orientation	1						
Costing orientation	0.31 ***	1					
Performance orientation	0.38 ***	0.47 ***	1				
Customer orientation	0.21 *	0.34 ***	0.42 ***	1			
Mission	-0.11	-0.01	-0.08	0.16	1		
Positioning	-0.10	-0.32 ***	0.13	-0.05	-0.01	1	
Pattern	0.08	-0.16	-0.14	-0.04	0.11	0.00	1
Company size	-0.13	-0.04	0.19 *	0.13	0.08	0.25 **	0.01

Note: Significant at: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

The following multiple regression was run for each of the four SMA categories:

$$Y = a + b_1\text{STPAT} + b_2\text{STMIS} + b_3\text{STPOS} + b_4\text{COMS}$$

where:

Y = SMA category (costing, customer, competitor and performance orientation).

STPAT = strategic pattern.

STMIS = strategic mission.

STPOS = strategic positioning.

COMS = company size.

a, b_1, b_2, b_3, b_4 = regression coefficients.

The results are presented in Table VIII. Given the congruence-type model, attention is focused on the regression coefficients (Gerdin and Greve, 2008, p. 1002).

H1a posited a positive relationship between SMA categories related to customer, competitor and performance and pattern variable whereas *H1b* stated a negative relationship between SMA categories related to costing and pattern. Table VI provides support for *H1b*, as a significant ($p < 0.1$) and negative b_1 regressor for SMA-costing was found. Given the other not significant results related to pattern variable, no support could be providing for *H1a*.

H2 posited a positive relationship between all SMA categories (costing, customer, competitor and performance) and mission variable. Partial support is provided here, as a significant ($p < 0.1$) and positive b_2 regressor for SMA-customer was found. This hypothesis is then confirmed only for one SMA orientation: customer.

H3a posited a positive relationship between SMA categories related to customer, competitor and performance and positioning variable whereas *H3b* stated a negative relationship between SMA categories related to costing and positioning. Strong support for *H3b* is provided, as a significant ($p < 0.01$) and negative b_3 regressor for SMA-costing was found. *H3a* cannot be confirmed because of the not significant results of the other b_3 regressors.

6. Discussion and conclusions

The survey, which is the basis of our study, has shown a significant use of SMA techniques by Italian companies, which is in line with results registered in previous surveys (Guilding *et al.*, 2000; Cadez and Guilding, 2007) in other countries. Four means of the 11 SMA technique usage scores present a value greater than 3 (in a 1-5 Likert measurement scale). CA, competitive position monitoring and competitor performance appraisal based on published financial statement and quality costing have been shown to be the widely used techniques. On the contrary, integrated performance measurement systems and life cycle costing register limited use. The results show a common noticeable orientation towards competitor information, as was found in other countries such as New Zealand, the UK, the USA (Guilding *et al.*, 2000), Australia and Slovenia (Cadez and Guilding, 2007). Moreover, CA appears to be used more frequently by Italian companies than those in Slovenia (Cadez and Guilding, 2007) but is in line with Australians (Guilding and McManus, 2002).

Table VIII.
SMA usage regression
analysis

	Costing orientation		Customer orientation		Competitor orientation		Performance orientation	
	Unstandardized regression coefficient	t-statistic	Unstandardized regression coefficient	t-statistic	Unstandardized regression coefficient	t-statistic	Unstandardized regression coefficient	t-statistic
Constant (<i>a</i>)	3.55***	2.42	1.97	0.93	4.92***	2.85	0.49	0.27
Strategic pattern (<i>b</i> ₁)	-0.13*	-1.62	-0.05	-0.43	0.10	1.05	-0.07	-0.73
Strategic mission (<i>b</i> ₂)	0.01	0.11	0.21*	1.68	-0.07	-0.64	-0.06	-0.51
Strategic positioning (<i>b</i> ₃)	-0.23***	-2.81	-0.09	-0.83	-0.06	-0.66	0.06	0.60
Company size (<i>b</i> ₄)	0.02	0.27	0.06	0.53	-0.09	-0.93	0.12	1.20
<i>R</i> ²	0.16		0.05		0.05		0.05	
<i>F</i>	2.58		0.98		0.79		0.76	
<i>p</i> (sig.)	0.05		0.43		0.53		0.56	

Note: Significant at: * $p < 0.10$, ** $p < 0.05$, and *** $p < 0.01$

As can be seen from the SMA literature (Guilding *et al.*, 2000; Cravens and Guilding, 2001; Roslender and Hart, 2003), SMA is commonly recognized to be opposed to traditional management accounting, and in this sense, to be outward-looking and future-oriented. Four different orientations have been examined in order to cluster SMA techniques: costing, competitor, customer and performance. Hypotheses have been formulated on the relationship between each orientation and the strategy followed. The three strategy typologies (pattern, mission and positioning) mentioned as the main archetypes in the literature (Langfield-Smith, 1997, 2007) were selected as contingent independent variables, potentially explaining SMA usage (plus company size as a control variable). A summary of the results of hypotheses testing is presented in Table IX and discussed in the following.

The evidence provided here regarding pattern variable suggests that defenders make greater use of SMA-costing techniques, because they are interested in efficiency and cost control. This finding confirms and extends prior research (Abernethy and Guthrie, 1994; Simons, 1987; Guilding, 1999). While Guilding (1999) found that prospectors make greater use of competitor-focus accounting practices, they would be expected to make greater use of SMA techniques as well. This hypothesis is not confirmed by our findings, as no relationship between strategic pattern and such SMA orientations was found.

In terms of mission variable, extension of previous work is provided, as the results show that build companies are more willing than harvest companies to use SMA customer-oriented techniques. The desire to attain greater market share, which is a characteristic of build companies, is translated into a need for external information on customers, and, for this reason, it is coherent with the adoption of SMA-customer techniques. Govindarajan and Gupta (1985) found greater reliance on long-run performance to be more appropriate in build firms and Guilding (1999) extended these results, showing that build firms have a greater propensity to use strategic pricing and strategic costing. No results are provided here in that direction.

Despite the fact that Porter's (1980, 1985) typologies have been widely debated and criticized on their validity (Chenhall, 2003), they nevertheless represent a significant strategy classification in this study. It has been posited that differentiators would use extensively SMA techniques addressing customer, competitor and performance information, whereas cost leaders would use those SMA techniques addressing cost information. The former hypothesis was supported here by the result of negative and statistically significant relationship between positioning variable and SMA-costing techniques; it confirms the consistence of Porter's competitive strategy classification in

Relation/s	Presumed sign	Results
<i>H1a</i> . SMA (customer, competitor and performance) and pattern	+	Not supported
<i>H1b</i> . SMA (costing) and pattern	-	Supported
<i>H2</i> . SMA (customer, costing, competitor and performance) and mission	+	Supported for SMA-customer
<i>H3a</i> . SMA (customer, competitor and performance) and positioning	+	Not supported
<i>H3b</i> . SMA (costing) and positioning	-	Supported

Table IX.
Summary of hypotheses
testing

empirical research on SMA, providing an extension of Shank and Govindarajan's (1992a) study.

The findings of Abdel-Kader and Luther (2008) appear in contrast with these. They hypothesized that companies following a differentiation strategy need more sophisticated management accounting practices than those following a cost leadership strategy. They did not find support to the latter whereas we find significant results for the association between cost leadership strategy followers and the use of SMA-costing techniques (which belong to the class of tools with a certain level of MA sophistication). The issue here regards the way management accounting sophistication is measured by Abdel-Kader and Luther (2008). They defined four levels of sophistication: cost determination and financial control, information for management planning and control, reduction of waste in business resources, creation of value through effective resource use. The difference from our study consists in the fact that these four levels collect MA techniques presenting different orientations whereas we clearly distinguish four orientations (costing, customer, competitor and performance), which could be mixed if classified on the base of MA sophistication.

In respect to the relation between business strategy and SMA techniques, we found a relevant outcome: the link between both defender- and cost leadership-type strategy with SMA-costing techniques. From this point of view, there is a level of consistency between the organizational and control characteristics of a defender and cost leader. In this vein, this study provides partial support to the suggestion of Langfield-Smith (1997) on the fit between defender/cost leader/harvest, but on the other hand no support is provided in terms of fit between prospector, differentiator and build mission follower. The overall examination of business strategy as a variable affecting SMA usage and implementation does not provide clear insights on the issue, with the exception of the aforementioned considerations. This "loose coupling" between SMA technique typology and business strategy suggests that the same SMA technique is able to support different strategic approaches. In this respect, also research carried out on ABC (Gosselin, 1997; Bhimani *et al.*, 2005) found opposite results with regard to the existence of a linkage between ABC and strategy and highlighted the possibility to find ABC used in different strategy types (Gosselin, 1997). If so, different strategies do not clearly imply different orientations in the adoption of SMA tools, and, therefore, more significant determinants must be ascertained by exploring further variables. In other words, the terms "strategic" referred to these techniques can be interpreted solely as the ability to provide information to support strategic decision-making process, without a clear preference of certain techniques according to the different strategies followed. These results could also reflect the ambiguity of the concept of strategy and the possibility that companies will follow aspects of different strategic typologies to varying degrees (Langfield-Smith, 2007). This circumstance would support the idea of great flexibility in the usage of SMA information, as a consequence of the great variability of external environment and company strategy.

A number of limitations characterize the research.

The first limit regards the strategy concept and its operationalization. As previously explained, strategy represents a questionable matter when considered as a contingent variable to be operationalized in empirical studies (Chapman, 1997). Langfield-Smith (1997, 2007) underscored certain weaknesses in operationalizing strategy such as its multidimensional nature, the distinction between intended and realized strategy and

its developmental essence. We are aware of the fact that these will continue to be the main limitations of our research, but we feel that the attempt to grasp strategy multidimensionality through the simultaneous examination of three strategic variables (pattern, mission and position) is, nevertheless noteworthy. It is well known that research takes a picture of a firm's strategy putting each firm into boxes labelled as "prospector", "build" and "differentiator" rather than considering the dynamic development of strategy, but this is a way to solve the trade-off in the research process among generalizability, accuracy, and simplicity emphasized by Weick (1979). Nyamori *et al.* (2001) have also addressed the issues in conceptualizing strategy, strategic change and their implication for management accounting research. In this respect, our paper is a contribution to understanding the behaviour of different organizations that are pursuing different strategies of selection in the portfolio of SMA techniques, but it does not explain how these might change with a change in strategy.

A second matter to be solved pertains to the identification of SMA techniques. Which management accounting techniques could be defined as "strategic"? Adopting a literature approach to define SMA techniques (Cravens and Guilding, 2001) does not solve the problem. Ambiguous interpretation arises on the significance of SMA, and this consequently reflects on the definition of SMA techniques; the topic of SMA should be interpreted to be in continuous evolution. Another issue emerges that is strictly related to this: how is the investigated technique used? This study considers if and to what extent (frequency) the technique is used, but not how. For instance, ABC could be used purely as an accurate cost accounting technique or in a strategic way as Palmer (1992) postulates. This regards a clear choice of the survey research: a further field research would be more suitable to investigate "how" companies adopt SMA techniques.

If, as the results suggest (with the exception of a few cases), the same SMA technique can support different strategic approaches, further investigation of how this is achieved in practice may need a different research approach. The use of a series of case studies to compare companies that are following different strategies while employing the same or similar set of SMA techniques will provide new insights into the potential use of these devices. A qualitative longitudinal approach over an extended period of time may also be necessary to understand the transition from one strategy to another and the change in the adoption and use of SMA techniques (Nyamori *et al.*, 2001).

Despite the critics and doubts on the essence of SMA (Tomkins and Carr, 1996; Lord, 1996) the open research issues arising from this study and other related research (Guilding *et al.*, 2000; Cravens and Guilding, 2001; Cadez and Guilding, 2007, 2008) confirm that the spread of SMA techniques cannot be considered a marginal topic and that SMA nevertheless represents a significant research area to be explored within management accounting.

Notes

1. The authors describe another type of organization: reactor. It is not considered because it does not seem to be a "successful" type in the sense that it does not present a stable strategy-structure relationship.
2. Langfield-Smith (1997, pp. 211-12) recalls the three strategy variables (dimensions) of strategic positioning from Porter's framework (cost leadership and differentiation), strategic mission from Gupta and Govindarajan' framework (build, hold and harvest) and strategic typology from Miles and Snow' framework (prospector, analyzer and defender). In this

study, the latter variable is classified as “strategic pattern” as used by Kald *et al.* (2000) instead of “strategic typology” as done by Langfield-Smith (1997). There are two reasons for such a choice. First of all, because in the literature, there is not an agreed word recalling Miles and Snow’ strategy classification; second, because in the paper, we prefer to employ the term typology as a synonymous of configuration or archetype.

3. Business International is an Italian consulting and training company associated with *The Economist* group. Its database comprises about 30,000 Italian firms (it can be consulted at: www.whoswho.it).
4. Respondents could mark “I don’t know/ I don’t answer” if the technique was unknown to their organization or if they did not want to answer.
5. There are two differences with respect to the original measurement of Shortell and Zajack (1990). First, they used this measure only for prospector/defender typologies whereas we employed it for build/harvest and cost leader/differentiator typologies as well. Second, they used a measure based on a seven-point scale whereas we employed a five-point scale.
6. We recoded our database in seven-point Likert scale in order to compare the results with previous studies using an homogeneous scale. This is not considered a threat to the validity of the comparison (Dawes, 2002).
7. The absence of statistically significant correlation between independent variables (except the one for company size and positioning) suggests that multicollinearity is unlikely to be an issue.

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Appendix 1. Definitions of the management accounting techniques provided in the questionnaire

Activity-based costing/management

ABC is a two-stage procedure used to assign overhead costs to products and services produced. In the first stage, significant activities are identified, and overhead costs are assigned to activity cost pools in accordance with the way the resources are consumed by the activities. In the second stage, the overhead costs are allocated from each activity cost pool to each product line in proportion to the amount of the cost driver consumed by the product line.

Benchmarking

The comparison of company performance to that of an ideal standard.

Competitive position monitoring

The analysis of competitor positions within the industry by assessing and monitoring trends in competitor sales, market share, volume, unit costs and return on sales. This information can provide a basis for the assessment of a competitor's market strategy.

Competitor cost assessment

The provision of regularly scheduled update estimate of a competitor unit cost. Such information could derive from different sources (direct observation, common suppliers or customers or competitors ex-employees).

Competitor performance appraisal based on published financial statements

The numerical analysis of a competitor's published financial statements (balance sheets) as a part of an assessment of a competitor's key sources of competitive advantage.

Customer accounting

Analysis directed to appraise profit, sales or costs deriving from customers or customer segments.

Integrated performance measurement systems (BSC or non-financial indicators)

A measurement system, which focuses typically on acquiring performance knowledge based on customer requirements and frequently encompasses non-financial measures. These measures imply the monitoring of factors for the attainment of customer satisfaction and competitive advantage.

Life cycle costing

The appraisal of costs along all the stages of a product or service life. In general, these stages may include design, introduction, growth, decline and eventually abandonment.

Quality costing

Identification and control of the costs associated with the creation, identification, repair and prevention of defects. The target is to direct management attention to prioritise quality (in a broader sense as well as safety and environment) problems.

Target costing

A method used during product and process design that involves estimating a cost calculated by subtracting a desired profit margin from an estimated (or market based) price to arrive at a desired production, engineering or marketing cost. The product is then designed to meet that cost.

Value chain costing

An activity-based approach where costs are allocated to activities required to design, procure, produce, market, distribute and service a product/service along the entire industry value chain. It embraces the consideration of the linkages with suppliers and customers to attain higher efficiency.

Appendix 2. Definition used in the questionnaire to operationalize strategy concept

Strategic pattern

- *Defender*. The business is characterized by a constant competition, relatively stable set of product/service, efficiency and specialization tendency and a centralized organization.
- *Prospector*. The business is characterized by a dynamic competition, relatively frequent changes in its set of product/service, continuous efforts to pioneer in new market areas and a flexible structure.

Strategic mission

- *Build*. Increase sales and market share, be willing to accept low returns on investment in the short-medium term.
- *Harvest*. Maximise profitability in the short-medium term, be willing to sacrifice market share.

Strategic positioning

- *Cost leadership*. The primary focus is to achieve low costs relative to competitors.
- *Differentiation*. The primary focus is to create something that is perceived as unique by the customers through superior product features, customer service, brand image and/or performance.

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