INTERNATIONAL JOURNAL OF ACADEMIC RESEARCH IN BUSINESS & SOCIAL SCIENCES

Vol 10, Issue 2, (2020) E-ISSN: 2222-6990

Factors Influencing the Use of the Balanced Scorecard: Evidence from a Regional Context in Italy

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To Link this Article: http://dx.doi.org/10.6007/IJARBSS/v10-i2/6951 DOI:10.6007/IJARBSS/v10-i2/6951

Published Date: 28 February 2020

Abstract

The balanced scorecard (BSC) has received considerable attention, by companies and researchers, for its potentiality in mitigating the limitations of traditional management accounting tools and supporting strategic management. Despite this interest, there is still little empirical evidence on the levels of BSC implementation and the contingency factors influencing it. This study explores whether company size and type of industry affect the BSC use and focuses on motivations of the BSC use (or non-use). A survey was conducted in a highly productive region, Northeast Italy, and quantitative analysis was carried out to assess the statistical significance of the association between the contingency factors and the BSC use. The results confirm prior studies showing that BSC use is biased towards larger companies. However, this holds in every industry except in manufacturing, where also small firms are prone to adopt it. A qualitative analysis integrates these results highlighting that the BSC is mainly used to align objectives and improve business processes and communication within organizations.

Keywords: Balanced Scorecard, Contingency Factors, Management Control, Performance, Northeast Italy

Introduction

The balanced scorecard (BSC) is a strategic performance management tool introduced and developed during the nineties by Kaplan and Norton (1992, 1996), which has received worldwide recognition and utilization by companies and attracted considerable attention by the researchers and practitioners (Cooper et al., 2017). Through a comprehensive approach, the scorecard combines traditional financial measures providing the results of previously taken actions with non-financial measures involving three performance perspectives - customer, internal processes, and learning and growth - proposed as the drivers for creating long-term shareholder value. In this sense, the BSC was considered at the time of its introduction as a management accounting innovation, which can mitigate the limitations of traditional management accounting tools, such as financial performance measures, budget,

variance analysis, or cost accounting, in a business scenario emphasising global competition, investments in advanced manufacturing technologies, products innovation and quality, delivery and flexibility to meet customer needs (Banker et al., 1993; Ax & Bjørnenak, 2005).
However, research work has documented that the enormous interest towards the BSC is not necessarily associated with high implementation levels and that the BSC is not familiar to all companies (Machado, 2013). Although researchers have examined company-level factors that may distinguish the BSC users from non-users under a contingency framework (Hoque & James, 2000; Hendricks et al., 2012), Hoque (2014), discussing the knowledge gaps, noted that "further research is needed to determine international variations in design and use of the balanced scorecard in organisations in both private and public sectors" (2014, p. 46). Further, there is still little empirical evidence on the levels of BSC implementation, the reasons for adoption or non-adoption, and BSC benefits in small- and medium-sized enterprises (Giannopoulos et al., 2013; Malagueño et al., 2018).
This study aims to address these gaps through a questionnaire survey of a sample of 98 companies operating in private sectors and located in the Northeast of Italy, a highly productive area with a significant orientation towards innovation and international markets (Carraro, 2019). Based on a congruence approach as a form of contingency fit (Gerdin & Greve, 2004), the purpose of the study is to investigate:
- usage rate and perceived usefulness of the BSC;
- potential determinants and motivations for BSC use (or non-use).
In particular, drawing from prior literature, two contingency factors have been examined as determinants of BSC use: company size and industry.
The study contributes to the body of literature on the BSC by providing new insights on factors influencing its use and possible benefits and drawbacks of its application. In particular, focusing on company industry as a contextual factor, it extends contingency-based hypotheses regarding the antecedents of BSC use.
The paper is organised as follows. The following section provides a literature review on the BSC and its use. Then, the research method is described, focusing on data collection and the variable measurement, whereas findings section presents the results through descriptive statistics, statistical tests and discussing some qualitative questionnaire responses. The final section includes the conclusions of the study.

Literature Review

The Balanced Scorecard: An Overview

In the last decades, accounting scholars have given increasing attention to the importance of performance measurement systems including both non-financial and financial measures to alleviate problems arising from the use of financial measures, such as the transaction-based, backward-looking orientation and the widely discussed managerial myopia. The BSC is one of the management control models that integrates financial and non-financial measures (Merchant and Van & Stede, 2017). The scorecard provided an entirely innovative, comprehensive approach to the performance measurement issues, presenting four major characteristics (Kaplan & Norton, 1993): (1) the company's mission and strategy are highlighted in a top-down reflection, differently from the traditional bottom-up measures; (2) the BSC has a forward-looking orientation, addressing current and future success of a company instead of simply concentrating on the last reporting period with no indication of performance improvement; (3) the BSC integrates external and internal measures, enabling management to analyse where previous trade-offs between performance measures have

been made and contributing to ensure that this does not occur in the future; (4) the BSC helps companies to focus on appropriate performance areas, as it attracts managers' attention exclusively on the measures that are most critical for the company, without overloading them with far more measures than necessary.

Further, the BSC differs from other performance measurement systems "in that it contains outcome measures and the performance drivers of outcomes, linked together in cause-and-effect relationships" (Nørreklit, 2000, p. 67). The BSC considers short-term and long-term concerns, has the purpose to provide the information needed in preventive action and feedforward control, and tackles with sub-optimization, by forcing senior managers to evaluate all the major measures together, in order to make sure that improvement in one area is not achieved at the expense of another (Merchant & Stede, 2017). The use of the BSC has been frequently recommended for facilitating strategy implementation and improving organizational performance (Franco-Santos et al., 2012).

The BSC retains the emphasis on financial measures as the ultimate outcome measures for company success, but supplements these with metrics from three additional perspectives, such as customer, internal process, and learning and growth. While financial measures deliver the results of previously taken actions, the other three perspectives consist of nonfinancial indicators that enable companies to monitor progresses in developing the capabilities and the intangible assets required for future growth and financial performance (Kaplan & Norton, 1996). The financial perspective assesses the degree to which company strategy implementation is contributing to its goals in terms of profitability, growth, and shareholder value. The customer perspective determines how the company wishes to be viewed by its customers (Nørreklit, 2000). Customer measures are necessary in the view that the only route to long-term financial success is to deliver the products and services demanded by customers. The internal process perspective regards the business processes, such as internal operations, competencies and technologies, which enable the company to reach the objectives targeted for its shareholders and customers. Finally, the fourth perspective involves improvements in people, system and process capabilities to meet the objectives of the other three perspectives over the long term.

For each perspective, the use of the BSC involves the definition of the objectives, the selection of appropriate measures, setting targets and undertaking congruent actions to meet the targets. The number of performance measures used for each perspective is limited to those that are most critical for the organization. Every company can construct its own BSC in order to reflect its strategy and to clarify, simplify and operationalize the vision at the top of the organization, focusing on a short list of leading indicators of current and future performance. The BSC appears suitable for use by all types and sizes of companies (De Geuser et al., 2009; Malagueño et al., 2018) and may satisfy multiple managerial and information needs by presenting in single report apparently disparate elements of the competitive agendas, such as profitability measures, cash flow, customer satisfaction, response time, quality, teamwork, lead-time reduction and long-term management. Finally, the balanced approach among the four perspectives enables a more holistic presentation of the business and be beneficial in the context of external communication in terms of financial and non-financial information to disclose (Firk et al., 2020).

The Balanced Scorecard as a Strategic Management System

As explained above, a BSC integrates traditional financial measures with benchmarks for performance in three key non-financial areas, thus, attaining a broader perspective on the

company's situation and activities while providing a powerful organizing framework. Originally proposed as a performance measurement tool, the BSC had become increasingly associated with strategic planning and implementation, serving as a management framework capable of identifying and exploiting the key value drivers that businesses could exploit to optimize strategy (Kaplan & Norton, 2001). Under the BSC approach, top management translates its strategy and vision into a set of performance measures that employees can understand and influence. This enables management to coordinate and fine-tune all operations and businesses to ensure that every activity is aligned with the company strategy. That is, the BSC helps aligning strategy with employees' actions and goals (Davis & Albright, 2004).

According to Kaplan and Norton (1996), four main processes provide the guidelines for connecting short-term activities to long-term objectives: (1) translating the vision. The scorecard's measurement focus induces managers to discuss and find consensus on an integrated set of objectives and performance metrics that helps them to convert their visions into pragmatic operations; (2) communicating and linking. Company strategy becomes accessible and useful to employees when the scorecard is made available at every level of the organization. The overarching strategic objectives and measures of the high-level scorecard are thus tailored into objectives and measures suitable throughout the whole organization. These targets, related to individual performance and compensation systems, allow an employee to understand how the overall strategy is sustained by his or her productivity and facilitate the alignment between individual and organizational objectives; (3) business planning. Strategic planning and budgeting are generally carried out through separate planning cycles and even different units and people within a company, typically giving rise to problems of disconnection between budgeting systems and strategic objectives (Libby and Lindsay, 2010). Differently, the BSC helps companies to integrate the two planning activities and make sure that the strategic objectives are supported by financial budget targets. Once performance measures have been set for the four scorecard perspectives, the primary drivers of the desired outcomes are identified, as are the indicators to be employed to assess the progress made towards them; (4) feedback and learning. The BSC, through its strategic feedback and review mechanisms, should help a company to detect any deviation from plans, to develop inferences and theories regarding cause-and-effect relationships between performance measures and drivers, and review the relationships after appropriate reassessment. Further, the BSC, collecting data and providing feedback on products and services, new concepts regarding internal processes, breakthroughs in technology, and staff and systems capabilities, will enable the company strategy to be continually improved and monitored in terms of its effectiveness, identifying any critical issue.

While the whole organization may have an overall BSC, managers at different organizational levels or business units may have their BSC, including items they can understand and control and that are consistent with the performance measures of the overall BSC, to facilitate coordination and synergies between business units (Seal et al., 2019). Every organisational unit can be regarded as a strategic business unit whose activities contribute to strategy execution, independently of the degree of decentralization of a company and the type of function (line/staff), with implications for target setting and performance evaluation (Kaplan, 2006).

Surveys of the BSC Use

Several surveys have been conducted on the use of the BSC, over time and in different Countries, by scholars or consulting companies, for a wide range of research aims. Many surveys focused on either the usage rate or the level of use of the BSC. While the usage rate is determined as the proportion of companies using the BSC, the level of use regards the intensity of use and is generally expressed on a Likert scale. In Italy, for example, Bubbio (2004) found a usage rate of 27% in a sample including a majority of large companies and some SME. Cinquini and Tenucci (2010) reported a low level of usage in a sample of 93 large manufacturing companies (average score = 2.45 on a 5-point scale), while in Cescon et al. (2019), who also examined a sample of large manufacturing companies, the level is higher (average score = 5.34 on a 7-point scale). Low level of usage was also registered in Australia (Cadez & Guilding, 2007), and the level appeared to be moderate in both the U.S. and Slovenia (Cravens & Guilding, 2001; Cadez & Guilding, 2007). The large-scale survey from Bain & Company on management tools and trends revealed that although the BSC is the third among the 25 most popular management tools, 29% of the responding managers reported using it (Rigby & Bilodeau, 2018).

Other surveys examined firm-level and external factors influencing the use of the BSC, such as strategy, company size, investments, environment, market factors. Generally, different studies have found a positive association between large companies and the BSC adoption (Hoque & James, 2000; Speckbacher et al., 2003; Hendricks et al., 2012). The Slovak-based results of Lesáková and Dubcová (2016), determined on a sample of 284 businesses of different sizes (from large to small) and industries, confirmed that not only the utilization but also the knowledge about the BSC method is very low in small companies. Focusing on small companies in UK and Cyprus, Giannopoulos et al. (2013) showed that only 20% of the surveyed companies in UK, and 45% in Cyprus, had awareness of its existence. Among companies that were aware of the BSC, only a minority used it. Similar results were obtained by Machado (2013) from a sample of Portoguese SMEs. More, these findings are in line with the results of a global survey carried out by the consulting company 2GC, confirming that Balanced Scorecard usage is strongly biased towards larger companies (2GC, 2019).

There is empirical evidence of the wide BSC use and implementation by companies operating in the private sector. The BSC has been applied in various manufacturing companies, service companies, retail, and energy companies among many others, in the public sector and non-profit as well (Hoque, 2014; Perkins et al., 2014). Based on a sample of publicly traded firms in German-speaking Countries (Germany, Austria and Switzerland), Speckbacher et al. (2003) found that companies operating in the “Consumer & retail” industry are associated with a significantly lower usage of the BSC, whereas no significant association were found for other eight different industries. Similarly, in an India-based study, Anand et al. (2005) observed no differences in the use of the BSC between manufacturing and service companies in terms of the importance assigned to the four perspectives and the performance of the BSC as a management tool for identifying the business areas needing improvements. Finally, examining 17 Finnish organizations operating in manufacturing and service industries, Malmi (2001) noted that BSCs were basically used in two different ways: to facilitate management by objectives and as an information system. No dissimilarities among industries were emphasized.

Limitations of the BSC Use

Generally, apart from the surveys, much research work has been published on the BSC, using both quantitative/statistical (survey and experiments) and qualitative (case studies) research methods, drawing upon several theories and regarding both private and public sectors. These studies have addressed the economic benefits and performance improvement deriving from the use of the BSC, judgement decision-making usefulness, strategic alignment and causal chain focus, the role of consultants in the BSC implementation and diffusion, the adoption of the BSC as a tool to gain external legitimacy (Hoque, 2014). Literature has also emphasized possible criticisms of the BSC use. For example, some critics argue that the BSC may be too rigid and is incapable of constructing a system that can deal with the fast-changing environment of contemporary business, in which the importance of organizational elements may change daily, at a speed with which the BSC cannot keep pace (Awadallah & Allam, 2015). Then, for effective implementation of the BSC, it has been emphasized that employee knowledge, training, and usage must be complete, but this outcome is far from certain. It may require significant investments and time. Moreover, companies may encounter some difficulties in its construction and application, due to the increased number and range of performance measures shaping the BSC, especially for actions that are new (Giannopoulos et al., 2013). Lesáková and Dubcová (2016) identified different common explanations for disinterest in the BSC implementation: unfamiliarity with the BSC, use of other strategic management tools, not performing strategic management or planning, lack of time, as well as other reasons, such as size of business (this mostly referred to small businesses), scope of the business, pointless use of new management methods.

Nørreklit (2000) found that some of the key assumptions and relationships of the BSC are problematic. For example, the relationship among the four perspectives would not be a causal one, but rather a logical one. Further, this author suggests that the BSC should be adjusted and improved as in the current form "is not a valid strategic management tool, mainly because it does not ensure any organizational rooting, but also because it has problems ensuring environmental rooting. Consequently, a gap must be expected between the strategy expressed in the actions actually undertaken and the strategy planned" (Nørreklit, 2000, p. 82).

Finally, despite some authors showed a positive association between the BSC and organisational performance (Hoque & James, 2000; Malina & Selto, 2001; Braam & Nijssen, 2004; Costantini et al., 2019), some authors found no support to the proposition that the BSC can be used to improve financial performance (Ittner, Larcker, & Meyer, 2003; Kraus & Lind, 2010).

Research Hypotheses

The theoretical framework of the study draws upon the contingency theory of management control systems (MCS), which broadly postulates that there are no MCS that can be universally applied to all organizations under all circumstances, but that the choice of appropriate systems will depend upon internal and external factors that are organization-specific (Otley, 2016). The contingency approach has allowed identifying various potential determinants of MCS effective design and implementation, such as external environment, technology, organisational structure and size, strategy, national culture, and leadership (Chenhall, 2003). Contingency-based studies are still relevant to examine the use and the implementation of the BSC (Hoque, 2014). Specifically, this study follows a congruence approach as form of contingency fit, since the relationship between contextual factors (company size and industry) and the use of the BSC has been investigated with no regard to company performance (Gerdin

& Greve, 2004). Industry has been included in the analysis as there has been so far little discussion in literature about how industry influences management accounting and control practices. Studies that explicitly introduce industry context as a contingency factor in the statistical tests are exceptions rather than the rule (Messner, 2016).
In addition, the present research focuses on the motivations provided by companies that do not use the BSC to highlight potential problems associated with its use.
Thus, based on the academic contributions presented in the previous sections, three hypotheses are being proposed:
H1: The use of the BSC is positively associated with larger company size
H2: The use of the BSC is independent of company industry
H3: For non-users, the lack of interest in the use of the BSC is related to the difficulties in its construction and application.

Research Method and Data Collection

The study is based on a questionnaire survey of a sample of manufacturing companies located in the Northeast of Italy. This region is a first level NUTS (The Classification of Territorial Units for Statistics – European Union) including Emilia-Romagna, Friuli-Venezia Giulia, Trentino-Alto Adige/Südtirol, Veneto). Overall, it is an area highly productive area with substantial abilities for technological innovation, new products and processes, higher quality standards and orientation towards export and international trade (Carraro, 2019).
The questionnaire was designed and distributed with the Google Forms platform and consisted of 18 questions. The questionnaire included open-ended and scaled questions. The first three questions provided general information about the responding company, while the remainder targeted its organizational performance measurement systems in general and the familiarity with the BSC in particular. To measure the opinion of the respondents about the level of use and perceived usefulness of the BSC, a 7-point Likert scale was used (from 1 = very low use/usefulness to 7 = very high use/usefulness). Open questions aimed to explore the motivations for the use or non-use of the BSC, the benefits achieved through the use, the intention to use the BSC in the future, the existing use of a traditional performance measurement system.
Completing the questionnaire was expected to take from 10 to 15 minutes.
The survey was conducted during the first half of 2019. 290 companies were first contacted, 98 returned complete and usable questionnaires. The response rate is 33.7%, which is in line with other surveys (Cescon et al., 2019). Respondents were mainly CFO or accountants.
The sample was randomly selected using a non-proportional quota sampling scheme aimed at selecting a percentage of respondents shared equally in consideration of stratification variables considered significant in influencing answers. This method is a non-probabilistic analogue of stratified random sampling. The stratification variable used was the industry. Four main industries were chosen using the statistical classification of economic activities in the European Community, abbreviated as NACE (see table 1). Drawing from Italian National Institute of Statistics (ISTAT), we found proportion among the four categories (agriculture 1.5%; information and communication activities 5.6%; manufacturing 25%, wholesale and retail trade 68%).

Findings

The Use of the Balanced Scorecard

The descriptive statistics on the responding companies are presented in table 1. In terms of industry, 6.1% of the companies included in the sample operate in the agricultural industry, 13.3% provide support service activities, 49.0% are manufacturing companies, 31.6% operate in the wholesale and retail trade. With respect to the company size, which is measured considering the number of employees, 46.9% of surveyed companies are small companies (0-100 employees), 22.5% are medium companies (101-500 employees), and 30.6% are large (more than 500 employees).
The survey has revealed that 35.7% of the companies use the BSC.

Table 1
Descriptive statistics

	n.	%	Mean (SD)	Median
Companies	98			
Size (nr. of employees)				
0-100	46	46.9%		
101-500	22	22.5%		
500+	30	30.6%		
Industry				
Agriculture	6	6.1%		
Support service activities	13	13.3%		
Manufacturing	48	49.0%		
Wholesale and retail trade	31	31.6%		
BSC Use				
Yes	35	35.7%		
No	63	64.3%		
Level of BSC use [0-7]			4.10 (1.5)	4
BSC usefulness [0-7]			5.43 (1.5)	6
Difference level of use vs usefulness [-3–6]			1.78 (1.7)	2

The level of BSC use, which refers to the intensity and not to the frequency of use, shows an average score equal to 4.10, which is near to the midpoint of the measurement scale. This is in line with the results from Cravens and Guilding (2001) in the U.S., while Cescon et al. (2019) in Italy report a higher level of use. Figure 1 depicts the distribution of companies using the BSC based on score assigned to the level of use.

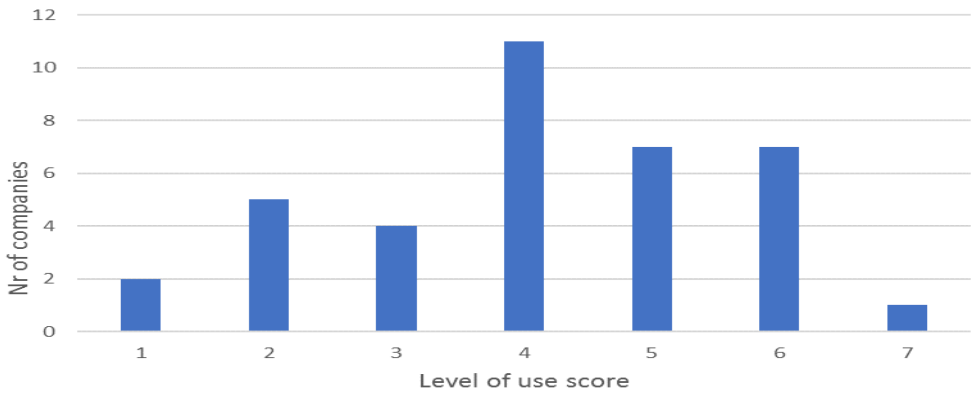

Figure 1: Distribution of companies by level of BSC use

Further, users were required to indicate, on a Likert scale ranging from 1 (not at all) to (extensively), the perceived usefulness they attributed to the BSC. The distribution of the answers is displayed in Figure 2. In comparison to the moderate levels of use, companies stated a higher perceived usefulness of the BSC, with 60% of the respondents delivering positive and extremely positive responses (with a score equal to 6 or 7).

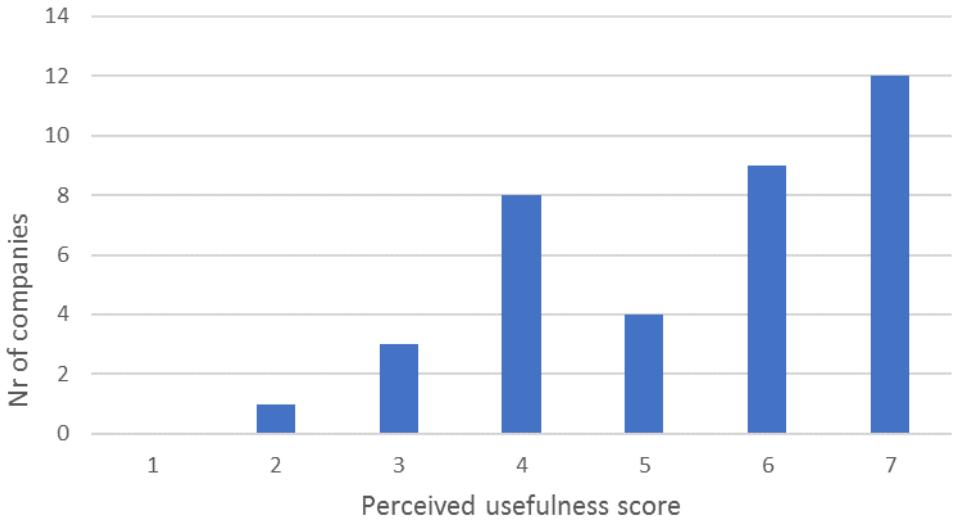

Figure 2: Distribution of companies by perceived usefulness of the BSC

When asked about the main motivations for using the BSC in their business processes, the surveyed companies have provided responses that are reported as follows: to align objectives and strategies; to improve the value of the internal processes, share objectives and align them in the short and long term; monitor different areas of the organization; to improve the comprehension of overall performance; to focus on a clearer image of the entire organization; to improve relations with customers; to facilitate strategy alignment through all the organizational levels; to involve and motivate employees at the different organizational level. The users have documented the following benefits deriving from the BSC use: a concise strategic overview of the business areas involved; general improvement in business communication; general improvement in internal processes; improved alignment of

objectives; greater information flow about business activities; more effective communication and understanding of business objectives and strategies at every organizational level; enhanced view of overall company performance.

Generally, these responses broadly reflect what the BSC literature posits about the benefits deriving from, and motivations for, its use as a strategic management tool, in terms of objectives alignment and business processes and communication improvements throughout the organization.

On the other hand, non-users have supplied the following motivations for their lack of interest towards the use of the BSC: the BSC is inapplicable to company-specific situation and context; companies were satisfied with the traditional performance assessment methods they employed; company performance was assessed through budget analysis, business consultants and other management control tools; companies felt that a top-down consolidated traditional management control system delivering a reliable overview of essential data and trends was sufficient; companies regarded the BSC as unnecessary due to their small size; the BSC was unsuitable for the product of the company; companies had never heard about the BSC and were fully satisfied with the financial results associated with traditional approaches; companies felt that the resources and time required by the BSC implementation were unjustified; it may be difficult to implement such a complex tool in a small company.

To summarize, several companies do not perceive any usefulness regarding the BSC and, especially the small companies included in the sample, emphasize costs and difficulties related to the implementation.

However, among non-users, most of the companies have informed that they might consider the adoption of the BSC in the future. Three of them were waiting for the recommendation of their business consultant at the time of the survey, other two were dependent on the decision of parent company managers, all the others have not supplied any further insight about their forward-looking intention.

Finally, more than 60% of the respondents have indicated the use of a performance measurement system among the following: monitoring dashboard and general accounting; performance metrics and data mining; business plan and provisional budgets divided into monthly budgets; financial statement ratio analysis; EBITDA and contribution margin; productivity and other non-financial measures; strategic management accounting with internal and external control measures; performance improvement plan by workday; key performance indicators related to budget and standard system; critical success factors for strategic control; management accounting and cash flow analysis; ISO 9001 performance evaluation.

The Influence of Contingency Factors on the Balanced Scorecard Use

Crosstabs and statistical test of dependence were conducted to assess the statistically significance of the association between company size or industry and BSC use (table 2).

Chi squared (χ^2) test and Cramer's V were used to test the association. They are symmetric indicators of association between characters. χ^2 is a non-parametric (distribution free) tool designed to analyze group differences when the dependent variable is measured at a nominal level. It is based on contingencies, or rather the differences between the joint absolute frequencies actually detected and the joint absolute frequencies that would be obtained in the case of independence between the characters. This index takes only non-negative values and is 0 if and only if the two characters are independent. The Cramer's V is strength test used

to test the data when a significant Chi-square result has been obtained. It takes values between 0 and 1, it is 0 if and only if there is independence between the characters, it is 1 if and only if there is perfect connection, or at least one of the two characters depends perfectly on the other.

Then, Kendall's tau-b were used to inform about how much concordant (or discordant) are two characters (e.g., size and BSC use), therefore it detects, besides the degree of the association, also its direction; in other words, it measures the extent of the tendency of the two characters to associate in such a way that a higher order mode of a character corresponds to higher order mode than the other character, or vice versa.

The size characteristics prove to be associated (χ^2 = 6.1, p-value = 0.04) with BSC score and further the association has a significant direction (Kendall's tau-b = 0.273, p-value = 0.01). The large companies have a higher BSC adoption (56.6% vs. total usage rate of 35.7%), while companies under 100 employees have lower use (19.6%).

As table 2 shows, there are significant differences among sectors (χ^2 = 13.3, p-value = 0.005) with manufacturing companies the most prone to use BSC with 56.3%, followed by support service activities companies with only 30.8%. Agriculture and wholesale and retail trade are under 16.7% of use. The manufacturing sector seems to have a higher awareness of BSC tool.

Table 2
Summary statistics and associations among contingency factors and BSC use

		BSC use (No/Yes)		Mean level of use (SD)	Mean perceived usefulness (SD)	Difference level of use vs. perceived usefulness
Sample = 98 companies		**No**	**Yes**			
Industry	Agriculture	83.3% (5)	16.7% (1)	4.0	6.0	2.0
	Support service activities	69.2% (9)	30.8% (4)	5.0 (2.6)	5.3 (1.5)	0.3 (2.0)
	Manufacturing	43.7% (21)	56.3% (27)	3.8 (1.5)	5.8 (1.3)	1.9 (2.0)
	Wholesale and retail trade	90.3% (28)	9.6% (3)	5.0 (1.4)	4.5 (0.7)	2.0 (2.8)
	χ^2	13.0**				
	Cramer's V	0.420**				
	Kendall's tau-b	-0.134				
	F-Test			0.62	0.71	0.55
Size	Small	80.4% (37)	19.6% (9)	3.2 (2.1)	5.9 (0.9)	2.8 (2.3)
	Medium	59.1% (13)	40.9% (9)	4.7 (1.5)	5.5 (1.4)	1.2 (0.8)

	Large	43.3% (13)	56.6% (17)	4.3 (1.2)	5.6 (1.4)	1.3 (1.9)
	χ^2	6.123*				
	Cramer's V	0.228*				
	Kendall's tau-b	0.273**				
	F-test			1.6	0.159	1.8
Total		64.3% (63)	35.7% (35)	4.1 (1.6)	5.7 (1.3)	1.78 (2.0)

Significance level: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

To avoid the risk of bias the interaction between industry and size were analysed (table 3). It is interesting to note that for companies under 100 employees the difference among sectors is still statistically significant ($\chi^2 = 9.4$, p-value = 0.02). Manufacturing is the industry where BSC use is more widespread even analysing only small companies (50% vs. usage rate of 28.2% among small companies). Considering companies over 100 employees, the association between sector and BSC use is no more statistically significant. Interestingly, every sector except wholesale and retail trade have a percentage of BSC use of 50% or higher. Therefore, the size tends to have an important role in affecting the BSC use, whereas the manufacturing sector has the greater use of BSC regardless of company size. On the other hand, wholesale and retail has the lower use.

Regarding the use and importance of BSC in adopting companies, the results reveal no difference among companies' size or sectors. On average, companies have stated higher perceived usefulness of the BSC than the level of actual use.

Table 3

Interactions between contingency factors and association with BSC use

Size	**Industry**	**BSC use (No/Yes)**	
		No	**Yes**
Small firms	Agriculture	100.0% (5)	0.0% (0)
	Support service activities	77.7% (7)	22.2% (2)
	Manufacturing	50.0% (9)	50.0% (9)
	Wholesale and retail trade	100% (18)	0.0% (0)
	χ^2	9.4*	
Medium and large firms	Agriculture	0.0% (0)	100.0% (1)
	Support service activities	50.0% (2)	50.0% (2)
	Manufacturing	40.0% (12)	60.0% (18)

Wholesale and retail trade	76.9% (10)	23.1% (3)
χ^2	6.8	

Conclusions

Although the BSC is one of the most influential concepts in the field of management control and performance management and measurement (Perkins et al., 2014), the results of the study are consistent with previous research works showing a relatively low use of the BSC. Even if it was first introduced over a quarter of a century ago, it is still in its early stages of application in Northeast Italy, reflecting the same tendency previously observed in other Country-wide studies (Bubbio, 2004; Cinquini & Tenucci, 2010). The percentage of companies adopting the BSC in this survey is 35.7%, which, while not particularly negative, is lower than in other developed Countries, and even where it has been implemented, the BSC is admittedly underused. Firms using it, on average, affirm that the usage is lower than the perceived usefulness of the instrument, showing the awareness of BSC. Motivations for the BSC adoption mostly relate to the possibility it provides to translate strategy into operational terms, and ensuring a greater alignment of the objectives, activities, competencies and communication of an organization. On the other hand, firms that do not use the BSC have provided a considerable variety of reasons behind their choice, going from complete ignorance of its existence to the conviction that the instrument is either too complex or unsuitable, considering the size of their company.

The data generally show that the bigger the size of the companies the wider is the BSC use, supporting H1. Despite the BSC is potentially suitable for use by all types and sizes of companies, the results confirmed the previous empirical literature that showed that the BSC usage is strongly biased towards larger companies (Machado, 2013; Giannopoulos et al., 2013; 2GC, 2019). From the present analysis, a greater diffidence towards the use of the BSC has emerged among the smaller companies, which indicate that the BSC could be perceived as an unnecessary instrument and a complication in their business operations. Generally, established SMEs have core competencies, capabilities and routines that might discourage the exploration of different managerial practices (Malagueño et al., 2018). However, this diffidence manifests in every industry sector except in the manufacturing, where also small firms are prone to adopt the BSC.

The highest and statistically significant level of implementation has been observed in the manufacturing industry, where around 56% of the respondents have adopted the BSC. Even in manufacturing small companies the BSC use is high (50%). The BSC is systematically underused in the wholesale and retail trade industry, consistently with the study of Speckbacher et al. (2003). Generally, data reveal that the BSC use is not independent of the industry, and H2 is therefore rejected.

Further, through the qualitative analysis the study shows that, for non-user companies, the lack of interest in the use of the BSC is due to several possible explanations, among which the difficulties in its construction and application are not the most common reason. Thus, H3 is not supported.

A positive consideration is that only eleven of the responding companies have never heard of the BSC and that the majority of those that are not using it do not exclude the possibility of a future implementation, often indicating that they expect to see a more widespread use of this important device in the future. This seems to contrast with the relatively short life cycle of

most strategic management tools and concepts, that have been widely discussed in academic research but have had a low level of adoption across companies and negligible impact on managerial discourse and practice (Nixon & Burns, 2012).

The study contributes to the body of literature on the BSC in two ways. First, providing new insights on factors influencing its use. Focusing on company industry as a contextual factor, the study extends contingency-based hypotheses regarding the antecedents of BSC use. Secondly, the study highlights possible benefits and drawbacks of its application in a set of companies with different sizes and operating in different industries. The contextual factors, together with the business strategy, should be carefully considered in the process of designing and implementing of the BSC, which is inherently valuable in the extent it stimulates companies to "think of the linkages between performance measurement and their visions and strategies" (Anthony et al., 2014, p. 401). A contingency-based approach suggests that the BSC template should be tailored to the specific characteristics of a business to increase benefits and minimize drawbacks. On the other hand, companies that do not use the BSC have emphasized perceived difficulties related to its implementation, and respondents seem to be aware of the costs connected to the use of the BSC. Actually, the cost may be a concern in the development or the review of a BSC. The cost may be minimal for a simple BSC with a low number of performance measures that are already in use. Differently, the collection of information needed to develop new performance measures and monitor additional performance areas may be expensive (Merchant & Stede, 2017). In this sense, the BSC implementation should be supported by adequate information systems capabilities.

Some limitations of the present study should be considered. First, due to a response rate of 33.7%, the total sample size is small and there might be the risk of self-selection bias with firms with higher awareness on BSC topic more disposed to answer. Secondly, we used a non-proportional quota sampling scheme with the aim of sampling the same proportion of firms for each sector as in actual population. For agriculture and service industries the proportion is almost appropriate, while manufacturing companies are overrepresented and wholesale undersized. Accordingly, manufacturing firms tend to have higher BSC use and wholesale the lower. The presence of this limitations means that the BSC use may be generally overestimated in the survey.

Even though this study has limitations, the main results have potential implications for future research, in particular for scholars willing to test differences in BSC use among different industries and dig deeper into benefits and drawbacks of its use.

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