

A data-driven analysis of the current debate on the linkages between performance and strategy studies¹

Castellano N.G.², Corsi K.³, Bartolini M.⁴, Bernini F.⁵, Cardoni A.⁶, Coller G.⁷, Fasone V.⁸, Fornaciari L.⁹

Abstract

This paper intends to focus on the attention dedicated by scholars to the relations between Performance Management and Measurement (PMM) and Strategy. These relations are crucial to build a comprehensive body of knowledge about a complex and multifaceted phenomenon which attracts scholars pertaining to different management disciplines.

The results obtained through descriptive statistics and a text-mining analysis on the articles published in the most influential international “business, management and accounting” journals provide evidence that integration of competences and methodologies is needed to support further research in the field, in order to shed lights about the connections between topics or key-concepts that seem to represent an exclusive heritage of single management disciplines.

Keywords: Performance Management, Performance Measurement, Strategy, Top-ranked Journals, Literature Review, Text Mining.

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² University of Macerata - Department of Economics and Law - nicola.castellano@unimc.it (corresponding author).

³ University of Sassari - Department of Economics and Business Administration.

⁴ University of Bologna, Forlì Campus - Department of Management Studies.

⁵ University of Pisa - Department of Economics and Management.

⁶ University of Perugia - Department of Economics.

⁷ University of Trento - Department of Economics and Management.

⁸ Kore University of Enna - Department of Economics and Law.

⁹ University of Parma - Department of Economics.

1. Introduction

Over the last decades a relevant body of literature focused on the relationship between Management Control Systems (MCS) and strategy, stating a pro-active (Hopwood, 1987; Dent, 1990) and interactive (Simons, 1994) role of MCS. Langfield Smith (1997) points out that the findings provided by the MCS-strategy streams of research remain ambiguous and sometimes contradictory and inaugurated a new debate about the relationship between strategy, control and performance (Mundy, 2015). In particular, increasing attention has been paid to Performance Measurement Systems (PMSs) and their support to strategy implementation and (re)formulation, concluding that PMSs are particularly instrumental in this regard (Gimbert *et al.*, 2010) and strategic PMSs still represent a key research stream and an extensive literature focuses on them.

This special focus of the literature on the linkages between strategy and Performance Measurement and Management (PMM) prompted the aim of this paper, i.e. an enrichment of the understanding of the current scientific debate, on the basis of the most influential international “business, management and accounting” journals. In particular, the paper explores the relevance of the literature on PMM-strategy linkages over the period 2013-2016 and the main research streams, as well as the research methods used. Through the discussion of previous issues, our study also provides academics with useful insights to orient their research strategies and consequent publications.

In particular, our data-analysis (through descriptive statistics and a text-mining analysis) highlights that the strategy and PMM linkage is mainly debated in papers focused on organization and human resource management issues, in which the qualitative methods (single and multiple case studies) prevail. In the future the strategy-PMM linkage could be covered more fully by studies on business administration, integrating several competences and methodologies.

The remainder of this paper is structured as follows. While section 2 presents the theoretical framework and the connected research questions developed, section 3 describes the methodology aspects. Data analysis and results are reported in section 4 and, finally, section 5 concludes, highlighting the main results and limitations of the study, together with remarks for future research.

2. Theoretical Framework and Research Questions

Traditionally, the relationship between MCS and strategy has been viewed as passive one, suggesting that the MCS is an outcome of organizational strategy (Anthony, 1965). Organizations are viewed as goal-oriented entities and control is exerted to utilise resources effectively in pursuing those goals by influencing behaviour amidst environmental change. Control systems were largely concerned with feedback and feedforward processes and emphasis was given in minimizing the gap between actual results versus targets. Financial measures were largely employed as performance indicators, to set either the individual and the overall organization's targets.

In the following years there have been calls for wider views of management control. Johnson and Kaplan (1987) described the limitations arising when management control systems rely exclusively on financial measures and argued for a focus on multi-dimension and operation-based measurement systems. Their considerations were the premises upon which the Balanced Scorecard (Kaplan and Norton, 1992) and other similar models aimed to accurately represent the linkages between strategy and operation initiatives were built.

In the same period Hopwood (1987) and Dent (1990), however, speculated that the MCS might play a pro-active role in influencing strategy. Hopwood (1987) suggested that management controls implemented for a particular reason could signal new potential and aid in the development of new directions. Even Simons (1994) showed how formal control systems, if used within interactive mechanisms, could overcome organizational inertia and drive managers behaviors also when emergent strategies were implemented. The system helped to communicate the strategic agenda and focus the managers attention on the uncertainties arising during the accomplishment of a new strategy.

In opposition Macintosh (1994) recognized that the association between MCS and strategy could be more than a simple uni-directional relationship. Moreover Langfield Smith (1997) pointed out that the findings provided within the streams of research related to MCS and strategy remained ambiguous and sometimes contradictory and inaugurated a new debate centred on a more complex relationship between three perspectives: strategy, control and performance (Mundy, 2015).

The first term of the relation suggests the existence of the traditional impact produced by strategy on MCS and performance: $\text{strategy} \Rightarrow \text{MCS} \Rightarrow \text{performance}$. Particularly, Bouwens and Abernethy (2000) examine the relation between strategy and MCS and propose a theoretical model to explain how and why this relation exists. They develop a theoretical argument concerning the inter-relations among customization, interdependence and Management Accounting System (MAS), being particularly interested in assessing whether the relation between customization and MAS is a direct one or whether the relation operates via interdependence. The results indicated that customization affected MAS via interdependence, rather than directly.

The second approach is based on a counter posed perspective (Henri, 2006; Marginson, 2002): strategy and performance are influenced by the MCS through the paradigm: $\text{MCS} \Rightarrow \text{strategy} \Rightarrow \text{performance}$. Specifically, Marginson (2002) discusses the effects that the design and the use of MCS produce on the development of new ideas and initiatives influencing strategic decisions, administrative controls and key performance indicators.

In a third approach the interacting effect: $\text{strategy} \Leftrightarrow \text{MCS} \Rightarrow \text{performance}$ is discussed. Particularly Kober *et al.* (2007) suggest that there may be a two-way relationship between strategy and management control, while Gerdin *et al.* (2004) suggest that this interaction affects performance. In the same stream Naranjo-Gil (2004) adopts a contingency framework to study how the relationship between prospector strategy and performance would be moderated by the sophisticated design of MCS. According to the previous argument he explores the contingency fit between MSC, strategy and performance, using a mediating and moderating model.

In the area of MCS, since the mid-1980s, increasing attention has been paid to the study of PMSs and strategic PMSs (SPMSs), as tools to enhance an effective strategy implementation. Consequently, most studies focus on the role of SPMSs regarding the translation of strategy into action, and strategy (re)formulation, concluding that SPMSs are particularly instrumental in this regard (Gimbert *et al.*, 2010). Nowadays, SPMSs represent a key research stream and an extensive literature focuses on them, from a theoretical and a practical point of view.

Moving from this special focus on the linkages between PMM and strategy and given the plethora of studies regarding them (e.g. Chapman 2005; Davila 2005; Ittner and Larcker 2005), a need to better understand how they are evolving has arisen. Accordingly, this paper aims to review articles published on the most influential international “business, management and accounting” journals, and offers an overview about the state of the research on the PMM-strategy linkages, highlighting both established issues and emerging research streams in the current debate. In doing so, we formulate the following core research questions:

- RQ 1. How the scientific debate on PMM-strategy linkages is considered by the recent literature and particularly by the most influential international “business, management and accounting” journals over the period 2013-2016?
- RQ 2. What are the main research streams in the current scientific debate on the PMM-strategy linkages?

Answering the above mentioned research questions, our paper makes a contribution to the literature by enriching the understanding of the current debate on the linkages between PMM and strategy. In particular the main topics related to specific aspects of strategy generally investigated in the PMM studies’ perspective (such as internalization, human relation management, corporate governance, ecc.) are highlighted, through a qualitative analysis. Moreover, a text mining analysis is performed to identify the *hidden* regularities among the PMM-strategy linkages, detecting the emerging network of scientific topics connected to the PMM and strategy field of studies.

The current debate is also characterized by the adoption of an array of qualitative and quantitative research methods, such as case studies, surveys, quasi-experimental and experimental research; moreover, several literature reviews and theoretical papers have been published. Through the following additional research question, then, our paper also explores the following methodologic issue:

RQ 3. What are the research methods used by researchers, in respect of the most relevant literature on the PMM-strategy linkages?

Through the discussion of the three research questions presented above, our paper as additional outcome contributes to inform academics about the key issues in the current debate on the PMM-strategy linkages, capturing the elements that characterize its evolution and emerging themes, as well as the most successful and valuable research methods and journals' focus. The results may be helpful for scholars to intercept publication opportunities and, then to orient future research activity and publication efforts and strategies.

3. Methodology

The review process was based on the following strategy. For the identification of the relevant literature, papers were selected following the protocol suggested by Kitchenham (2004), in order to conduct a search in a comprehensive way. The selection procedure, referring to the sample identification (see Table 1), was also guided by the review work in Grégoire et al. (2011).

Criteria	Rationales
1) Publication appeared on the most influential international “business, management and accounting” journals indexed in the “AIDEA 2015 Journal Rating”.	This is done to narrow our search results to articles published in journal that can claim to have had a sufficient impact on academic research.
2) Publication in a peer-reviewed academic journal with a declared focus on strategic management and performance measurement.	This is done to better focus the search on the topic and aims of this specific work.
3) Publication between 2013 and January 2016.	This is done to focus the research on the most recent scientific debate.
4) Use of the following combination of keywords in the article's title, abstract and/or keywords: “strateg*” and “performance”.	This is done to reduce discretionary interpretative biases during the selection of possible relevant works.
5) Publication as a full-length journal article or research note	This is done to follow and share the approach proposed by Busenitz et al. (2013).

Table 1 – Sampling criteria

According to the previous sampling criteria, as first, the search was undertaken on the most influential international “business, management and accounting” journals listed in the “Journal Rating AIDEA 2015” (i.e. the ranking provided by the Italian Academy of Business Administration and

Management). Second, we searched for journals with an explicit focus on strategic management and performance measurement, as declared in their aim and scope. The review spans articles published between 2013 and January 2016 (including online first articles) and was carried out by taking into account the 38 journals in appendix 1.

Most of these papers were widely available, especially in electronic format, so the content could easily be searched through an examination of the keywords and abstracts; well-known search engines have been used (e.g. ISI, WebScience, Scopus, Google Scholar), yet, unpublished manuscripts and working papers have not been included. During the selection process, authors examined the articles basing on the titles, keywords and abstracts search. In our case, those were “strateg*” and “performance” in order to reduce subjective interpretation bias. For ensuring that the papers incorporated the target concepts, we reviewed the theoretical sections of the studies. This criterion is consistent with Coviello and Jones (2004).

The categories used in this work emerged during the content analysis process and were also developed in line with researchers’ reflections and questions (Esterberg, 2002). The same were continuously compared in order to connect the proposed concepts (Esterberg, 2002).

It should be noted that the review covers only articles published in journals, and does not extend to a systematic search of books or book chapters. Despite the discretionary choice, we recognize it as one that may have caused some influential contribution to be overlooked. Nevertheless, we consider the delimitation is arguable on the basis of the quality of review processes inherent in journals and on the basis of accessibility of the papers. Totally, we achieved to collect 220 publications.

4. Data analysis

4.1 Descriptive statistics

In order to answer our RQ 1, about the way PMM-strategy linkages are discussed in the literature over the period 2013-2016, we carried out some descriptive statistics on the sample of collected papers summarized in Table 2. At least one article corresponding to our selection criteria was published in 33 above the 38 selected journals, with an average of 5.79 articles published per journal.

# Papers	# Journals	% Journals	% Papers	Authors	Papers	%	Keywords	Times	%
0	5	13.2%	0.0%	1	31	14.1%	*Performance*	127	15.60%
1	4	10.5%	1.8%	2	80	36.4%	*Strateg*	59	7.2%
2	4	10.5%	3.6%	3	79	35.9%	Other	629	77.20%
3	3	7.9%	4.1%	4	25	11.4%	Tot.	815	100.00%
4	4	10.5%	7.3%	5+	5	2.3%			
5	6	15.8%	13.6%	Tot.	220	100.0%			
6	3	7.9%	8.2%						
7	1	2.6%	3.2%						
9	2	5.3%	8.2%						
11	1	2.6%	5.0%						
14	1	2.6%	6.4%						
16	1	2.6%	7.3%						
18	1	2.6%	8.2%						
19	1	2.6%	8.6%						
32	1	2.6%	14.5%						
Tot.	38	100.0%	100.0%						

Year	Papers	%
2013	81	36.8%
2014	58	26.4%
2015	71	32.3%
2016	10	4.5%
Tot.	220	100.0%

Table 2 - Descriptive statistics (data collected on February, 1st 2016)

It's worth noting that approximately the 50% of the scientific publications (110) included in the sample are concentrated on 6 journals: 5 of them published from 11 to 19 articles, while the remaining one (Management Decisions) published 32 articles (14.5% of the whole sample).

As far as concerns the number of authors, the vast majority of papers (72.3%) is written by two or three authors, with only 14.1% single name papers and 13.7% papers with 4 authors or more. The number of paper yearly published from 2013 to 2015 are 81 (36.8%), 58 (26.4%) and 71 (32.3%) respectively. The sample also includes 10 papers published in 2016, but the number is not significant because, it is obviously incomplete.

The selection criteria are present in 186 above 815 total keywords (22.8%). In particular, "performance" (as a single word or in combination with other words) is used in 127 keywords (15.6%) and "strateg*" (as single words or in combination with other words) recur 59 times (7.2%).

As far as concerns the research methodology (see Table 5), a quantitative approach is adopted in the 58.2% of papers; theoretical contributions account for 20.5%; while case studies (single or multiple) are employed in the 13.2% of papers; experimental study 4.1%, literature reviews 3.2% and survey 2.7%.

4.2. Classification Criteria

The selected papers have been grouped according to the general scientific topics characterizing the field of study embracing the relations between strategies and PMM (see section 2), in order to give a qualitative description about the most relevant research streams characterizing the current scientific debate on PMM and strategy. The categories represent the disciplines in management studies which are involved in the research about PMM and strategy. They have been identified by reading title, abstract and keywords of the papers selected.

The articles' classification within predetermined categories of topics is propaedeutic for the subsequent analyses. The classification procedure has been accomplished according to the categories listed in Table 3.

Topic	Description / Focus
I	Internationalization strategies, cross-border M&A, exports, companies and multinational groups, international collaboration and cultural integration.
BS	Business strategies issues: strategy's formulation, implementation and valuation.
HRM	Human resources' management: social and cultural aspects of the interaction between employees or performances related to labor organization.
IA	Intangible assets: the role of the invisible key-resources and/or their relations with strategies and the performances.
ORG	Business organization studies related to strategy and/or performances.
N	Networks: strategies related to groups, corporate networks, alliances and inter-company collaboration.
L	Leaders: characteristics of the policy makers and leadership.
CG	Corporate Governance: links between performance, strategy and the characteristics of the ownership structure and the board of directors.
S	Sustainability: strategies-PMMs linkages, in the perspective of sustainability, ethics, environment and corporate social responsibility.
MCS	Performances and Management Control System(s) issues.
M	Marketing: strategies-PMM linkages, observed with reference to the four "Ps" of marketing mix perspective (Product, Price, Promotion, Place).
O	Other: residual category

Table 3 - Selected topics in the strategy-PMM linkages' perspective

4.3. Analysis concerning the distribution of the topics per year

Our analysis begins by observing the distribution of the sampled articles, among the scientific topics (see Table 4).

Topic	I	BS	HRM	IA	ORG	N	L	CG	S	MCS	M	O	Tot
# Journals	29	26	15	21	34	13	14	9	18	27	8	6	220
% Journals	13.18	11.82	6.82	9.55	15.45	5.91	6.36	4.09	8.18	12.27	3.64	2.73	100.00

SCS = Single Case Study; MCS = Multiple Case Study; QUA = Quantitative;
THE = Theoretical; EXP = Experimental; LIT = Literature Review; SUR = Survey

Table 4 - Topic Analysis

A relevant number of articles address organizational issues (15.45%), whose number of publications is rather growing over time. In addition, in early 2016, we already find four published papers belonging to the category “Business organizational studies”, which is in effect a wide research field.

In order of relevance publications may be referred to: "internationalization" (13.18%), "management control systems" (12.27%) and “business strategy” (11.82%). Besides, the business strategy’s issue shows a downward trend over time.

The less investigated topics are those relating to marketing (3.64%) and corporate governance (4.09%). However, CG issues show an upward trend over the three years.

Considering the RQ 2, this first analysis suggests that the selected journals mainly concern with organizational studies, which is a wide research field. Looking at the other topics, scholars are more interested in internationalization strategies and performance control systems. We can suppose that the increased interest in these topics is due, among other things, to the recent changes of the economic context. In particular, the economic and financial crisis may have led scholars to analyze the possibilities to react by implementing internationalization strategies, eventually to be implemented in emerging countries, or to pay more attention to the improvement of performance and to the implementation of control tools.

4.4. A text mining approach to the literature review¹⁰

To better explore RQ 2 and, in detail, the emerging network of scientific topics connected to the PMM and strategy field of studies, a text mining analysis has been performed. In this case the topics are different from those used in the previous section, since they are identified by using a discovery approach on the data.

¹⁰ The authors are grateful to Roberto Del Gobbo (PhD – University of Macerata) who supported the analysis commented in this section.

The text mining techniques can help researchers to uncover hidden regularities lying among large sets of textual data which could be helpful for the description of the most relevant topics characterizing the field of studies of performance management/measurement and strategy.

The results could be particularly meaningful to understand to appraise how the several concepts characterizing the research on PMM and Strategy and developed within different disciplines may be integrated into a unique body of knowledge.

In this section we describe the creation of a co-occurrences network (Fruchterman and Reingold, 1991), which allow to describe the relationships emerging between the most recurring keywords. The analysis has been performed with support of KHCoder software. The keywords recurring with higher % frequencies in the abstracts of the selected papers have been employed to create a co-occurrence network (see figure 1). Appendix 2 exhibits the complete list of the keywords with the related % frequencies.

The network in figure 1 is composed by nodes connected through lines. The formers represent the keywords, whereas the lines put in evidence the logic connections between the keywords as they occur in the abstracts of the selected papers. The bolder are the lines, the stronger and more frequent are the co-occurrences between concepts. The length of lines and the proximity of nodes are created by the software arbitrarily and do not express the proximity of the conceptual association or the strength of the co-occurrence.

The “betweenness centrality” is used to assess the centrality of the concepts in the network (Freeman, 1977). The relevance of each node is measured by evaluating its presence in the connection paths between the other nodes.

In particular, the betweenness of a node X equals to the number of paths of the minimal length for all the origin-destination node combinations that include node X, normalized according to the maximum number of possible combinations.

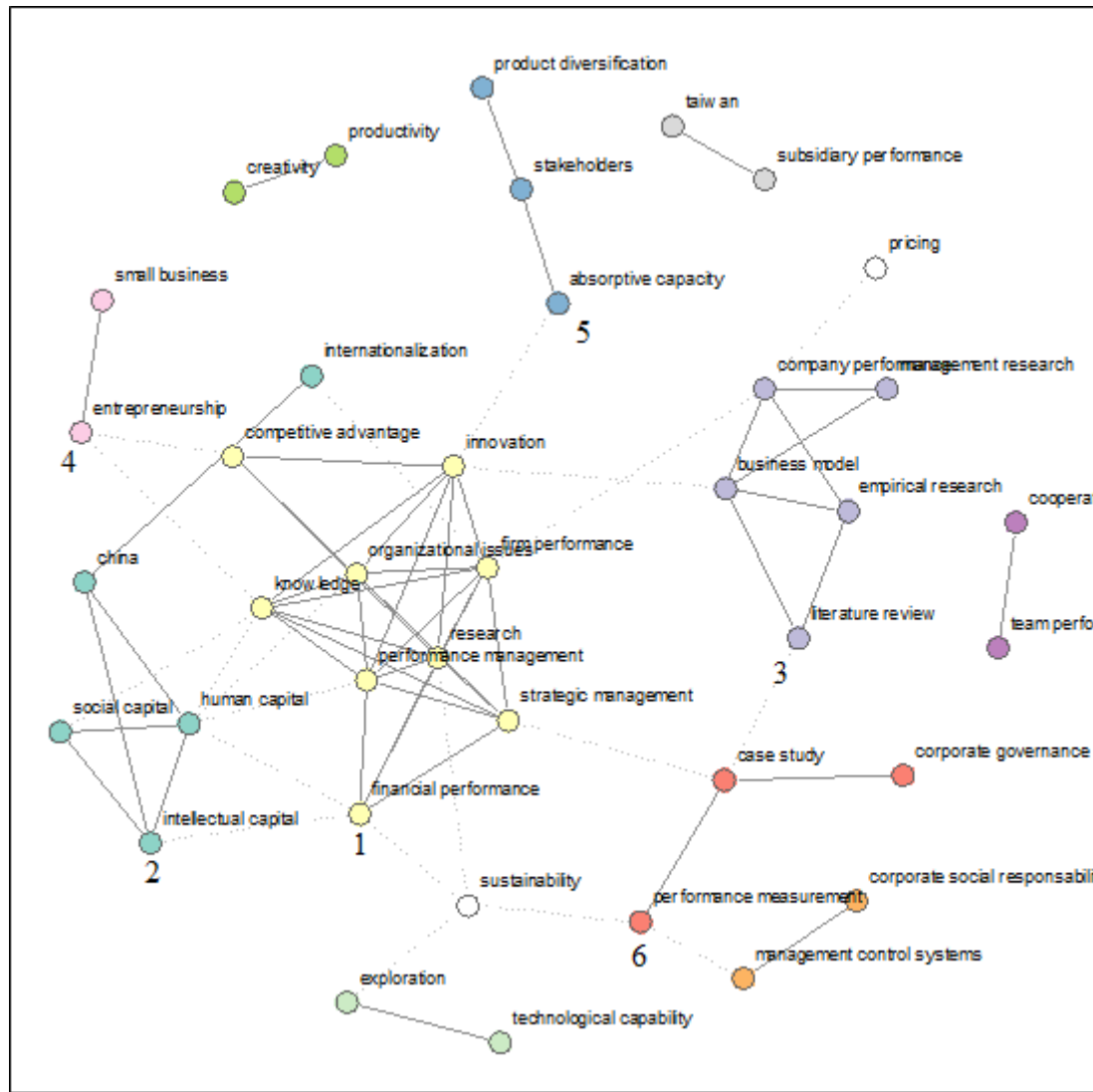


Figure 1 - Co-Occurrences Network

The elaboration process requires the following steps to be accomplished (Silchenko *et al.*, 2015):

1. the identification of all the possible combinations of couples origin-destination node;
2. the identification, for each combination in step 1, of the minimal length connection path;
3. the assessment of the number of connection paths that involve a specific node (with exclusion of all the connection paths where origin and destination are represented by the same node);
4. the calculation of the total number of connected node couples in step 3;
5. the normalization of the values obtained in step 3 and the normalization of the maximum measure obtained in step 4.

The groups of connected concepts in figure 1 provide additional insights about the several streams of research which are considered for publication on top-ranked management accounting and strategy journals.

The group 1 is the most dense. The concepts “firm performance”, “performance management”, and “financial performance” are directly connected to “strategic management”, showing then a logic proximity. Diversely, the connection between the same performance concepts and more specific strategic terms, such as “competitive advantage” and “innovation”, is an indirect one and is mediated by interdisciplinary subjects, such as “knowledge” and “organizational issues”.

The terms “competitive advantage” and “innovation”, in turn, show connections to the groups of concepts 2, 3, 4 and 5. In particular, the studies on competitive advantage, from one hand pertain to a stream of research which seem to deal in particular with “internationalization” and “China”, involving also the knowledge intangibles framework. On a second hand, the term “competitive advantage” shows a weaker connection with “entrepreneurship” and “small businesses” (group 4). Furthermore it is also connected to group 3 and 5 thanks to its proximity to the innovation concept.

Group 5 is focused on specific types of innovation and particularly on “product diversification”, and “absorptive capacity”. Group 3 is also particularly meaningful to understand the connections between performance measurement/management and strategy. In this case the node “innovation” is weakly connected to “business models” which, in turn, is connected to company performance. In this case the methodologies rather than the specific subjects seem to be connected to the nodes, showing that literature review and empirical research are recurring within the studies on business models.

Finally, the researches on “performance measurement” are connected with “strategic management” in a path conditioned by case studies and corporate governance. Weaker connections with corporate social responsibility and sustainability are also identified.

4.5. Analysis concerning the relation between topics and methods

Our RQ 3 aims at exploring the research methods used by researchers, in respect of the most relevant literature on the PMM-strategy linkages. Our analysis is based on the classification described in section

4.2, shows that the quantitative methods are the most commonly used, with a prevalence of statistical regressions (see table 5).

Topic	Method							TOT
	SCS	MCS	QUA	THE	EXP	LIT	SUR	
I	10%	0%	62%	28%	0%	0%	0%	100%
BS	12%	4%	69%	4%	4%	4%	4%	100%
HRM	0%	7%	67%	20%	7%	0%	0%	100%
IA	0%	5%	76%	19%	0%	0%	0%	100%
ORG	21%	0%	53%	12%	6%	6%	3%	100%
N	0%	15%	77%	0%	0%	0%	8%	100%
L	0%	0%	64%	14%	14%	7%	0%	100%
CG	0%	0%	78%	0%	11%	11%	0%	100%
S	11%	17%	39%	22%	0%	6%	6%	100%
MCS	15%	4%	33%	37%	4%	4%	4%	100%
M	13%	0%	50%	38%	0%	0%	0%	100%
O	0%	0%	33%	33%	17%	0%	17%	100%
#	20	9	128	41	9	7	6	220
%	9.1%	4.1%	58.2%	20.5%	4.1%	3.2%	2.7%	100%

SCS = Single Case Study; MCS = Multiple Case Study; QUA = Quantitative;
THE = Theoretical; EXP = Experimental; LIT = Literature Review; SUR = Survey

Table 5 - Topic-method analysis

Theoretical proposals seem to be relevant only within the MCS studies and generally refer to performance measurement systems frameworks. Qualitative methods (single and multiple case studies) are totally unemployed in the corporate topics of corporate governance and leader, while they are most common in the contributions focused on organization (ORG), sustainability, environment, CRS and ethics (S).

4.6. Analysis concerning the topics dealt with in the selected journals

Table 6 shows how the topics connected to PMM and strategy are considered for publication. The journals listed in table 6 are only those with a publication frequency higher than 20% on one or more topics. In addition, we intend to highlight whether particular issues are exclusively considered by specific journals and the possible associations between the scientific topics and the research methodologies. For instance the 31% of articles on BS (Business Strategy) are published on the journal Management

Decision. In the same journal also articles dealing with Intangible Assets (IA) and Network Strategies (N) are remarkably considered.

Journal	I	BS	HRM	IA	ORG	N	L	CG	S	MCS	M	O	# Art.
Academy of Management Journal	7%	19%	0%	5%	3%	8%	14%	33%	0%	4%	0%	0%	16
Accounting, Organizations and Society	3%	8%	0%	0%	6%	0%	0%	11%	22%	15%	0%	0%	14
Human Resource Management	0%	0%	27%	0%	0%	0%	7%	0%	0%	0%	0%	0%	5
Human Resource Management Review	0%	0%	20%	5%	0%	0%	0%	0%	0%	0%	0%	0%	4
Journal of Small Business Management	0%	4%	0%	10%	0%	23%	14%	0%	0%	0%	0%	17%	9
Journal of World Business	45%	0%	0%	5%	0%	0%	14%	0%	11%	0%	0%	17%	19
Management Accounting Research	0%	0%	7%	0%	9%	0%	0%	0%	22%	33%	13%	0%	18
Management Decision	3%	31%	0%	33%	18%	23%	0%	11%	17%	7%	13%	0%	32
Management Science	0%	4%	7%	5%	3%	0%	7%	11%	6%	4%	13%	33%	11
Sloan Management Review MIT	0%	0%	0%	0%	0%	8%	0%	0%	0%	4%	38%	0%	5

Table 6 - Journal with high frequency on one or more topics

The table shows that almost half (45%) of the 29 papers about the internationalization are published on the "Journal of World Business". The 34 contributions about Organization and the 14 regarding Leadership, however, are fairly distributed in the examined journals: there is not a frequency higher than 20%.

There are also journals that receive at least one-third of the selected papers about the same topic such as "Academy of Management Journal" (for papers regarding Corporate governance) and "Management Accounting Research" (for papers regarding Management Control System). The contributions dealing with Marketing are concentrated mainly in the "Sloan Management Review" (38% of these papers).

These data highlight that the relationship between PMM and strategy (variously understood) represents an extremely inter-disciplinary theme. This is confirmed by the fact that generally the journals considered rely several topics, with the exception of "Human Resource Management" and "Human Resource Management Review" which, seem to give exclusive attention to human resources strategies, as easily arguable by the journal title.

5. Conclusions

The paper intended to explore how the relations between PMM and strategy are considered by the most recent literature. Our intent is to provide academics with useful insights to orient their research strategies and consequent publications, pointing out both the main research streams in the current scientific debate, as well as the research methodology, and how they are considered for publication on the top-ranked management accounting journals.

We performed descriptive statistics and a text mining analysis on a sample of articles published between 2013 and 2016 (January) in order to find answer to three research questions.

About RQ 1 and RQ 2 our analysis shows that several papers investigate the topic of Business organization (15.45%), focusing on organizational structure, operational processes, learning process. Instead, the papers focused on Business administration mainly regard Internalization (13.18%), MCS (12.27%) and Business strategy (11.82%). The topics selected are considered for publication particularly on 6 on six above 38 selected journals. In general, the journals are concentrated on one or few of the scientific topics simultaneously, showing that publications on the theme are basically mono-discipline.

Conversely, the results provided by the text mining analysis show that a wide and multi-faceted connection of concepts pertaining to several management and organizational disciplines exists in the field of study.

For what concern the research methods (RQ 3), generally the authors tend to adopt quantitative methods. Single and multiple case studies, although not prevalent, are particularly adopted in studies dealing on Organization and Sustainability, Environment, CRS and Ethics.

The research is essentially empirical, theoretical proposals are relevant only for what concern the topic of Management Control Systems.

As limitations for the study, we have to consider that the data-set analyzed is rather small. This produce biases on the concepts considered in the analysis as relevant or recurring. Furthermore a lack of data is documented, since some of the selected journals do not require keywords in their publication format.

As general conclusion, we believe that the results obtained show that further research is needed particularly to develop literature on those connections existing between topics that actually involve scholars pertaining to single management disciplines.

Particularly arguable is the integration between organizational studies, strategic management and performance measurement. The integration should probably involve also the research methodologies, since the analysis of case studies are prevailing within organizational studies, while quantitative methods seem to be widespread in the remaining management disciplines.

References

- Anthony, R.N. (1965). *Planning and Control Systems: A framework for Analysis*. Boston, MA: Harvard Business School Press.
- Bouwens, J. and Abernethy, M.A. (2000). 'The consequences of customization on management accounting system design', *Accounting, Organization and Society*, vol.25, pp. 221-259.
- Busenitz, L. W. and Barney, J. B. (1997). Differences between entrepreneurs and managers in large organizations: biases and heuristics in strategic decision-making', *Journal of Business Venturing*, vol. 12, pp. 9–30.
- Chapman, C.S. (2005), 'Controlling strategy'. In Chapman, C. S. (Ed), *Controlling strategy: Management, accounting, and performance measurement*, Oxford University Press, New York, pp. 1-9.
- Coviello, N. and Jones, M. (2004). Methodological issues in international entrepreneurship research, *Journal of Business Venturing*, Vol. 19, pp. 485–508.
- Davila, T. (2005), 'The promise of management control systems for innovation and strategic change'. In Chapman, C. S. (Ed), *Controlling strategy: Management, accounting, and performance measurement*, Oxford University Press, New York, pp. 37-61.
- Dent, J.F. (1990). 'Strategy, organization and control: some possibilities for accounting research', *Accounting, Organization and Society*, vol. 15, pp. 3-24.
- Esterberg, K. G. (2002) *Qualitative methods in social research*. Boston: McGraw-Hill.
- Freeman, L.C. (1977). A set of measures of centrality based on betweenness. *Sociometry*, 40, (1), pp. 35-41.
- Fruchterman, T.M.J. and Reingold, E.M. (1991). Graph drawing by force-directed placement. *Software-Practice and Experience*, 21 (1, 1): 1129-1164.
- Gerdin, J. and Greve, J. (2004). 'Forms of contingency fit in management accounting research: a critical review', *Accounting, Organization and Society*, vol. 29, pp. 303-326.
- Gimbert, X., Bisbe, J. and Mendoza, X. (2010). 'The role of performance measurement systems in strategy formulation processes', *Long Range Planning*, Vol. 43, No. 4, pp. 477-497.
- Grégoire, D., Corbett, A. and McMullen, J. (2011). The cognitive perspective in entrepreneurship: an agenda for future research, *Journal of Management Studies*, Vol. 48, pp.1443–1477.
- Henri, J.G. (2006). 'Management control systems and strategy: A resource based perspective', *Accounting, Organization and Society*, vol. 31, pp.529-558.
- Hopwood, A.G. (1987). 'The archaeology of accounting systems, *Accounting, Organization and Society*, vol. 12, pp. 207-234.

- Ittner, C. D. and Larcker, D. F. (2005), 'Moving from strategic measurement to strategic data analysis'. In Chapman C. S. (Ed), *Controlling strategy: Management, accounting, and performance measurement*, Oxford University Press, New York, pp. 86-105.
- Johnson, H.T. and Kaplan, R.S., (1987). *The rise and Fall of Management Accounting*. Boston. MA, Harvard Business School Press.
- Kaplan, R.S. and Norton, D.P. (1992). The balanced scorecard - measures that drive performance. *Harvard Business Review*, January-February.
- Kitchenham, B. (2004). Procedures for Undertaking Systematic Reviews. Joint Technical Report, Keele University (TR/SE-0401) and National ICT Australia, Ltd (0400011T.1).
- Kober, R., Ng J. and Paul, B.J. (2007). 'The interrelationship between management control, mechanism and strategy', *Management Accounting Research*, vol. 18, pp. 425-452.
- Langfield Smith, K. (1997). 'Management Control System and Strategy: a critical review', *Accounting, Organization and Society*, vol. 22, 207-232.
- Macintosh, N.B. (1984). 'Management Accounting and Control Systems: An organizational and Behavioral Approach', Chichester, John Wiley and Sons.
- Marginson, D.E.W. (2002). 'Management control systems and their effects on strategy formation at middle-management levels: evidence from a U.K. organization', *Strategic Management Journal*, vol. 23, pp. 1019-1031.
- Mundy, J. (2015). 'Where has strategy gone? Time to reclaim and rethink', Presentation at Sidrea International Workshop 'Management Control and Strategy. Theoretical and Empirical Evidence', University of Perugia.
- Naranjo-Gil, D. (2004). 'The role of Sophisticated Accounting System in Strategy Management', *The international Journal of Digital Accounting Research*, vol. 4, pp. 125-144.
- Silchenko, K., Del Gobbo, R., Castellano N., Franceschetti, B.M., Tosi V. and La Verghetta M., (2015). Sorting Through Waste Management Literature: A Text Mining Approach to a Literature Review, in D. Gomezelj Omerzel; S. Laporšek, *Managing Sustainable Growth*, University of Primorska, Koper.
- Simons, R. (1994). 'How top managers use control systems as levers of strategic renewal', *Strategic Management Journal*, vol. 15, pp. 169-189.

Appendix 1 - List of Journals

1) Academy of Management Journal	20) International Journal of Management Reviews
2) Academy of Management Learning & Education	21) International Journal of Project Management
3) Academy of Management Perspectives	22) International Small Business Journal
4) Academy of Management Review	23) Journal of Economics & Management Strategy
5) Accounting, Organizations and Society	24) Journal of International Business Studies
6) Advances in Strategic Management	25) Journal of International Management
7) Asia Pacific Journal of Management	26) Journal of Management Studies
8) British Journal of Management	27) Journal of Small Business Management
9) Business & Society	28) Journal of Strategic Information Systems
10) California Management Review	29) Journal of World Business
11) Canadian Journal of Administrative Sciences	30) Long Range Planning
12) European Journal of Operational Research	31) Management Accounting Research
13) European Management Journal	32) Management Decision
14) European Management Review	33) Management Science
15) Harvard Business Review	34) Omega – International Journal of Management
16) Human Performance	35) Organizational Behaviour and Human Decision Processes
17) Human Resource Management	36) Production Planning & Control
18) Human Resource Management Journal (UK)	37) Scandinavian Journal of Management
19) Human Resource Management Review	38) Sloan Management Review MIT

Appendix 2 - Keywords occurrence frequencies

Keywords	Frequency	%	Keywords	Frequency	%
performance management	182	82,73%	team performance	4	1,82%
research	101	45,91%	#no_codes	4	1,82%
strategic management	59	26,82%	cooperation	3	1,36%
firm performance	53	24,09%	literature review	3	1,36%
organizational issues	52	23,64%	management research	3	1,36%
knowledge	35	15,91%	product diversification	3	1,36%
innovation	34	15,45%	small business	3	1,36%
financial performance	22	10,00%	subsidiary performance	3	1,36%
human capital	16	7,27%	technological capability	3	1,36%
sustainability	15	6,82%	analytic network process	2	0,91%
internationalization	14	6,36%	fdi	2	0,91%
competitive advantage	13	5,91%	leadership	2	0,91%
performance measurement	13	5,91%	outsourcing	2	0,91%
management control systems	10	4,55%	pricing	2	0,91%
case study	10	4,55%	taiwan	2	0,91%
china	9	4,09%	task performance	2	0,91%
exploration	8	3,64%	corporate culture	1	0,45%
social capital	7	3,18%	corporate governance	1	0,45%
empirical research	6	2,73%	corporate social responsibility	1	0,45%
entrepreneurship	6	2,73%	creativity	1	0,45%
business model	5	2,27%	experimental study	1	0,45%
company performance	5	2,27%	emerging markets	0	0,00%
absorptive capacity	4	1,82%	family owned business enterprises	0	0,00%
intellectual capital	4	1,82%	resource based view	0	0,00%
productivity	4	1,82%	N of Documents	220	
stakeholders	4	1,82%			

