Is the adoption of Strategic Management Accounting techniques really "strategy-driven"? Evidence from a survey

Cinquini, Lino and Tenucci, Andrea

Scuola Superiore Sant'Anna, Scuola Superiore Sant'Anna

June 2007

MAR 2007 - COST AND PERFORMANCE IN SERVICES AND OPERATIONS
TRENTO (ITALY) JUNE, 18-20 2007

Is the adoption of Strategic Management Accounting techniques really "strategy-driven"? Evidence from a survey

Lino Cinquini & Andrea Tenucci

Scuola Superiore Sant'Anna
Piazza Martiri della Libertà, 33
56127 Pisa - Italy
Ph.: +39 050 883320
Fax: +39 050 883222
l.cinquini@sssup.it
a.tenucci@sssup.it

Is the adoption of Strategic Management Accounting techniques really "strategy-driven"? Evidence from a survey

***Abstract*:**

Several different approaches to Strategic Management Accounting (SMA) can be found in the literature of management accounting since Simmonds (1981) coined the term. However, there is a little survey research about SMA practice, with the exception of the studies of Guilding *et al.* (2000) and Cravens & Guilding (2001).

The paper aims to enrich the fragmented knowledge on the topic by a contingency research study based on an internet questionnaire survey on Italian companies. The study focuses on the characteristics at the heart of SMA techniques that may help in classifying and grouping them and on the investigation of variables that may influence/explain the use of SMA techniques within companies. Company size, industry and strategy (in the sub-dimensions of pattern, mission and positioning) are the variables considered in the exploration.

The findings reveal that SMA techniques appear to be extensively used. Attribute costing, Customer accounting, Strategic Pricing and Competitive Position Monitoring represent the most widely used SMA techniques. Four features of the pattern of Strategic Management Accounting practice emerge clearly from the factor analysis: competitor, long run, process and customer orientation. In the correlation analysis only strategic positioning is weakly found to play a contingent role in SMA technique usage, while strategic pattern, strategic mission, company size and industry variables do not provide any results. Such a finding reveal that, surprisingly, SMA techniques adoption doesn't seem to be "strategy-driven".

Keywords:

Strategic Management Accounting; Strategy

Acknowledgments: The authors are grateful to Falconer Mitchell, Hanne Nørreklit and Frank Selto for their valuable comments and suggestions. Thank are also due to the participants of the "5th Conference on New Directions in Management Accounting: Innovations in Practice and Research" held in Brussels on December 14-16, 2006 who commented the presentation of this paper.

INTRODUCTION

Since the 80s a new term has been coined in management accounting literature: "Strategic Management Accounting" (SMA) (Simmonds, 1981). Since then an ongo ing debate about what SMA comprises has been originated. It is well accepted that SMA is identified as a generic approach to accounting for strategic positioning (Roslender & Hart, 2003). This wide definition leaves unsolved the problem of defining what is intended with the term "SMA techniques".

In accounting literature the "external" orientation of Strategic Management Accounting is well established. However it can be interpreted in different ways. Firstly it can be referred to as "competitors". Simmonds (1981) developed a conceptual framework underlying the importance of competitor information (related to cost, prices, market share and so on) in developing and monitoring business strategy. Later, various authors recognized the value that competitor infor mation plays in achieving a competitive advantage (Jones, 1988; Bromwich, 1990; Ward, 1992; Moon & Bates, 1993). Secondly, the term "external" can be referred to as "suppliers and customers". In a value chain perspective Shank & Govindarajan (1993b) widely demonstrated the usefulness of external information that enable the company to fruitful exploit linkages with suppliers as well as customers. Ultimately "external" can be referred to the "market". It means focusing on the product offer to satisfy customer s needs but taking care in the meantime of the product attribute costs (Bromwich, 1990). Moreover it is possible an interpretation as satisfaction of customers needs by achieving a desired target profit/cost (Monden & Hamada, 1991; Morgan, 1993; Ewert & Er nst, 1999) or performance (Narver & Slater, 1990). In general, it has been argued that the "strategic" characteristic embraces those practices highlighting an external or future focus (Cravens & Guilding, 2001; Guilding *et al.*, 2000; Roslender & Hart, 2003).

Recently the relationship between strategy and management control systems (MCS) has also been an issue widely explored. The interest in the topic has been growing since the 1980s, when strategy began to be considered as a contingent variable; surveys and case studies started to investigate the connection between particular elements of the MCS and the specific strategy adopted by the firms (Miller & Friesen, 1982; Govindarajan & Gupta, 1985; Simons, 1987 and 1990; Govindarajan, 1988; Shank & Govindarajan, 1992a; Bruggeman & Van der Stede, 1993; Chenhall & Langfield-Smith, 1998). All of these studies adopted a contingency theory approach to the research.

The proclivity in these types of research is to analyse strategy from the business level; the most widely discussed problem regards the generic constructs of strategy (Miller & Dess, 1993; Kotha & Vadlamani, 1995; Chenhall & Langfield -Smith, 1998; Bouwens & Abernethy, 2000; Chenhall, 2005a). In general, there are four different classifications of business strategy accepted and used in most of this research. We refer to Miles & Snow (1978), Porter (1980, 1985), Miller & Friesen (1982) and Gupta & Govindarajan (1984).

The schemes of Miles & Snow (1978), Porter (1980, 1985) and Gupta & Govindarajan (1984) have attracted most attention. Each of the classification turns out to be very useful in conducting empirical research regarding the relationship between strategy and management accounting/control systems, because it is possible to cluster firms with (apparently) homogeneous features. However these research studies have not generated comparable findings because of the different paths adopted in operationalizing business strategy. The main reason for this, according to Langfield - Smith (1997: p. 212), lies in the different scope and focus used by these typologies. In

seeking to integrate the dimensions of strategy Shank & Govindarajan (1992a) found some consistent fit between Porter's classification and that of Gupta & Govindarajan. They observed that companies pursuing a differentiation and a build strategy faced the same environmental uncertainty; similar considerations could be developed for cost leadership and hold mission follower. A few years later Langfield-Smith (1997), and then Kald *et al.* (2000), sought to integrate all the three mentioned classifications; they proposed a series of viable combinations among them that needed empirical research to be validated.

Some contingent studies have tested the relationship between strategy, MCS and performance (among the others see Simons, 1987; Govindarajan & Fisher, 1990; Chenhall & Langfield-Smith, 1998); but many authors call for research into the role strategy might play also in accounting system design (Dent, 1990; Chapman, 1997; Langfield-Smith, 1997; Chenhall, 2005b; Langfield-Smith, 2005).

In recent years such approaches have influenced research conducted around the factors affecting SMA techniques implementation (Cravens & Guilding, 2001; Guilding *et al.*, 2000; Cadez, 2006), confirming the increasing interest on the assessment of the extension of their use within companies and the factors affecting it.

This research addresses this topic, aiming at extending previous results around the fundamental question of the "drivers of choice" of SMA techniques into companies. The issue is relevant, due to the wide range of approaches available to SMA and the consequent need of orientation by managers in choices related to the adoption of a technique in a specific company setting.

Therefore the paper, based on a survey of a sample of Italian large-medium size manufacturing companies, aims at contributing to the research debate around the features of Strategic Management Accounting to be found in the real world and the factors influencing the implementation and use of SMA techniques. The results concerns the focussing on characteristics at the heart of SMA techniques - stemming from their contents – that may help in classifying and grouping them and the investigation of variables that may influence/explain the use of SMA techniques within companies. The variables include company size, sector and strategy.

This last variable, widely adopted in MCS studies as mentioned, is new with respect of contingent studies about SMA and its consideration. It may help in exploring the selectivity in techniques adoption by different firms and its consideration gives an answer to a fundamental research question: "Does SMA techniques adoption differ with regard to different strategies adopted?".

Summing up, two main research questions are posited in the paper: what are the distinctive features/orientation of SMA techniques that can help in grouping them coherently? To what extent the adoption can be explained by variables such as strategy, company size and industry? In particular, strategy has been studied as a variable affecting the design of Management Accounting or Management Control systems; for this reason we could reasonably expect that it will be even more critical in the design of Strategic Management Accounting systems.

The paper follows this structure: in the first part a brief review of the ways used to operationalize strategy is conducted and a description of the adopted research model is provided. It also contains an explanation of the strategic management accounting techniques included in the research. The second section is 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.

1. THE THEORETICAL APPROACH: CONTINGENCY THEORY AND SMA

1.1. Operationalization of Business strategy in contingency research

Empirical contingency research has widely adopted different "typologies" as classifications of strategy. In particular, as mentioned, the schemes of Miles & Snow (1978), Porter (1980, 1985) and Gupta & Govindarajan (1984) have mainly attracted attention when referring to business-unit strategy. In their original version the three classifications perform unique aspects and represent different business strategy dimensions. Also Langfield-Smith (1997: p.212) underlines that each strategy classification holds different characteristics related to scope and focus (in particular defender/prospector distinction presents a broader scope than the others). Each classification will now be briefly presented and discussed with respect to the concerning strategic element.

Miles & Snow (1978) consider that management has to face three types of problem: the entrepreneurial (the strategic management of product and markets), the technological (the production and distribution of products) and the administrative one (the organization to support the entrepreneurial and technical decisions). When these problems are solved in a successful manner, a stable strategic pattern is identified. Within this path three typologies according to their rate of change in product or market are shown[1]. *Prospectors* mainly compete through product innovation, offer a wide product range and are considered pioneer in product and market area. Marketing and Research & Development 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. *Analysers* combine features of the previous typologies because they compete in a two type of 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 & Govindarajan (1984) adopt a life-cycle approach using the concept of strategic mission (or portfolio strategy). According to life-cycle stage in which the market and product match each other, the company will prefer one mission or another one. Gupta & Govindarajan describe four strategic missions depending on the balance between the objectives of market-share growth and short-run profit maximization. *Build* strategy aims to increase market share and competitive position, even at the expense of short term earnings and cash flow. *Harvest* strategy aims at maximising short term earnings and cash flow rather than improving market share. *Hold* strategy finds itself in the middle between the previous configurations and *divest* strategy implies the choice to end the activity.

Ultimately, Porter (1980, 1985) distinguishes three generic strategies that allow the company to achieve a sustainable competitive advantage. *Cost leadership* implies to obtain the lowest cost relative to the competitors; it is possible by exploiting the economies of scale and scope and reaching a superior technology that grant a low cost.

[1] The authors describe another type of organization: *reactor*. It is not considered because it seems not to be a "successful" type in the sense that it does not present a stable strategy-structure relationship.

The *differentiation* strategy focuses on providing products that are perceived to be unique by the customers. This is possible offering superior quality, customer service, brand image and so on. The sources of this advantage could be: brand loyalty, product design, after-sale services and retail facilities. The *focus* strategy implies to compete in a specific market segment through either cost leadership or differentiation.

Summing-up, each typology presents its own characteristics. Prospector/Defender regards the rate of change in product and markets. Build/Harvest concerns the strategic mission. Differentiation/Cost leadership relates to the way the company decide to compete in the market.

Various criticisms have been made about the way in which a researcher decide to operationalize strategy but, as noted by Weick (1979), the research process involves inevitable trade-offs among generalizability, accuracy, and simplicity. It only depends on the aims of the research. In their simplicity, these typologies could be very useful because each of them underlines a particular aspect of the business-unit strategy, however they will become more useful if a clear connection among them will be traced. In general, the aim of research using typologies concerns the generalizability of results more than the accuracy of the classification. Several studies criticise the validity of the typologies in contemporary contexts because they had origins in the 80s (Shortell & Zajack, 1990; Kotha & Vadlamani, 1995). They mainly contest that strategy became a complex and variable factor in the last years. Upon this point, we suggest that by combining the presented typologies it will be possible to recast the multidimensional nature of strategy: a way to study the complexity of strategy could be to combine (and then integrate) the three mentioned typologies, instead of creating new ones. In this way the limits of each classification could be mitigated in a renewed framework (Langfield-Smith, 1997). This does not mean that all the weaknesses in strategy operationalization will be solved, but it could contribute to reduce them. The multidimensional nature of strategy, the difference between intended and realized strategy, the difficulty of communicating the significance of typologies to managers and the recognition of strategy as an ongoing development process, all represent weak elements in operationalizing strategy underlined by Langfield-Smith (1997: p.127).

1.2. SMA and Contingency Theory in the Research Model performed

Normally, the development and use of SMA techniques is linked to the issue of the need for external information to face the uncertainties of environment and to support strategic decisions. The growth of research in SMA is rooted in the basic consideration of the increasing relevance of information outside the boundaries of the firm: Simmonds (1981) and Bromwich (1990) highlighted the external focus of SMA and further research has been consistent with this premise.

Only in recent years, however, research in this field has highlighted the contingent factors underpinning the implementation and use of SMA: assessing contingent variables linked to the adoptions of competitor-focused accounting (CFA) techniques Guilding (1999) found a significant relationships between CFA and competitive strategy, strategic mission and company size; competitive strategy was derived by Miles and Snow's (1978) prospector/defender typologies, while strategic mission was measured using Govindarajan & Gupta's approach (1985); in exploring the relationship between SMA usage and competitive strategy Cravens & 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,

market coverage) and significant relationships were found with R&D and breath of market coverage; Guilding & McManus (2002) explored the use of Customer Accounting (CA) techniques and their findings suggested a greater incidence of CA practices and a positive relation between competition intensity (measured by scale of perceived intensity related to selling and distribution, quality and variety of products, price, market share and customer service) and market orientation.

In these research studies, only some of the aforementioned dimensions of strategy (pattern, mission and positioning) – or completely different ones as in Cravens & Guilding (2001) - have been considered and operationalized in the contingency model adopted; none of them assumed the framework of Langfield-Smith. In this research the variables concerning business strategy have been operationalized in terms of pattern, mission and positioning in order to provide a wider framework of this variable that is supposed to be the main driver of SMA techniques adoption (strategy). In addition, company size and industry have been considered in the model as variables affecting the use of SMA techniques.

The definition of SMA techniques derives from the literature, in particular they represent an elaboration of Cravens & Guilding's study (2001); according to the external orientation, fourteen SMA techniques have been identified[2]:

Activity Based Costing/Management (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 *et al.*, 1992). ABC strategic focus consists in the management of the activities through which it is possible to define actions aiming at achieving a competitive advantage (Palmer, 1992; Shank and Govindarajan, 1989).

Attribute Costing. It considers products as a bundle of different features; in this vein, Bromwich (1990) suggests product attributes can be viewed as cost objects. The attributes differentiate the products, and from the contact between product attributes and consumers' taste the market share is determined. In this sense it can be interpreted the external (market) orientation of the technique.

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 *et al.*, 1992; McNair & Leibfried, 1992) but, in general, they underline the external strategic orientation toward competitors.

Competitive Position Monitoring. The technique is constituted by the provision of competitor information. These include sales, market share, volume and unit costs (Simmonds, 1981). Basing on the information provided, the company is able to assess its own position relative to main competitors and, consequently, control or formulate its strategy.

Competitor Cost Assessment. In contrast to the previous technique, 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 like physical observation, common suppliers or customers and ex-employees of competitors.

[2] Compared to Cravens & Guilding's (2001) study it was decided not to consider Brand valuation budgeting and monitoring, but to include Customer accounting.

Competitor performance appraisal based on public financial statements. A relevant source of competitors evaluation is constituted by public financial statements. Moon & 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 strengthness in today's evolution of IASB that could permit a simpler comparison between companies of different countries.

Customer Accounting. The technique considers customers or group of customers as unit of accounting analysis (Bellis-Jones, 1989; Guilding & McManus, 2002). Customer accounting includes all the practices directed to appraise profit, sales or costs deriving from customers or customer segments. Because it is widely related with "relational marketing", this accounting approach is classified as a SMA technique.

Integrated Performance Measurement. The consideration of both financial and non-financial measures defines an Integrated performance measurement system (Cross & Lynch, 1989; Nanni *et al.*, 2002). Balanced Scorecard belongs to this class, and its role in strategic management cycle is apparent through the four perspectives (Kaplan & Norton, 1996a, 1996b, 2000; Malina & Selto, 2001).

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 & Brimson, 1988; Shields & Young, 1991;Wilson, 1991). It's 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 & 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, internal and external failures (Heagy, 1991). Modern competition requires also the monitoring of safety and environmental costs. In a strategic perspective, the technique must support the pursuit of quality (Simpson & Muthler, 1987; Carr & Tyson, 1992).

Strategic Costing. According to Shank & Govindarajan (1989, 1993a, 1993b) costing systems are progressively getting into the strategic management process. It means that costing systems must explicitly consider strategy and the pursuit of long-term competitive advantage. The authors underline the marketing and competitive concepts to which the technique refers (product positioning and market penetration).

Strategic Pricing. Simmonds (1982) describes this pricing technique. Its focus is on the use of competitor information, like competitors' reactions to price changes, price elasticity, economies of scale and experience, in the pricing process.

Target Costing. According to the technique, a 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 & Hamada, 1991; Morgan, 1993). External market factors intervene frequently in this SMA technique.

Value Chain Costing. Developing the value chain model (Porter, 1985), Shank & Govindarajan (1992b) 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 and both suppliers and customers.

The scheme of the research model is depicted in Figure 1.

Figure 1 – *Research Model*

CONTINGENT VARIABLES	***SMA TECHNIQUES ADOPTION***
▪ Strategic Pattern ▪ Strategic Mission ▪ Strategic Positioning ▪ Company size ▪ Industry	▪ ABC/M ▪ Attribute Costing ▪ Benchmarking ▪ Competitive Position Monitoring ▪ Competitor Cost Assessment ▪ Competitor Performance Appraisal on public financial statements ▪ Customer Accounting ▪ Integrated Performance Management Systems ▪ Life Cycle Costing ▪ Quality Costing ▪ Strategic Costing ▪ Strategic Pricing ▪ Target Costing ▪ Value Chain Costing

A first general hypothesis pertain to the whole SMA techniques adoption. It is expected that depending on the strategic orientation and the specific company characteristics, specific SMA techniques will be selected. This means that c ompanies do not indifferently adopt SMA techniques.

The investigation around the variables influencing SMA se lection and adoption has been based on some hypotheses. These are treated in relation to each contingent variable:

– *Strategic Pattern* (Prospector vs. Defender – Miles & Snow, 1978):

Guilding (1999) underlines the more external (strategic) orientation of "prospector" compared with "defender" in studying Competitor -focus Accounting techniques. In this way we could expect that (**Hp. 1**): *SMA techniques usage rate is higher in "prospectors" than in "analysers" or "defenders".*

- *Strategic Mission* (Build vs. Harvest – Gupta & Govindarajan, 1984):

Guilding (1999) found a weak, although positive and statistically significant relationship between "build" and competitor-focus accounting usage rate. For this reason the following hypothesis is formulated (**Hp. 2**): *SMA techniques usage rate is higher in "build" than in "hold" or "harvest".*

- *Strategic Positioning* (Differentiation vs. Cost Leadership – Porter, 1980,1985):

Shank & Govindarajan (1992a) argued that "cost leadership" companies use mainly traditional costing systems anyway in the meantime competitors (cost) analysis would be useful. In the opposite way, the authors underline that "differentiation" companies would pay attention to marketing and differentiation costs. For this reason we could expect that (**Hp. 3**): *SMA techniques usage rate is, in general, higher in "differentiators" than in "cost leaders". But in the same time, SMA techniques addressing cost information are used more by "cost leaders" than "differentiators".*

- *Company size*:

Previous studies (Bruns & Waterhouse, 1975; Merchant, 1981; Guilding, 1999; Guilding & McManus, 2002) demonstrated that larger companies are more willing to use accounting sophistication. Considering SMA as advanced accounting techniques it is expected to find a positive relation between company size and SMA usage rate. So the following hypothesis is postulated (**Hp. 4**): *SMA techniques usage rate is higher in larger companies.*

- *Industry*:

Many contingent studies identified technology and competition (Khandwalla, 1972) like factors influencing management accounting/control design and use. Therefore, assuming that industry is generally considered as deriving from the competition and the technology that characterize similar companies, the following hypothesis is postulated (**Hp. 5**): *SMA techniques usage rate differs among different industries.*

2. RESEARCH METHOD

2.1. Data collection

Data were collected using an internet questionnaire survey. The initial sample comprised 328 companies obtained from "Business International" database [3] and it comprises the largest Italian manufacturing firms (measured by sales higher than 25 millions euro) from different industrial sectors. A prior phone contact directed to "chief accountant", "chief financial officer" or "controller" was made to present the research and to ensure the participation related to a single business unit (if the company had more than one). Then an e-mail was sent containing the cover letter, the access codes (username and password) and the web link to the questionnaire only to those who agreed to participate. In according to Kittleson's (1997) follow-up advice on internet

[3] *Business International* is an Italian consulting and training company linked to "The Economist" group. Its database comprises about 30.000 Italian firms (it can be consulted at www.whoswho.it).

based surveys, after one week, a first reminder was e-mailed; a second one followed one week later. Then fifteen days after the second reminder the web site of the questionnaire was disabled.

From the first phone contact 113 companies declared they would not participate, so they were classified as "non participants" and removed from the sample. Five of them were included in the category because they were business units of a corporate which had already been included; other four companies did not participate because they were ceasing activity. 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 questionnaire" (19) and "we outsource the accounting activities" (17). The final sample size was made up of 215 companies.

Ninety-three responses were received (43.3 %). Only one was unable to be used. It means that 92 responses were received with a usable response rate of 42.8 %. Table 1 offers a summary of the research process.

Table 1 – *Survey sample summary*

Initial sample size	328
Non participants	113
Final sample size	**215**
o *Initial respondents*	*46*
o *First reminder respondents*	*28*
o *Second reminder respondents*	*19*
Total respondents (usable)	**93 (92)**
Response rate (%)	**43.3**
Usable response rate (%)	**42.8**

Three investigations to estimate possible non-response bias were undertaken. The first one concerned a new contact by e-mail, when the research process was finished and the web-site disabled, for 10 non-respondents in order to understand the reason of their non response. They mainly justify 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; this was possible because the used database contained that information. These investigations showed that the "non respondents" category had no substantial differences or features respect to "respondents" category. The third analysis was conducted to investigate for differences in responses provided by "initial", "first reminder" and "second reminder" respondents. At first the comparison of the usage means of each SMA technique among 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 responses. This means that non-response bias is not a significant threat to the validity of the research.

2.2. Variable Measurement

2.2.1. SMA techniques usage rate measurement

The following main question was included in the questionnaire: "To what extent does your company (or business unit) use the following accounting techniques?". Then the list of the 14 management accounting techniques followed. Next to each one, a Likert scale ranging from 1 ("never") to 5 ("always") was provided. Respondents could eventually 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. Next to each accounting technique a link to the glossary permitted a clear understanding of their significance. Appendix A provides the definitions of the accounting techniques included as glossary in the questionnaire. The same method was employed by other studies (Guilding, 1999; Guilding, Cravens and Tayles, 2000; Cravens and Guilding, 2001) with the exception of a different length of the Likert scale (from 1 - "never"- to 7 - "always").

2.2.2. Business Strategy (Pattern, Mission, Positioning)

Business strategy has been operationalized using the three dimensions of strategic pattern, strategic mission and strategic position. The measurement method of Shortell and Zajac (1990) was employed. For each dimension a five-point scale was employed linking at the two extremes of the scale a description of the opposite profiles (build/harvest, prospector/defender, differentiator/cost leader) [4]. Appendix B provides the descriptions of the typologies included in the body of the questionnaire. None of the term defender, prospector, analyser, cost leader, differentiator, build, hold or harvest were used in the questionnaire.

Table 2 provides a summary of respondents strategic typologies composition.

Table 2 – *Descriptive statistics of Business Strategy*

	n	Mean	Std. Deviation	Actual range
Pattern variable	89	3.47	1.44	1-5
Mission variable	83	3.81	1.25	1-5
Positioning variable	88	4.27	1.55	1-5

2.2.3. Company Size

Company size was measured using the total revenues. The database provided the company size in terms of revenues and number of employees; an analysis to verify the relationship between the two dimensions was conducted. It showed that greater is the

[4] This represents an extension of the method of Shortell & Zajac (1990) because they used it only regarding prospector/defender types whereas we employed it also for build/hold and cost leader/differentiator types.

number of employees and greater is the revenues value. This means that the two company size dimensions were coherent each other[5].

In order to normalize the data, a logarithmic transformation of the measure was necessary. Table 3 presents descriptive statistics of the revenues measure.

Table 3 - *Descriptive statistics of Company Size (in millions €)*

	n	Mean	Std. Deviation	Min.	Max.
Revenues	92	197.20	891.74	25.00	8,442.00
Revenues (log)	92	1.79	0.43	1.40	3.93

2.2.4. Industry

The employed database provided the classification of each company by industry. Seven categories are represented in the sample, plus a mixed one collecting companies from the remaining sectors: Furniture and wooden products (27 companies), Mechanical and Electronic equipment (19), Chemical and Oil (15), Automotive (9), Textile, Fashion and Clothing (7), Printing and Editing (4), Buildings (2) and Other sectors (9).

3. RESULTS

3.1. SMA adoption and intensity of use

Table 4 provides frequencies and descriptive statistics for the fourteen SMA techniques usage rates that helps in understanding the extent of adoption of SMA techniques by Italian companies. They are presented in descending order of usage; the mean scores range from 3.77 (Attribute Costing) to 2.28 (Life Cycle Costing) and the actual range coincide with the theoretical range (1-5). An apparent sign of huge use of the SMA techniques is evident noticing that seven of the fourteen mean usage scores are situated above the midpoint of the measurement scale.

The provision of frequencies information could help in a deeper interpretation of the results. In particular the first consideration regards the distinction between "non adopters" and "adopters" of SMA. Those respondents indicating 1 are classified as "non adopters" (1 means "never" used) instead of those indicating 2, 3, 4 and 5 are considered "adopters" of SMA techniques.

[5] A correlation coefficient between the two measures of 0.98 ($p<0.01$) was found.

Table 4 – *Frequencies and Descriptive statistics of the SMA techniques usage rate*

Variable	N. of respondents		Frequencies							Median	Mean	S.D.	Actual Range
			Non adoption (1)		*Low adoption (2/3)*		*High adoption (4/5)*		*I don't know/ I don't answer*				
Attribute Costing	90	(100 %)	10	(11 %)	22	(24 %)	58	(65 %)	2	4	3.77	1.43	1 - 5
Customer Accounting	89	(100 %)	8	(9 %)	32	(36 %)	49	(55 %)	3	4	3.57	1.36	1 - 5
Strategic Pricing	86	(100 %)	10	(11 %)	29	(34 %)	47	(55 %)	6	3	3.51	1.28	1 - 5
Competitive position monitoring	87	(100 %)	7	(8 %)	39	(45 %)	41	(47 %)	5	3	3.46	1.21	1 - 5
Competitor performance appraisal based on published financial statements	85	(100 %)	13	(15 %)	32	(38 %)	40	(47 %)	7	3	3.29	1.37	1 - 5
Strategic Costing	85	(100 %)	15	(18 %)	35	(41 %)	35	(41 %)	7	3	3.16	1.36	1 - 5
Quality Costing	87	(100 %)	14	(16 %)	40	(46 %)	33	(38 %)	5	3	3.08	1.37	1 - 5
Competitor cost assessment	86	(100 %)	12	(14 %)	43	(50 %)	31	(36 %)	6	3	2.96	1.23	1 - 5
Target Costing	82	(100 %)	24	(29 %)	30	(37 %)	28	(34 %)	10	3	2.74	1.47	1 - 5
Benchmarking	84	(100 %)	19	(23 %)	39	(46 %)	26	(31 %)	8	3	2.73	1.33	1 - 5
Value Chain Costing	84	(100 %)	28	(33 %)	32	(38 %)	24	(29 %)	8	2,5	2.62	1.47	1 - 5
ABC/M	82	(100 %)	29	(35 %)	30	(37 %)	23	(28 %)	10	2	2.51	1.48	1 - 5
Integrated performance measurement	83	(100 %)	32	(38 %)	28	(34 %)	23	(28 %)	9	2	2.45	1.41	1 - 5
Life Cycle Costing	79	(100 %)	37	(47 %)	24	(30 %)	18	(23 %)	13	2	2.28	1.40	1 - 5

Among the "adopters" two clusters have been created to distinguish the intensity of use of the techniques. The first one collects respondents indicating 2 or 3 (2 means "very rarely" and 3 means "sometimes" used); this class indicates a low usage level of the technique. The second cluster collects respondents indicating 4 or 5 (4 means "frequently" and 5 means "always" used); this class indicates an high usage level of the technique. The last column of the frequencies indicates the number of "I don't know/I don't answer.

Seven SMA techniques (Attribute Costing, Strategic Costing, Quality Costing, Customer Accounting, Strategic Pricing, Competitive position monitoring, Competitor performance appraisal based on published financial statements) present the mean score over 3. The addressed techniques are indeed strongly oriented towards the provision of information for decision making involving the two main external actors influencing the strategic success for the firm, i.e. customers and competitors.

It is noteworthy that the two activity-costing oriented techniques (Value Chain Costing, ABC/M) have high "non adoption" rate (33% and 35% respectively); the ABC high adoption rate resulting from the research (28%) is consistent with the results of other recent surveys in Italy (Arena & Azzone, 2005) and confirm the difficulty of Italian companies in implementing this technique (Cinquini *et al.*, 1999).

The highest "non adoption" rates regards Integrated PMSs and LCC, that have the lowest mean score in the sample; the latter presents the highest number (13) of "I don't know/ I don't answer" responses among the considered techniques. The Integrated PMSs high adoption rate (28%) in this research is less than the adoption rate of BSC (39,3%) resulting from the Arena & Azzone (2005) survey on Italian companies.

Table 5 presents the extent of SMA usage by indicating the number of SMA techniques contemporaneously adopted by the companies. 94.6 % of the sample finds in the range 5-14 with a median value of 10; it remarks the wide use of SMA techniques, in other words "all companies use some SMA techniques". However it is equally clear that a few (19.6%) use all the techniques; it is more evident if we concentrate the analysis on "high adopters", where none declared to use all the fourteen techniques. This category finds the higher concentration (91.3 %) between 1 and 10 with a median value of 5.

Table 5 – *SMA techniques selection*

No of techniques adopted	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**
No of Companies "Adopters" (%)	0 (0%)	2 (2.2%)	1 (1.1%)	0 (0%)	2 (2.2%)	5 (5.4%)	4 (4.3%)	6 (6.5%)	7 (7.6%)	9 (9.8%)	9 (9.8%) Median	10 (10.9%)	8 (8.7%)	11 (12.0%)	18 (19.6%)
No of Companies "High Adopters" (%)	4 (4.3%)	12 (13.0%)	9 (9.8%)	3 (3.3%)	8 (8.7%)	12 (13.0%) Median	14 (15.2%)	9 (9.8%)	7 (7.6%)	5 (5.4%)	5 (5.4%)	2 (2.2%)	1 (1.1%)	1 (1.1%)	0 (0.0%)

The conclusion stemming from the previous consideration is that companies are selective in their choice of SMA techniques. Such a result confirm the first general hypothesis formulated, i.e. that companies do not indifferently adopt SMA techniques. Given that "all companies use only some specific SMA techniques" it is interesting to understand which variables affect SMA techniques selection. In order to do so, the postulated hypotheses address strategy, company size and sector as the main factors that can influence the SMA techniques choice and adoption.

3.2. Exploring distinctive features and complementarities of SMA techniques

In order to evaluate the features of Strategic Management Accounting related to the first research question, an exploratory factor analysis of usage rates was employed. The latter permits a deeper reflection in a double sense. Firstly it highlights positive relationships across SMA techniques, meaning they can be grouped in coherent clusters. Secondly, stemming from the analysis of the techniques comprised in each factor, it is possible to associate and define distinctive features/dimensions underlying Strategic Management Accounting. The principal component method of extraction with varimax rotation was used. Selecting factors with eigenvalues greater than one (Sharma, 1996) , four factors with a percentage of variance explained of 67 .13 have been determined. Benchmarking and Integrated Performance Measurement did not significantly load on any of the factors, so they were excluded from the analysis. Table 6 details the results of the factor analysis.

Table 6 – *Factor Analysis results*

SMA techniques	Factor score	Eigenvalue	Cronbach Alpha	Factor Label (tech. orientation)
Competitor Cost Assessment	.798	4.220	.771	Competitor-oriented techniques
Competitor Performance Appraisal based on published Financial Statements	.779			
Competitive Position Monitoring	.705			
Strategic Pricing	.625			
Quality Costing	.845	1.569	.680	Long term/ Future-oriented techniques
Life Cycle Costing	.749			
Strategic Costing	.516			
ABC/M	.831	1.154	.656	Process/Activity oriented techniques
Value Chain Costing	.680			
Target Costing	.614			
Customer Accounting	.823	1.114	*	Customer-oriented techniques
Attribute Costing	.787			

* Corr. (Customer Accounting, Attribute Costing) = .456 at p<0.00 1

The four factors induce in reflecting on some features characterising SMA. The first factor (Competitor Cost Assessment, Competitor performance appraisal on public financial statements, Competitor position monitoring and Strategic Pricing) underlines a strong orientation towards competitor information. The word "competitor" appears continuously except for the technique "Strategic Pricing". The latter, even if apparently incoherent with the other techniques, recalls the pricing process related to competit or reaction and price decision. In this vein it is well acceptable as synthesized by the factor.

The second factor (Quality Costing, Life Cycle Costing and Strategic Costing) collects techniques with a long term/future orientation. Life Cycle Costing, appr aising the cost of the product/service along the life cycle, and Strategic costing, pursuing the

long term competitive advantage, clearly recall the long run focus. Quality Costing reveals a forward orientation not when it is used as a mere costing techniq ue aiming at calculating the quality and non-quality costs, but when quality costs are analysed as a strategic tool to obtain a competitive advantage in the long run.

The third factor (Activity-based Costing/Management, Value Chain Costing and Target Costing) mainly reflects costing techniques. From an in depth analysis it emerges clearly the common process vision that characterises each technique. The activity concept constitutes the core of ABC/M and Value Chain Costing but it is also recalled in Target Costing. The latter focuses on the product design activity, but, at the same time, it involves all the activities of the value chain in order to reduce costs and attain the target profit.

The fourth factor (Customer Accounting and Attribute Costing) heavily focuses on customers and market. Customer accounting aims at calculating the customer profitability while Attribute costing aims not only at calculating the cost of product attributes, but also at managing and offering those attributes that appeal to cust omers.

Summing up, each factor underlines a particular aspect of Strategic Management Accounting (deriving from the defined SMA techniques). Competitor -focus, long-term, process/activity and customer orientations emerge as heavily characterizing SMA from this research.

From the factor analysis is once more clear that companies select SMA techniques, and do not adopt them indifferently ; the statistical tool reveals that the use is based on coherent clusters of techniques in terms of objectives. As mentioned, each factor, grouping the techniques with similar level of usage, shows that a selection of SMA techniques implementation is made by companies.

3.3. Analysing variables influencing the use and selection of SMA techniques

A substantial objective of the resear ch concerned the investigation of variables potentially explaining the use and selection of SMA techniques. To test the hypotheses posited in the study, a Pearson correlation analysis between fourteen SMA techniques and twelve variables was employed. Three variables concern “strategy type” (Pattern, Mission and Positioning), one “company size” and other eight regard “industry”. Table 7 details the correlation output.

The strategic pattern variable results are not statistically significant in relation to any of the SMA techniques. This means that the hypothesis 1 is rejected.

Hypothesis 2 stated a positive relationship between the mission variable and SMA techniques usage. An unique support evidence is provided as mission is positive and statistically signific ant related to Target Costing ($p < 0.10$). So Hp. 2 is confirmed for only one of the fourteen techniques.

The positioning variable has a negative and statistically significant correlation with Life Cycle Costing ($p < 0.10$), Strategic Costing ($p < 0.10$), AB C/M ($p < 0.10$) and Value Chain Costing ($p < 0.01$). It is interesting to note that all of these are costing techniques related to factor 2 and 3 (long term/ future and process/activity orientation). This means that cost leaders have a greater use of four co sting techniques (Life Cycle Costing, Strategic Costing, ABC/M and Value Chain Costing) compared to differentiators. The evidence confirms the stated Hp. 3 for few of the fourteen techniques.

Finally hypothesis 4 stated a positive relationship between comp any size and SMA techniques usage. These results lead to a clear rejection of this hypothesis.

Table 7 – *Pearson Correlation results*

		Pattern	Mission	Positioning	Company size	Furniture & Wooden products	Mechanical & Electrical Equipment	Chemical & Oil	Textile, Fashion & Clothing	Automotive	Printing & Editing	Building
Factor 1 *(Competitor oriented techniques)*	**Competitive Position Monitoring**	0.07	-0.02	0.05	0.06	0.01	0.09	-0.25**	0.08	0.04	-0.02	-0.06
	Competitor Cost Assessment	-0.01	-0.18	-0.13	-0.20*	0.10	0.04	-0.12	0.04	0.07	-0.06	0.00
	Competitor Performance Appraisal based on published financial statements	0.12	0.02	-0.11	-0.11	0.04	0.11	-0.17	-0.02	0.11	-0.09	-0.15
	Strategic Pricing	-0.05	0.06	-0.17	-0.18*	0.05	-0.08	-0.20*	-0.09	0.11	0.13	0.13
Factor 2 *(Long-term oriented techniques)*	**Quality Costing**	-0.15	-0.02	-0.07	-0.07	0.02	0.05	0.05	-0.08	-0.05	0.03	-0.07
	Life Cycle Costing	-0.16	-0.04	-0.19*	0.08	-0.17	0.10	0.14	-0.16	0.13	-0.03	0.20*
	Strategic Costing	0.06	-0.07	-0.20*	-0.02	0.07	-0.06	-0.17	-0.07	0.14	0.10	0.04
Factor 3 *(Activity oriented techniques)*	**ABC/M**	-0.08	0.02	-0.22*	-0.10	-0.06	0.10	0.01	-0.23**	0.07	0.15	0.11
	Value Chain Costing	-0.10	0.03	-0.32***	-0.17	-0.04	0.02	-0.12	-0.07	0.03	0.21**	0.15
	Target Costing	0.11	0.20*	-0.16	-0.02	0.01	0.07	-0.22**	-0.03	0.29***	0.03	-0.13
Factor 4 *(Customer oriented techniques)*	**Customer Accounting**	-0.04	0.16	-0.05	0.07	0.12	0.16	-0.28***	-0.18*	0.05	0.19*	-0.06
	Attribute Costing	-0.10	-0.03	-0.10	0.08	-0.01	0.01	-0.08	-0.07	0.13	0.04	-0.03
	Integrated Performance Measurement	-0.14	-0.10	0.05	0.04	-0.02	0.05	-0.05	-0.08	0.21**	0.08	-0.16
	Benchmarking	-0.13	0.04	0.18	0.11	-0.12	0.03	0.02	-0.14	-0.06	0.03	0.15

* p<0.1 ** p<0.05 *** p<0.01

Out of the 112 correlations between the fourteen SMA techniques and the eight sectors, only eleven are statistically significant. Among them, only five reveal a positive relation: "Automotive" industry finds a positive and statistically significant relation with Target Costing and Integrated Performance Measurement, "Printing and Editing" with Value Chain Costing and Customer Accounting while "Building" with Life Cycle Costing. None of the sectors reveal a particular predisposition to SMA techniques adoption, even though it is weakly noticeable the dispersion in the adoption among the different sectors. In general is well known that competition and technology characterize the industry, but in this case it is impossible to define a certain level of competition or technology, stemming from the industry, and correlate them to SMA techniques adoption. This leads to a partial rejection of hypothesis 5.

DISCUSSION AND CONCLUSIONS

The survey at the base of the research has showed a significant use of SMA techniques by Italian companies. Seven of the fourteen mean usage scores present a score value 3 (in a 1-5 Likert measurement scale). Attribute Costing, Customer Accounting, Strategic Pricing and Competitive Position Monitoring result the widely used techniques. Oppositely Integrated Performance Measurement Systems and Life Cycle Costing register a limited use. The results explain that many of the companies (94.6 %) adopt from 5 to 14 techniques in the same time, but only a few (19.6 %) use contemporaneously all the 14 techniques. This address that companies are selective in their choice of SMA techniques.

In order to answer the main research questions (what are the distinctive features/orientation of SMA techniques that can help in grouping them coherently? To what extent the adoption can be explained by variables such as strategy, company size and industry?) a factor analysis and a Pearson correlation analysis were employed. The first one conducted to a double conclusion. From one side it helps in the comprehension of SMA techniques selection, because complementarities and positive relationships across techniques (summed by the factors) mean they will be selected in coherent clusters. From the other side it provides evidence in the definition of SMA distinctive features. In fact, as perceptible from the accounting literature (Guilding *et al*., 2000; Cravens & Guilding, 2001; Roslender & Hart, 2003), here is provided empirical support to the definition of SMA features as competitor, long term, process and customer oriented. Summarizing theoretical and empirical works, the word "strategic" into SMA could be related to:

- impact on business strategy (Shank & Govindarajan, 1992a; Roslender & Hart, 2002);
- competitive advantage achievement (Wilson, 1991; Shank & Govindarajan, 1992a; Ward, 1992);
- external orientation (competitors and customers) (Simmonds, 1981, 1986; Bromwich, 1990);
- future orientation (long term outlook) (Hoque, 2002);
- "advanced" internal orientation (processes instead of functions).

Strategy typologies (pattern, mission and positioning), company size and industry were selected as contingent variables potentially explaining SMA techniques adoption. Regarding pattern variable, the uncovered evidence here suggests a substantial incoherence with prior research (Abernethy & Guthrie, 1994; Simons, 1987; Guilding,

1999). While Guilding (1999) found that prospectors make a greater use of Competitor - focus accounting practices, it would be expected that they make a greater use of SMA techniques as well. The research do not confirm this; no relationship between stra tegic pattern and SMA usage rate was found. Marginal confirmation and extension of prior studies relate to mission variable. Govindarajan & Gupta (1985) found greater reliance on long-run performance to be more appropriate in build firms, and Guilding (199 9) extended these results evidencing that build firms have a greater propensity to use Strategic Pricing and Strategic Costing. Further extension is provided here, as Target Costing results in a positive relation to mission variable. Despite the fact that Porter's (1980, 1985) typologies have been widely debated and criticized in their validity (Chenhall, 2003), this typology represents the most significant strategy classification in the research. It has been posited that differentiators would have used ext ensively SMA techniques, in general, but cost leaders use those SMA techniques addressing cost information. This last hypothesis was supported by the results; it confirms the validity of Porter's competitive strategy classification in empirical research an d the extension of Shank & Govindarajan's (1992a) study. Little evidence has been found about the relation between company size and SMA techniques usage. It was expected to find a positive relationship between company size and SMA techniques adoption consi dering that prior studies underlined a positive relationship between company size and accounting sophistication (Bruns & Waterhouse, 1975; Merchant, 1981), Competitor - focus accounting (Guilding, 1999), or Customer Accounting (Guilding & McManus, 2002). Surprisingly Competitor Cost Assessment and Strategic Pricing underline an opposite relationship and disconfirm the hypothesis. The small average dimension of the companies of the sample could be a possible reason to explain this finding. Finally, neither industry variable helps in explain SMA techniques adoption. Fundamental contingencies (competition and technology characterising each industry) do not explain choice in one sub-category of management accounting even if they are influential in overall management accounting design. This result could be addressed by the problem of under-definition and unclearness of industrial classification scheme. A more effective research would have been focussed on specific industry variables like competition or technology.

A summary of the Hypothesis testing results is presented in table 8.

Table 8 – *Summary of the research results*

Hypothesis	***Results***
- (Hp. 1) SMA techniques usage rate is higher in "prospectors" than in "analysers" or "defenders" (PATTERN)	NO
- (Hp. 2) SMA techniques usage rate is higher in "build" than in "hold" or "harvest" (MISSION)	VERY PARTIAL
- (Hp. 3) SMA techniques usage rate is, in general, higher in "differentiators" than in "cost leaders". But in the same time, SMA techniques addressing cost information are used more by "cost leaders" than "differentiators" (POSITIONING)	YES (PARTIAL)
- (Hp. 4) SMA techniques usage rate is higher in larger companies (COMPANY SIZE)	NO
- (Hp. 5) SMA techniques usage rate differs among different industries (INDUSTRY)	NO (PARTIAL)

A number of limitations characterize the research.

The first limit regards the operationalization of the strategy concept. As explained earlier strategy represents a matter if considered as contingent variable to be operationalized in empirical studies (Chapman, 1997). Langfield-Smith (1997) underlined some weaknesses in operationalizing strategy like its multidimensional nature, the distinction between intended and realized strategy and its developmental essence. Aware that these will continue to be the main limitations of this research, it is noteworthy the attempt to catch the strategy multidimensionality through the consideration of three strategic variables (pattern, mission and position) simultaneously. In the mean time it is well known that the research takes a picture of the firm's strategy putting each firm into boxes labelled as "prospector", "build mission", "differentiator" an so on instead of considering the dynamic development of strategy, but it represents a way to solve the recall trade-off in the research process underlined by Weick (1979).

A second matter to be solved attains to the identification of SMA techniques. Which management accounting techniques could be defined "strategic"? Adopting a literature approach to define SMA techniques (Cravens & Guilding, 2001) does not solve the problem. Ambiguous interpretation rises about the significance of SMA and this consequently reflects on the definition of SMA techniques; it should be interpreted as in continuous evolution.

Strictly related to the previous, another issue comes out: how the investigated technique is used? This study considers if and to what extent (frequency) the technique is used but not how. ABC, for instance, could be used as a purely accurate cost accounting technique and not in a strategic way like Palmer (1992) postulates. This regards a clear choice of the survey research: field research would be more suitable to investigate "how" Italian companies adopt SMA techniques.

Within the management accounting sub-set of SMA techniques, companies show evidence of choosing clusters of techniques which appear to reflect the complementarities and integrative benefits of the overall package. Normal contingencies do not seem to play a great effect on the selection of SMA techniques. This implies some considerations.

At first SMA adoption is technique oriented with similar clusters found across different sizes of companies and in different sectors. Secondly, paradoxically strategy does not generally drive the choice of SMA technique: what does the adjective of "strategic" in SMA is refer to? If SMA adoption is not "strategy-driven", then which variables drive the choice? This implies the view (with the possible exception of cost related techniques) that the same SMA techniques as being able to support different strategic approaches. At least, how this is achieved in practice could be researched by a series of case study comparing companies following different strategies while employing the same or similar set of SMA techniques. In this vein, given that strategy, company size and industry are not good explanators of SMA techniques adoption, there are probably other contingent factors (like technology, national culture or other specific contingencies) that intervene and should be considered in future analysis.

Despite the critics and doubts about Strategic Management Accounting essence (Tomkins & Carr, 1996; Lord, 1996), some characteristics of differentiation from conventional management accounting are provided and discussed here. This and other research (Guilding *et al.*, 2000; Cravens & Guilding, 2001) provide that SMA techniques diffusion cannot be considered a marginal topic and, for this reason, Strategic Management Accounting constitute a significant issue and research area within management accounting.

APPENDIX A – Definitions of the management accounting techniques provided in the questionnaire

Activity Based Costing/Management
An approach where costs are allocated to specific activities based on structural and executional cost drivers. The activities require resources and the product/service uses activities.

Attribute Costing
The costing of specific product attributes that appeal to customers. Attributes considered may include: reliability, warranty arrangements, after sale service.

Benchmarking
The comparison of company performance to 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 (ROS). 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 (Balanced Scorecard or non financial indicators)
A measurement system which focuses typically on acquiring performance knowledge based on customer requirements and frequently encompass 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's 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 also safety and environment) problems.

Strategic Costing
The use of cost data based an strategic and marketing information to develop and identify superior strategies that will produce a sustainable competitive advantage.

Strategic Pricing
The analysis of strategic factors in the pricing decision process. These factors may include: competitor price reaction, elasticity, market growth, economies of scale and experience.

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 B – 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.

REFERENCES

Abernethy M.A., Guthrie C.H., 1994, An empirical assessment of the "Fit" between strategy and management information systems design, *Accounting and Finance*, 34, pp. 9-66.

Arena M., Azzone G., 2005, ABC, Balanced Scorecard, EVA ™: an empirical study on the diffusion of innovative management accounting techniques, *International Journal of Accounting, Auditing and Performance evaluation* , 2 (3), pp. 206-225.

Bellis-Jones R., 1989, Customer Profitability Analysis, *Management Accounting*, 67 (2), pp. 26-28.

Berliner C., Brimson J., 1988, *Cost Management for Today's Advanced Manufacturing,* Harvard Business School Press, Boston.

Bouwens J., Abernethy M.A., 2000, The consequences of customization on management accounting system design, *Accounting, Organizations and Society,* 25 (3), pp. 221-259.

Bromwich M., 1990, The case for strategic management accounting: the role of accounting information for strategy in competitive markets, *Accounting, Organizations and Society,* 15 (1/2), pp. 27-46.

Bruggeman W., Van der Stede W., 1993, Fitting management control systems to competitive advantage, *British Journal of Management,* Vol. 4, pp. 205-218.

Bruns Jr., W.J., Waterhouse J.H., 1975, Budgetary control and organizational structure, *Journal of Accounting Research*, Autumn, pp. 177-203.

Cadez S., 2006, *Strategy, Market orientation, and Company performance: the mediating role of Strategic Management Accounting Systems* , paper presented at the Conference "Integrating Global Organization: the role of Performa nce Measurement Systems", July 13-14, Siena, Italy.

Carr L., Tyson T., 1992, Planning quality cost expenditures, *Management Accounting,* October, pp. 52-56.

Chapman C.S., 1997, Reflections on a contingent view of accounting, *Accounting, Organizations and Society,* 22 (2), pp. 189- 205.

Chenhall R.H., 2003, Management Control System design within its organizational context: findings from contingency-based research and directions for future, *Accounting, Organizations and Society,* 28, pp. 123-168.

Chenhall R.H., 2005a, Integrative strategic performance management systems, strategic alignment of manufacturing, learning and strategic outcomes: an exploratory study, *Accounting, Organizations and Society,* 30, pp. 395-422.

Chenhall R.H., 2005b, Content and Process App roaches to Studying Strategy and Management Control Systems, in Chapman C.S. (ed.), *Controlling Strategy: Management, Accounting and Performance Measurement* , Oxford University Press, Oxford.

Chenhall R.H., Langfield-Smith K., 1998, The relationship between strategic priorities, management techniques and management accounting: an empirical investigation using a system approach, *Accounting, Organizations and Society,* 23 (3), pp. 243-264.

Cinquini L., Collini P., Marelli A., Quagli A., Silvi R., 1999, *A survey on cost accounting practices in Italian large and medium size manufacturing firms* , Paper presented at the 22th Annual Congress of the European Accounting Association, Bordeaux, May, 5-7.

Cooper R., Kaplan R.S., Maisel R.S., Morrissey E., Oehm R.M., 1992, *Implementing Activity-based Cost Management – Moving From Analysis To Action*, Ima, New York.

Cravens K.S., Guilding C., 2001, An empirical study of the application of Strategic Management Accounting Techniques, *Advances in Management Accounting,* 10, pp. 95-124.

Cross K., Lynch R., 1989, Accounting for competitive performance, *Journal of Cost Management,* Spring, pp. 20-28.

Dent J.F., 1990, Strategy, Organization and Control: some possibilities for accounting research, *Accounting, Organizations and Society,* 15 (1/2), pp. 3- 25.

Ellram L.M., Siferd S.P., 1998, Total Cost of Ownership: a key concept in Strategic Cost Management Decisions, *Journal of Business Logistics,* 19 (1), pp. 55-84.

Ewert R., Ernst C., 1999, Target Costing, co-ordination and Strategic Cost Management, *European Accounting Review,* 8 (1), pp. 23-49.

Govindarajan V., 1988, A contingency approach to strategy implementation at the business-unit level: integrating administrative mechanisms with strategy, *The Academy of Management Journal,* 31, pp. 828-853.

Govindarajan V., Fisher J., 1990, Strategy, control systems, and Resource sharing: Effects on Business-unit performance, *The Academy of Management Journal,* 33 (2), pp. 259-285.

Govindarajan V., Gupta A.K., 1985, Linking control systems to business unit strategy: impact on performance, *Accounting, Organizations and Society,* 10, pp. 51-56.

Guilding C., 1999, Competitor-focused accounting: an exploratory note, *Accounting, Organizations and Society,* 24 (7), pp. 583-595.

Guilding C., Cravens K.S., Tayles M., 2000, An international comparison of strategic management accounting practices, *Management Accounting Research,* 11 (1), pp.113-135.

Guilding C., McManus L., 2002, The incidence, perceived merit and antecedents of customer accounting: an exploratory note, *Accounting, Organizations and Society,* 27, pp. 45-59.

Gupta A.K., Govindarajan V., 1984, Business unit strategy, Managerial characteristics, and Business unit effectiveness at strategy implementation, *The Academy of Management Journal,* 27 (1), pp. 25-41.

Heagy C.D. , 1991, Determining optimal quality costs by considering cost of lost sales, *Journal of Cost Management,* Fall, pp. 64-72.

Hoque Z., 2002, *Strategic Management Accounting: Concepts, Processes and Issues* , Spiro Press, London.

Jones L., 1988, Competitor cost analysis at Caterpillar, *Management Accounting,* October, pp. 32-38.

Kald M., Nilsson F., Rapp B., 2000, On strategy and Management Control: The importance of Classifying the strategy of the Business, *British Journal of Management,* Vol. 11, pp. 197-212.

Khandwalla P.N., 1972, The Effect of different types of competition on the use of Management Controls, *Journal of Accounting Research*, Autumn, pp. 275-285.

Kaplan R.S., Norton D.P., 1996a, Using the balanced scorecard as a strategic management system, *Harvard Business Review,* January-February, pp. 75–85.

Kaplan R.S., Norton D.P., 1996b, Linking the balanced scorecard to strategy, *California Management Review,* Fall, pp. 53-79.

Kaplan R.S., Norton D.P., 2000, *The Strategy-Focused Organization,* Harvard Business School Press, Boston.

Kittleson M.J., 1997, Determining effective follow-up of e-mail surveys, *American Journal of Health Behaviour,* 21(3), pp. 193-196.

Kotha S., Vadlamani B.L., 1995, Assessing generic strategies: an empirical investigation of two competing typologies in discrete manufacturing industries, *Strategic Management Journal,* Vol. 16, pp. 75-83.

Langfield-Smith K., 1997, Management Control Systems and Strategy: A Critical Review, *Accounting, Organizations and Society,* 22 (2), pp. 207-232.

Langfield-Smith K., 2005, What do we know about Management Control Systems and Strategy?, in Chapman C.S. (ed.), *Controlling Strategy: Management, Accounting and Performance Measurement*, Oxford University Press, Oxford.

Lord B., 1996, Strategic Management Accounting: the emperor's new clothes, *Management Accounting Research*, 7 (3), pag.347-366.

Malina N.A., Selto F.H., 2001, Communicating and controlling strategy: an empirical study of the effectiveness of the Balanced Scorecard, *Journal of Management Accounting Research,* Vol. 13, pp. 47-90.

McNair C.J., Leibfried K., 1992, *Benchmarking: A Tool for Continuous Improvement,* Omneo, Texas.

Merchant K., 1981, The design of the corporate budgeting system: influences on managerial behaviour and performance, *The Accounting Review*, October, pp. 813-829.

Miles R.E., Snow C.G., 1978, *Organizational strategy, structure, and process,* McGraw-Hill, New York.

Miller A., Dess G.G., 1993, Assessing Porter's (1980) Model in terms of its generalizability, accuracy and simplicity, *Journal of Management Studies*, 30 (4), pp. 553-585.

Miller D., Friesen P.H., 1982, Innovation in conservative and entrepreneurial firms: two models of strategic momentum, *Strategic Management Journal,* 3, pp. 1- 25.

Miller G., De Meyer A., Nakane J., 1992, *Benchmarking Global Manufacturing,* Business One Irwin, Illinois.

Monden Y., Hamada K., 1991, Target Costing and Kaizen Costing in Japanese Automobile Companies, *Journal of Management Accounting Research,* Fall, pp.16-34.

Moon P., Bates K., 1993, Core analysis in strategic performance appraisal, *Management Accounting Research,* 4 (4), pp.139-152.

Morgan M.J., 1993, Accounting for strategy, *Management Accounting ,* May, pp.20-24.

Nanni A.J., Dixon J.R., Vollman T.E., 1992, Integrated performance measurement: Management accounting to support the new manufacturing realities, *Journal of Management Accounting Research,* Fall, pp. 1-19.

Narver J.C., Slater S.F. , 1990, The effect of a market orientation on business profitability, *Journal of Marketing ,* October, pp. 20-35.

Palmer R.J., 1992, Strategic goals and the design of strategic management accounting systems, *Advances in Management Accounting*, 1, pp. 179-204.

Porter M., 1980, *Competitive Strategy,* Free Press, New York.

Porter M., 1985, *Competitive Advantage,* Free Press, New York.

Roslender R., Hart S.J., 2002, Integrating Management Accounting and Marketing in the pursuit of competitive advantage: the case for Strategic Management Accounting, *Critical Perspectives on Accounting*, 13, pp. 255-277.

Roslender R., Hart S.J., 2003, In search of strategic management accounting: theoretical and field study perspectives, *Management Accounting Research,* 14 (3), pp. 255-279.

Shank J.K., Govindarajan V., 1989, *Strategic Cost Analysis: the evolution from managerial to strategic accounting,* Homewood, Richard Irwin Inc.

Shank J.K., Govindarajan V., 1992a, Strategic Cost Management: Tailoring Controls to Strategies, *Journal of Cost Management,* Fall, pp. 14-24.

Shank J.K., Govindarajan V., 1992b, Strategic Cost Management: The Value Chain perspective, *Journal of Management Accounting Research,* Fall, pp. 179-198.

Shank J.K., Govindarajan V., 1993a, What "drives" cost? A strategic cost management perspective, *Advances in Management Accounting,* 2, pp. 27-46.

Shank J.K., Govindarajan V., 1993b, *Strategic Cost Management: The new tool for competitive advantage,* Free Press, New York.

Sharma S., 1996, *Applied Multivariate Techniques*, Wiley and sons Inc., New York.

Shields M.D., Young S.N., 1991, Managing product life cycle costs: an or ganizational model, *Journal of Cost Management,* 5 (3), pp.39-52.

Shortell S.M, Zajack E.J., 1990, Perceptual and Archival Measures of Miles and Snow's Strategic Types: A Comprehensive Assessment of Reliability and Validity, *The Academy of Management Journal,* 3 (4), pp. 817- 832.

Simmonds K., 1981, Strategic Management Accounting, *Management Accounting (UK),* April, pp.26-29.

Simmonds K., 1982, Strategic Management Accounting for Pricing: A Case Example, *Accounting and Business Research,* 12 (47), pp. 206-214.

Simmonds K., 1986, The Accounting Assessment of Competitive Position, *European Journal of Marketing*, 20 (1), pp. 16-32.

Simons R., 1987, Accounting control systems and business strategy: an empirical analysis, *Accounting, Organizations and Society,* 12 (4), pp. 357-374.

Simons R., 1990, The role of management control systems in creating competitive advantage: new perspectives, *Accounting, Organizations and Society,* 15 (1/2), pp. 127-143.

Simpson J.B., Muthler D.L. , 1987, Quality costs: facilitating the qu ality initiative, *Journal of Cost Management,* Spring, pp. 25-34.

Tomkins C., Carr C., 1996, Reflections on the papers in this issue and a commentary on the state of strategic management accounting, *Management Accounting Research*, 7 (2), pp. 271-280.

Ward K., 1992, *Strategic Management Accounting,* Butterworth-Heineman, Oxford.

Weick K., 1979, *The social psychology of organizing*, Josey Bass, San Francisco.

Wilson R.M.S., 1991, *Strategic management accounting,* in *Issues in Management Accounting*, Ashton D.J., Hopper T.M., and Scapens R.W., editors. Prentice -Hall, London.