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# MANAGEMENT LESSONS FROM ITALY: A BIBLIOMETRIC ANALYSIS OF TOP ITALIAN BASED SCHOLARS AND STUDIES PUBLISHED FROM 1985 TO 2015.

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**Abstract:** Based on three decades of data collected via Web of Science (WOS) database this paper offers a comprehensive overview of Italian managerial studies published in international journals indexed in the WOS Core Collection. This paper, taking in consideration 1,665 researches made by Italian scholars or based in the Italian context, firstly shows the most influential papers, authors, and the most relevant journals. Using a keywords co-occurrences analysis the paper shows the most relevant topics, how they are clustered together, and the relative importance in terms of number of citations. Finally, it provides a representation of keywords average novelty highlighting the past, the present, and the future trends in Italian managerial studies.

**Keywords**: Italian, management, bibliometric, literature, review, keywords, clustering, scholar, Italian studies, top journals, web of science, WOS, VOS, VOSviewer.

## 1 Introduction

The Italian management school owes its origins to Gino Zappa (Zappa, 1927) who first introduced the importance of management in the Italian thought. As pointed out by Coda (2002), Zappa was the first Italian author who explored the various functions of every firm, showing how the firm is embodied in a complex set of connections between itself and the environment in which it operates. Thus, the firm requires a separate set of functions related to its particular aspect, i.e. management and accounting. The importance of Zappa's works was highlighted by Caprara (1961) who showed how every post-war Italian study was indeed influenced by Zappa's thought.

After Gino Zappa, the Italian management school produced a consistent amount of management related studies, however, until the mid-90s the Italian knowledge base related to this topic was published almost only in books, book series and essays in the Italian language (Carmona, 2006). Most likely, the biggest limitation to the international diffusion of Italian management school was related to the language barrier that choked the global spread of it. Similar to other European schools, e.g. the French or Spanish (Wren, 2005; Carmona, 2006), this did not allow the Italian school to have a broader international recognition even though it presented innovative and groundbreaking ideas.

Since the second half of the nineties Italian management scholars have focused their attention on publishing in international scientific journals in the English language, allowing a gradual international spread of the Italian school of thoughts.

Thus, the aim of the present study is to investigate the contributions of Italian scholars or Italian-based management studies through a bibliometric analysis of the research published from 1985 to 2015. Indeed, bibliometric studies have shown their effectiveness in a broad range of fields such as management (Podsakoff et al., 2008; Dabic et al., 2014; 2015), entrepreneurship (Landström et. al 2012, Marzi et al., 2017), operations management (Hsieh & Chang, 2009) and innovation (Fagerberg et al, 2012), helping scholars to navigate the expanding universe of scientific papers. Therefore, the collected data covers three decades of research in that field (1985-2015), providing a full perspective on it.

With this paper, we aim to take a picture of the actual situation showing different data: the top journals, top papers and a keywords analysis to identify specific areas of interest. In particular, with the keyword analysis, we want to define the major topics of Italian management studies. For this

purpose, we propose a comprehensive bibliometric analysis of Italian management studies from 1985 to 2015 indexed in WOS Core Collection database.

Specifically, regarding the keyword analysis, we present three levels of detail. The first regards the keyword clusters and highlights how the topics are joining in creating research fields. The second level represents the intensity of each keyword, showing the relevance of each topic and arguments in the knowledge base taken into consideration. The third level, which is important to analyze the future directions of the Italian-based studies, examines the average novelty of the keywords on the basis of average age of their appearances on papers.

Based on this information we can trace the past, the present and the future of Italian-based scholar and Italian-based studies and give some useful insights for future trends in this field of study.

Thus, the aim of this paper is twofold. In the first part, namely paragraph two, we present the analysis of the date in order to give a snapshot of the past and the present. In the second part, based on the keyword analysis we present the major area of interest tracing the future path of the evolution of the field taken into consideration.

## 2 Literature Analysis

### 2.1 Data Gathering

The first step of the research process concerned sample selection; because of this we have selected Thomson Reuters Web of Science™ database. In particular, inside that database, we have selected Web of Science Core Collection as it offers the most valuable and high-impact collection of papers (Franceschet, 2010). The journals included in Web of Science Core Collection have met the high standards regarding impact factor and number of citations.

The indexes covered by the data gathering are: Science Citation Index Expanded, Social Sciences Citation Index, and Arts & Humanities Citation Index. These indexes containing journals that rank competitively among the most highly cited core journals in their category or categories, covering only the most highly cited, highest impact journals in each category (Leydesdorff et al., 2013).

The research query to get the preliminary set of data have been done on June, 13th 2016 with the following research terms limited to "English" as language, "Article" as document types and time span 1985-2015:

*TS=("manag*") AND (TS=("ital*") OR CU=("italy"))*

Where "TS" mean "Topic" in Advanced Research page, and "CU" means the country of the author's institution. The initial search found 52,320 results in all research areas; this was then refined by applying "Business and Economics" as the research area, resulting in 2,629 papers. Finally, a third filter was adopted by using WOS categories of "business" and "management" which resulted in a final dataset of 1,665 papers. A manual screening was operated to ensure that all journals matched the inclusion criteria. In the next sections, we present the analysis of the extracted dataset. Regarding section two, we used Microsoft Excel 2016 and Rapid Miner Studio 7.3 to operationalize the data mining algorithm (Hofmann and Klinkenberg, 2013). Data analysis of section three is done by a specific bibliometric routine that is discussed later.

## 2.2 Papers Overview

Table 1 shows years, number of papers (N.P.), and percentage variation compared to previous year (P.V.).

*Table 1 - Papers distributions among years*

| Year | N. P. | P.V. | Year | N.P. | P.V. |
|------|-------|------|------|------|------|
| 1985 | 1 | --- | 2001 | 28 | +47% |
| 1986 | 2 | +100% | 2002 | 40 | +43% |
| 1987 | 1 | -50% | 2003 | 36 | -10% |
| 1988 | 0 | -100% | 2004 | 34 | -6% |
| 1989 | 1 | +100% | 2005 | 46 | +35% |
| 1990 | 0 | -100% | 2006 | 40 | -13% |
| 1991 | 0 | 0% | 2007 | 56 | +40% |
| 1992 | 4 | +400% | 2008 | 68 | +21% |
| 1993 | 8 | +100% | 2009 | 107 | +57% |
| 1994 | 8 | 0% | 2010 | 115 | +7% |
| 1995 | 14 | +75% | 2011 | 132 | +15% |
| 1996 | 25 | +79% | 2012 | 167 | +27% |
| 1997 | 21 | -16% | 2013 | 164 | -2% |
| 1998 | 27 | +29% | 2014 | 209 | +27% |
| 1999 | 23 | -15% | 2015 | 269 | +29% |
| 2000 | 19 | -17% | **Total P.** | **1,665** | |
| | | | *NP is number of papers | | |
| | *P.V.is percentage variation compared to previous year | | | | |

A graphical illustration can help to represent the magnitude of the phenomena better. Data collected showed the following distribution among the years are shown in Figure 1.

*Figure 1 - Graphical representation of papers distributions among years*
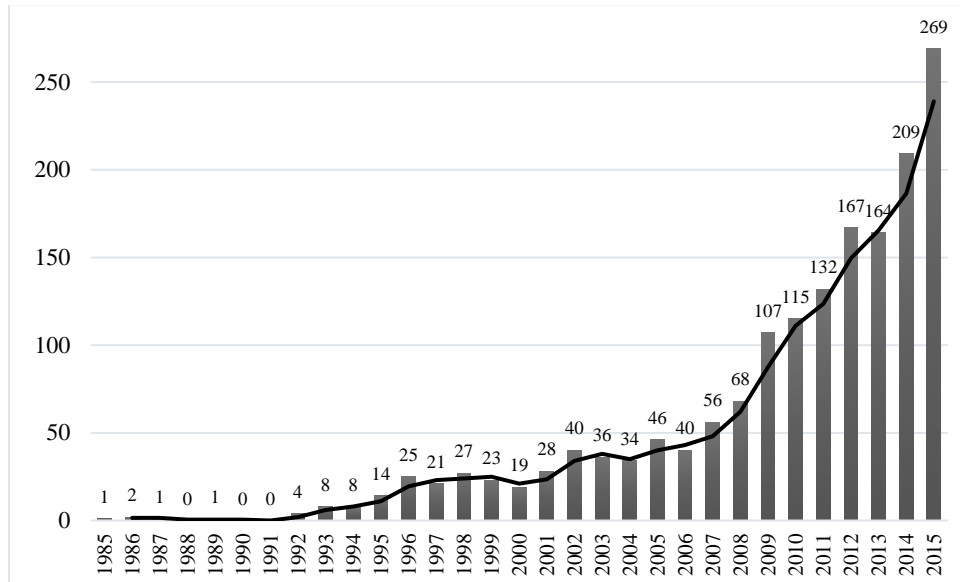


Despite the time span being set during 1985-2015, the first relevant cluster of papers appeared only in 1992. After this period, the academic interest in this field slowly grew until 2008. From Figure 1 is possible to see that this area of research then had a faster growth from 2008 to 2015 with an average of 153.87 papers per year and an average growth rate of 23% in this time span.

An insight which emerges from the dataset is probably connected with the introduction of the "Agenzia nazionale di valutazione del sistema universitario e della ricerca" (ANVUR), the Italian institution devoted to evaluating the quality of Italian research and university system (e.g. equivalent to the REF in the UK). The agency assesses the quality of processes, results, and products of teaching and research, including the technology transfer, universities and research institutions supervised by the Ministry of Education, University and Research (MIUR). ANVUR was created in 2006, and as data showed after this year, the number of scientific Italian indexed publication dramatically increases over the years since then. Data illustrate how the introduction of new rules for promotion and funding pushed Italian scholars to internationalize their scientific production.

Taking into consideration the single publications, Table 2 shows the 20 most cited papers according to WOS. TC means Times Cited and the data are updated to the day of data gathering, namely June, 13th 2016. The TC value presented in this table apparently differs by Google Scholar number of citation. As an example, the first paper on the table below by Lorenzoni

and Lipparini has a Google Scholar number of citation equal to 1493 times. However, the Google's measure takes into consideration also weak impact and not indexed publication. Web of Science Core Collection counts only citations from articles published in high quality and high-impact journals. For this study, that is to trace only the highest impact publication, WOS counting is more appropriate (Meho and Yang, 2007).

*Table 2 - Twenty most cited paper according to WOS*

| TC | Author(s) | Title | Year | Journal |
|----|-----------|-------|------|---------|
| *398* | Lorenzoni, G. Lipparini, A. | The leveraging of interfirm relationships as a distinctive organizational capability: A longitudinal study. | 1999 | Strategic management journal |
| *350* | Gargiulo, M. Benassi, M. | Trapped in your own net? Network cohesion structural holes, and the adaptation of social capital. | 2000 | Organization science |
| *252* | Bonaccorsi, A. | On the relationship between firm size and export intensity. | 1992 | Journal of international business studies |
| *250* | Gibbert, M. Ruigrok, W. Wicki, B. | What passes as a rigorous case study? | 2008 | Strategic management journal |
| *249* | Mudambi, R. Navarra, P. | Is knowledge power? Knowledge flows, subsidiary power and rent-seeking within MNCs. | 2004 | Journal of international business studies |
| *206* | Verona, G. | A resource-based view of product development. | 1999 | Academy of management review |
| *194* | Greco, S. Matarazzo, B. Slowinski, R. | Rough sets methodology for sorting problems in presence of multiple attributes and criteria. | 2002 | European journal of operational research |
| *190* | Forza, C. | Survey research in operations management: a process-based perspective. | 2002 | International journal of operations & production management |
| *188* | Capaldo, A. | Network structure and innovation: The leveraging of a dual network as a distinctive relational capability. | 2007 | Strategic management journal |
| *183* | Colombo, M.G. Grilli, L. | Founders' human capital and the growth of new technology-based firms: A competence-based view. | 2005 | Research policy |
| *175* | Chiesa, V. Coughlan, P. Voss, C.A. | Development of a technical innovation audit. | 1996 | Journal of product innovation management |
| *169* | Salvador, F. Forza, C. Rungtusanatham, M. | Modularity, product variety, production volume, and component sourcing: theorizing beyond generic prescriptions. | 2002 | Journal of operations management |
| *153* | Corbetta, G. Salvato, C. | Self-serving or self-actualizing? Models of man and agency costs in | 2004 | Entrepreneurship theory and practice |

| | | different types of family firms: A commentary on "comparing the agency costs of family and non-family firms: Conceptual issues and exploratory evidence". | | |
|---|---|---|---|---|
| *153* | MacCormack, A. Verganti, R. Iansiti, M. | Developing products on "Internet time": The anatomy of a flexible development process. | 2001 | Management science |
| *138* | Hoegl, M. Weinkauf, K. Gemuenden, H.G. | Interteam coordination, project commitment, and teamwork in multiteam R&D projects: A longitudinal study. | 2004 | Organization science |
| *131* | Colombo, M.G. Delmastro, M. | How effective are technology incubators? Evidence from Italy. | 2002 | Research policy |
| *122* | Cova, B. Pace, S. | Brand community of convenience products: new forms of customer empowerment - the case "my Nutella The Community". | 2006 | European journal of marketing |
| *121* | Bruni, A. Gherardi, S. Poggio, B. | Doing gender, doing entrepreneurship: An ethnographic account of intertwined practices. | 2004 | Gender work and organization |
| *121* | Lamming, R. | Squaring lean supply with supply chain management. | 1996 | International journal of operations & production management |
| *117* | Verganti, R. | Design, meanings, and radical innovation: A metamodel and a research agenda. | 2008 | Journal of product innovation management |
| | | | | *T.C. is "total citations".* |

The immediate evidence arising is referred to authors' country of origin. In fact, taking into consideration 41 papers, 27 (65,85%) of them come from Italian scholars and 14 (34,15%) from non-Italian scholars.

## 2.4 Authors Overview

The second part of the analysis involves authors. Table 3 shows the most prolific authors with at least five indexed papers indexed in WOS Core Collection including co-authorships.

*Table 3 - Most prolific authors, with at least five indexed papers*

| # | Name | N. P. | # | Name | N. P. |
|---|---|---|---|---|---|
| *1* | Chiesa, Vittorio | 17 | *24* | Spina, Gianluca | 6 |
| *2* | Nosella, Anna | 13 | *25* | Gherardi, Silvia | 6 |
| *3* | Colombo, Massimo G. | 12 | *26* | Goffin, Keith | 6 |
| *4* | Ordanini, Andrea | 11 | *27* | Giangreco, Antonio | 6 |
| *5* | Cagliano, Raffaella | 10 | *28* | Gualandris, Jury | 5 |
| *6* | De Massis, Alfredo | 10 | *29* | Ghezzi, Antonio | 5 |
| *7* | Danese, Pamela | 9 | *30* | Calabrese, Armando | 5 |

| | | | | | |
|---|---|---|---|---|---|
| *8* | Corso, Mariano | 9 | *31* | Aloini, Davide | 5 |
| *9* | Frattini, Federico | 9 | *32* | Salvato, Carlo | 5 |
| *10* | Guenzi, Paolo | 8 | *33* | Borgonovo, Emanuele | 5 |
| *11* | Bianchi, Mattia | 8 | *34* | Muffatto, Moreno | 5 |
| *12* | De Toni, Alberto F. | 8 | *35* | Magnusson, Mats | 5 |
| *13* | Martini, Antonella | 8 | *36* | Rossi-Lamastra, Cristina | 5 |
| *14* | Zollo, Maurizio | 8 | *37* | Wright, Mike | 5 |
| *15* | Verganti, Roberto | 8 | *38* | Bianchi, Carmine | 5 |
| *16* | Luzzini, Davide | 7 | *39* | Caru, Antonella | 5 |
| *17* | Gambardella, Alfonso | 7 | *40* | Rubera, Gaia | 5 |
| *18* | Dell'Era, Claudio | 7 | *41* | Di Minin, Alberto | 5 |
| *19* | Neirotti, Paolo | 7 | *42* | Priem, Richard L. | 5 |
| *20* | Hoegl, Martin | 7 | *43* | Minichilli, Alessandro | 5 |
| *21* | Frey, Marco | 7 | *44* | Coccia, Mario | 5 |
| *22* | Sciascia, Salvatore | 6 | *45* | Azzone, Giovanni | 5 |
| *23* | Pagani, Margherita | 6 | | | |
| | | | | *N.P. is "number of papers".* | |

Table 4 shows the most cited authors with at least 200 citations, including co-authorships. On the table below we noted the same issue as Table 1 regarding the number of citations. For example, if we take into consideration the first author findable in Google Scholar, namely Lipparini Andrea, he had 3,161 citations in Google Scholar instead of 491 in WOS. Consistently with previous research, we argue that WOS Core Collection indicator is more precise and more reliable than Google Scholar because of its representation of only high impact researches (Meho and Yang, 2007).

*Table 4 - Most cited authors, with at least two hundred citations*

| # | Name | T.C. | # | Name | T.C. |
|---|---|---|---|---|---|
| *1* | Chiesa, Vittorio | 701 | *17* | Gargiulo, Martin | 350 |
| *2* | Verganti, Roberto | 671 | *18* | Spina, Gianluca | 336 |
| *3* | Forza, Cipriano | 655 | *19* | Ordanini, Andrea | 322 |
| *4* | Lipparini, Andrea | 491 | *20* | Corbetta, Guido | 300 |
| *5* | Hoegl, Martin | 448 | *21* | Navarra, Pietro | 291 |
| *6* | Gherardi, Silvia | 434 | *22* | Poggio, Barbara | 252 |
| *7* | Colombo, Massimo G. | 417 | *23* | Zucchella, Antonella | 232 |
| *8* | Gibbert, Michael | 403 | *24* | De Massis, Alfredo | 231 |
| *9* | Lorenzoni, Gianni | 401 | *25* | Mazzola,Pietro | 231 |
| *10* | Verona, Gianmarco | 401 | *26* | Zollo, Maurizio | 224 |
| *11* | Frattini, Federico | 383 | *27* | Minichilli, Alessandro | 218 |
| *12* | Salvato, Carlo | 382 | *28* | Greco, Salvatore | 217 |
| *13* | Benassi, Mario | 370 | *29* | Grilli, Luca | 214 |
| *14* | Bonaccorsi, Andrea | 367 | *30* | Speranza, Maria G. | 212 |
| *15* | Cagliano, Raffaella | 365 | *31* | Capaldo, Antonio | 210 |
| *16* | Salvador, Fabrizio | 352 | *32* | Noci, Giuliano | 206 |
| | | | | *T.C. is "total citations".* | |

## 2.4 Journals Overview

The third part of our analysis involves journals; Table 5 shows journals with at least 10 papers, while Table 6 shows the most 50 cited journals.

*Table 5 - List of journals with at least ten papers*

| # | Journal | T.C. | # | Journal | T.C. |
|---|---------|------|---|---------|------|
| 1 | European journal of operational research | 106 | 27 | Corporate governance-an international review | 16 |
| 2 | International journal of operations & production management | 72 | 28 | Industry and innovation | 15 |
| 3 | International journal of technology management | 60 | 29 | International journal of project management | 15 |
| 4 | Research policy | 42 | 30 | Family business review | 14 |
| 5 | Journal of product innovation management | 41 | 31 | Journal of technology transfer | 14 |
| 6 | Journal of business ethics | 38 | 32 | Entrepreneurship theory and practice | 13 |
| 7 | Industrial marketing management | 34 | 33 | Journal of operations management | 13 |
| 8 | Technovation | 31 | 34 | Journal of small business management | 13 |
| 9 | Journal of knowledge management | 28 | 35 | Organization studies | 13 |
| 10 | European management journal | 26 | 36 | Strategic management journal | 13 |
| 11 | R & D management | 26 | 37 | British journal of management | 12 |
| 12 | Public management review | 25 | 38 | International business review | 12 |
| 13 | International journal of human resource management | 23 | 39 | Journal of organizational change management | 12 |
| 14 | Long range planning | 23 | 40 | Journal of purchasing and supply management | 12 |
| 15 | Management decision | 23 | 41 | Business history | 11 |
| 16 | Small business economics | 23 | 42 | Business strategy and the environment | 11 |
| 17 | European management review | 22 | 43 | Industrial and corporate change | 11 |
| 18 | Tourism management | 22 | 44 | Journal of intellectual capital | 11 |
| 19 | Organization science | 21 | 45 | Management science | 11 |
| 20 | Technology analysis & strategic management | 20 | 46 | Total quality management | 11 |
| 21 | Total quality management & business excellence | 20 | 47 | Business process management journal | 10 |
| 22 | Knowledge management research & practice | 19 | 48 | Human resource management | 10 |
| 23 | Technological forecasting and social change | 19 | 49 | IEEE transactions on engineering management | 10 |
| 24 | Journal of nursing management | 18 | 50 | International journal of contemporary hospitality management | 10 |

| 25 | Journal of business research | 17 | *51* | Journal of engineering and technology management | 10 |
|---|---|---|---|---|---|
| *26* | Supply chain management-an international journal | 17 | | | |
| | | | | *T.C. is "total citations".* | |

In order to ensure a wider perspective about the journals, we included also the journals with the total number of citations (Table 6) to highlight where the Italian scholars and Italian based studies have more relevance.

*Table 6 - List of the fifty most cited journals*

| # | Journal | T.C. | # | Journal | T.C. |
|---|---|---|---|---|---|
| *1* | European journal of operational research | 1791 | *26* | Small business economics | 249 |
| *2* | International journal of operations & production management | 1726 | *27* | Corporate governance-an international review | 242 |
| *3* | Organization science | 1263 | *28* | Journal of business research | 180 |
| *4* | Research policy | 1155 | *29* | Journal of world business | 177 |
| *5* | Journal of product innovation management | 1123 | *30* | Public management review | 174 |
| *6* | Strategic management journal | 1029 | *31* | European journal of marketing | 170 |
| *7* | Journal of business ethics | 596 | *32* | International business review | 163 |
| *8* | Journal of international business studies | 583 | *33* | Technological forecasting and social change | 160 |
| *9* | Journal of operations management | 553 | *34* | Operations research | 158 |
| *10* | Technovation | 527 | *35* | Journal of knowledge management | 153 |
| *11* | Entrepreneurship theory and practice | 478 | *36* | Omega-international journal of management science | 148 |
| *12* | R & D management | 474 | *37* | Journal of nursing management | 146 |
| *13* | Industrial marketing management | 416 | *38* | Journal of organizational change management | 146 |
| *14* | International journal of technology management | 390 | *39* | International journal of human resource management | 144 |
| *15* | Management science | 351 | *40* | Management decision | 143 |
| *16* | Organization studies | 347 | *41* | Journal of service research | 139 |
| *17* | Family business review | 330 | *42* | European management journal | 134 |
| *18* | Tourism management | 326 | *43* | Journal of engineering and technology management | 134 |
| *19* | Academy of management review | 308 | *44* | International journal of project management | 128 |
| *20* | Long range planning | 307 | *45* | Gender work and organization | 126 |
| *21* | Supply chain management-an international journal | 297 | *46* | Journal of management | 123 |
| *22* | Journal of management studies | 282 | *47* | California management review | 121 |
| *23* | European management review | 279 | *48* | Harvard business review | 121 |
| *24* | Journal of business venturing | 273 | *49* | Journal of purchasing and supply management | 114 |

| 25 | Human relations | 261 | 50 | Knowledge management research & practice | 111 |
|---|---|---|---|---|---|
| | | | | *T.C. is "total citations". | |

As immediate evidence, it is possible to see that despite a different unit of measure in Table 5 and Table 6, that respectively represent the concentration of papers in term of journals and the aggregate impact of papers in terms of journals, the main field of research is focused on innovation and technology.

This evidence is also confirmed by the following bibliometric analysis who shows the knowledge structure of data taken into consideration.

## 3. Bibliometric Keyword Analysis

### 3.1 Method

After the brief presentation of papers, authors, and journals in this field of research, to achieve the aim of mapping the research streams by an extensive number of papers, we use the text-mining routine VOSviewer 1.6.5 (Van Eck and Waltman, 2010).

The map built by the text-mining routine is a plot in which keywords' distance can be interpreted as a sign of the relatedness of the terms. The smaller the distance is between keywords, the stronger the keywords are related to each other. The keywords' relatedness is determined on co-occurrences in documents (Van Eck et al., 2010).

After the analysis of keywords, the next step involves the cluster analysis, in particular, the measure of intra- and inter-cluster diversity with the aim of better understanding knowledge base diversity within each cluster (Van Eck and Waltman, 2014).

The cluster analysis shows knowledge-base diversity besides each cluster. When keywords belong to the same cluster they are strongly linked as a group. It shows that a cluster represents a stream of research or particular topic on a similarity base. However, the proximity needs to be considered in cluster visualization. In particular, there are several cases where an item belongs to a cluster, but it is in the proximity to another cluster. In those cases, even though the items do not appear in the same cluster, they are fairly related to each other but not with the strength necessary to belong to the same cluster. This issue happened because of the unfeasibility to show the VOS output with the third dimension (Van Eck and Waltman, 2007). Last, the brightness of a point represents the intensity of it in terms of several occurrences, showing the importance of itself in the plot.

In conclusion, to settle to what extends a certain cluster is more diverse than another one the script perform a t-test to exam the differences in their diversity (Van Eck and Waltman, 2009; Waltman et al., 2010).

Regarding the keyword analysis taken into consideration, we included chief authors' keywords that appear (occurrences) at least five times in the dataset. However, in order to ensure the reliability of the representation, a manual selection and cleaning is done independently by two authors. After this step, we have compared the results and made the final keywords selection.

### 3.2 Keywords Cluster Overview

The figure below (Figure 2) shows the results for keyword clustering. From the figure, it can be appreciated how the words which belong to the same sphere have the tendency to appear together.

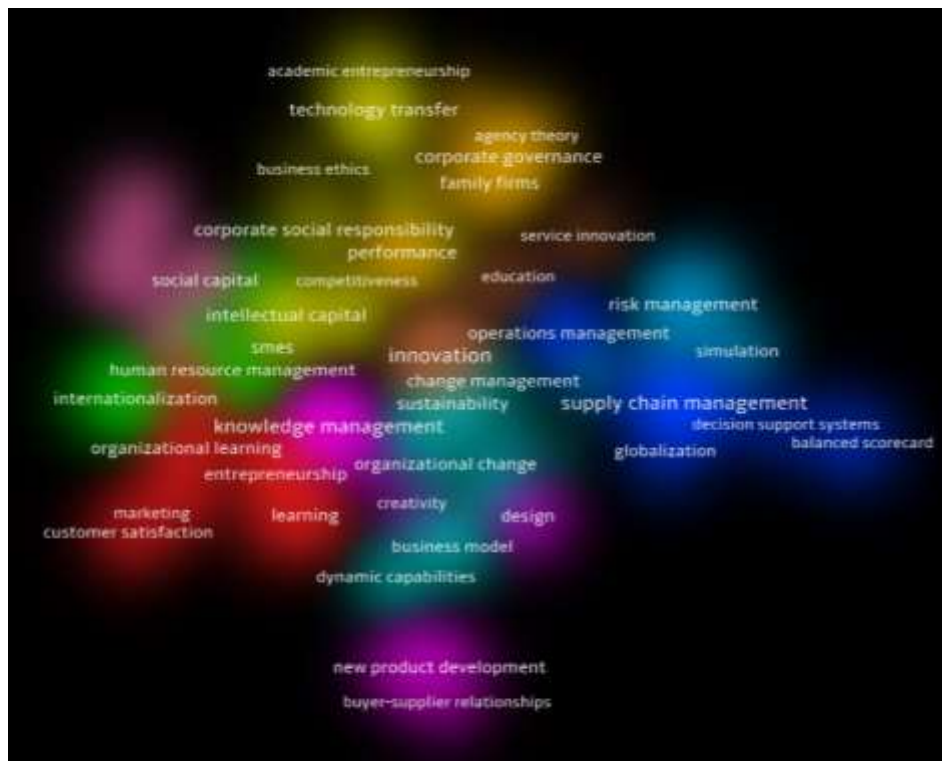*Figure 2 - Graphical result of keywords analysis*



Table 7 briefly summarizes the cluster aggregation in order to ensure a clearer understanding.

*Table 7 - Summary of keywords clustering*

| Cluster | Keywords |
|---------|----------|
| 1 | absorptive capacity, communication, customer satisfaction, entrepreneurship, ethnography, human capital, knowledge transfer, learning, marketing, mergers and acquisitions, organizational learning, social networks, strategic alliances |
| 2 | alliances, ambidexterity, human resource management, internationalization, open innovation, patents, R&D, stakeholder management |
| 3 | balanced scorecard, decision support systems, globalization, operations management, purchasing, supplier relations, supply chain management, system dynamics |
| 4 | academic entrepreneurship, accounting, health care, intellectual capital, international management, knowledge sharing, technology transfer |
| 5 | buyer-supplier relationships, creativity, design, knowledge creation, knowledge management, new product development, project management |
| 6 | business model, dynamic capabilities, logistics, manufacturing, strategic management, strategy, sustainability |
| 7 | decision support system, environmental management, finance, risk management, simulation, sustainable development |
| 8 | agency theory, corporate governance, family firms, family involvement, ownership structure, performance |
| 9 | business ethics, competitiveness, corporate social responsibility, CSR, SMEs |
| 10 | competitive advantage, intangible assets, job satisfaction, resource-based view, social capital |
| 11 | education, innovation, service innovation, social media |
| 12 | change management, decision making, heuristics, organizational change |

Twelve clusters seem to emerge. Although some clusters result to be wide, such as Cluster 1, which contains keywords such as absorptive capacity, entrepreneurship, knowledge transfer, marketing, and communication, other clusters reveal a more focused result, such as Cluster 11 and 12. However, it is clear how Italian management research has spanned across most of the areas of research considered at the global level, in particular, we noted the predominance of strategy (Cluster 1, 2, 5, 6, 8, 10), innovation (Cluster 2, 4, 11), operations and logistics (Cluster 3), and business ethics (Cluster 9).

### 3.3 Keywords Density Overview

A deeper analysis is portrayed by the figure below, which shows the relative importance of the keywords, in terms of their density, where the red color shows high density, the yellow color shows a medium density and the green a lower density (Van Eck et al., 2010a).

*Figure 3 - Graphical representation of keywords occurrences*
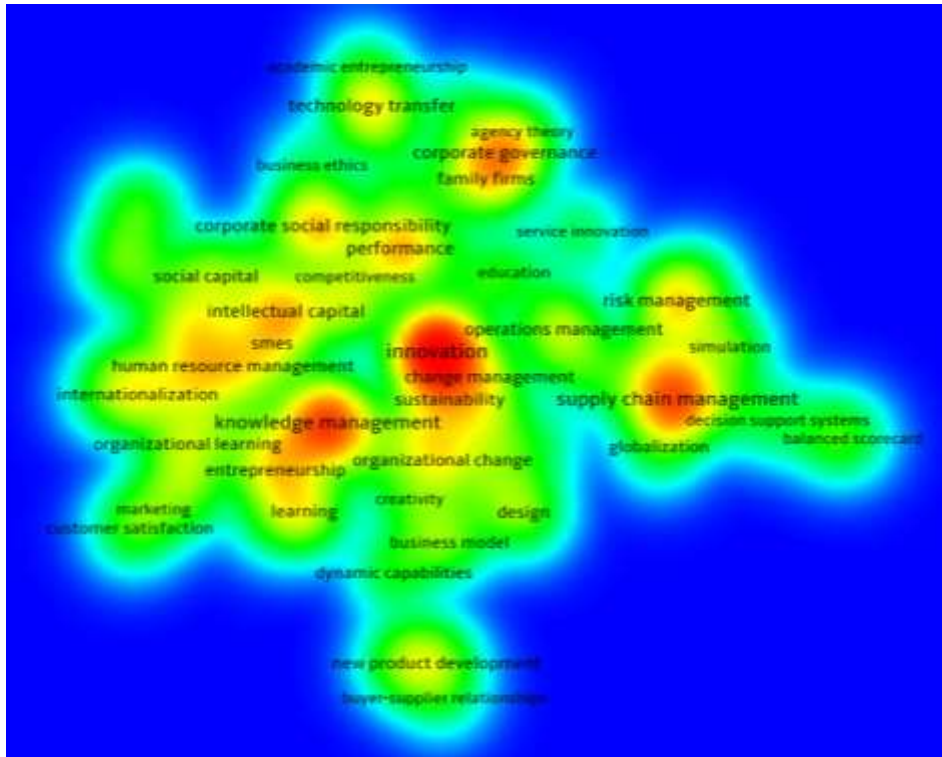


The table below (Table 8) shows the aggregate number of occurrences per cluster keywords had.

*Table 8 - Numerical representation of keywords occurrences*

| # | Keyword | OCC. | # | Keyword | OCC. |
|---|---------|------|---|---------|------|
| 1 | innovation | 69 | 41 | knowledge creation | 7 |
| 2 | knowledge management | 45 | 42 | ownership structure | 7 |
| 3 | supply chain management | 42 | 43 | strategy | 7 |
| 4 | corporate governance | 27 | 44 | supplier relations | 7 |
| 5 | performance | 26 | 45 | sustainable development | 7 |
| 6 | corporate social responsibility | 24 | 46 | agency theory | 6 |
| 7 | intellectual capital | 22 | 47 | ambidexterity | 6 |
| 8 | risk management | 21 | 48 | balanced scorecard | 6 |
| 9 | technology transfer | 19 | 49 | creativity | 6 |
| 10 | learning | 18 | 50 | decision support systems | 6 |
| 11 | entrepreneurship | 17 | 51 | education | 6 |
| 12 | operations management | 17 | 52 | ethnography | 6 |
| 13 | organizational change | 17 | 53 | finance | 6 |
| 14 | sustainability | 16 | 54 | human capital | 6 |
| 15 | internationalization | 15 | 55 | logistics | 6 |
| 16 | knowledge sharing | 15 | 56 | manufacturing | 6 |

| | | | | | |
|---|---|---|---|---|---|
| 17 | family firms | 14 | 57 | marketing | 6 |
| 18 | human resource management | 14 | 58 | mergers and acquisitions | 6 |
| 19 | design | 13 | 59 | patents | 6 |
| 20 | organizational learning | 13 | 60 | purchasing | 6 |
| 21 | social capital | 13 | 61 | R&D | 6 |
| 22 | change management | 12 | 62 | service innovation | 6 |
| 23 | new product development | 12 | 63 | social media | 6 |
| 24 | project management | 12 | 64 | social networks | 6 |
| 25 | SMEs | 12 | 65 | strategic alliances | 6 |
| 26 | knowledge transfer | 11 | 66 | system dynamics | 6 |
| 27 | open innovation | 11 | 67 | academic entrepreneurship | 5 |
| 28 | competitive advantage | 10 | 68 | accounting | 5 |
| 29 | decision making | 10 | 69 | alliances | 5 |
| 30 | job satisfaction | 10 | 70 | business ethics | 5 |
| 31 | resource-based view | 10 | 71 | buyer-supplier relationships | 5 |
| 32 | strategic management | 10 | 72 | communication | 5 |
| 33 | customer satisfaction | 9 | 73 | competitiveness | 5 |
| 34 | simulation | 9 | 74 | CSR | 5 |
| 35 | business model | 8 | 75 | decision support system | 5 |
| 36 | dynamic capabilities | 8 | 76 | family involvement | 5 |
| 37 | environmental management | 8 | 77 | heuristics | 5 |
| 38 | absorptive capacity | 7 | 78 | intangible assets | 5 |
| 39 | globalization | 7 | 79 | international management | 5 |
| 40 | health care | 7 | 80 | stakeholder management | 5 |
| | | | | *"OCC." is the number of keyword occurrences. | |

As a result, it is more clear that most Italian research has focused on innovation, knowledge management, supply chain management and corporate governance (Bonaccorsi, 1992; Lorenzoni and Lipparini, 1999; Gargiulo and Benassi, 2000). Areas that are less investigated and might make up promising research avenues are business ethics, service innovation and academic entrepreneurship (Ordanini and Parasuraman, 2008; Audretsch et al., 2015; Garegiani et al., 2015).
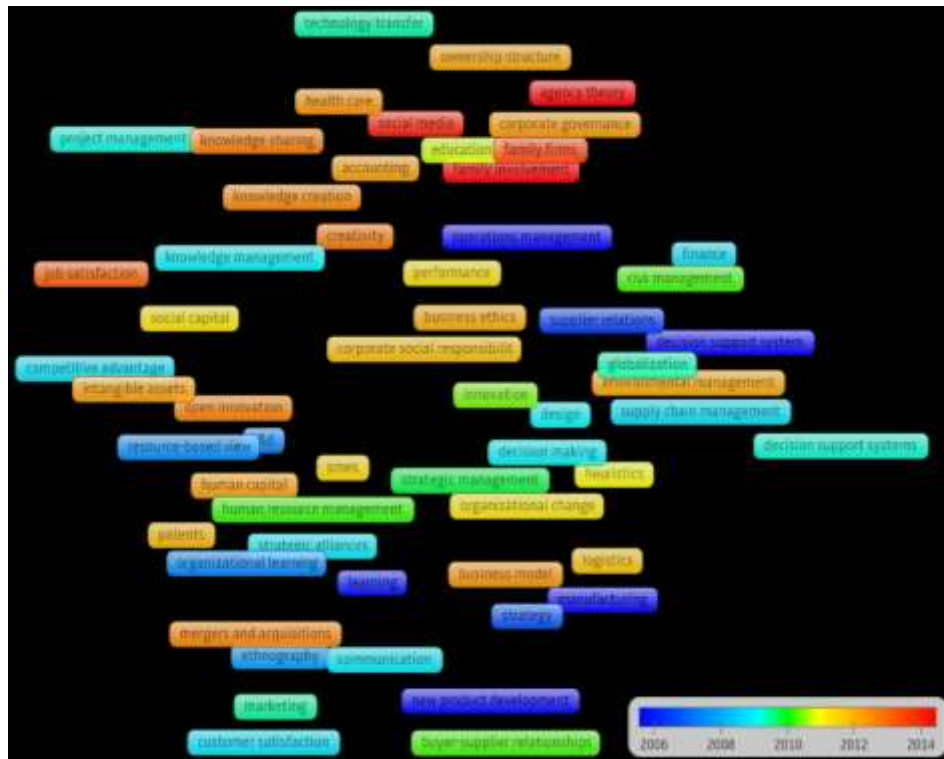
### 3.4 Keywords Average Novelty

With the third level of analysis, we finally represent the average novelty of keywords expressed in years. The plot and the table (Figure 4 and Table 9) are based on the same keywords' dataset of the above two analyses. Here, the labels' colors represent the average age of keywords. In particular, the more the color is cold (blue, light blue), the more the keyword is outdated. On the contrary, the more the color is warm (yellow, orange, and red) the more the keyword is recent.

Indeed, the keywords taken in consideration are not older than 2004. This relates to the scientific proliferation of the last ten years, which we already

mentioned in paragraph two. Nevertheless, eleven years of data visualization is still useful to analyze the recent field evolution.

*Figure 4 – Graphical representation of keywords average novelty*



The table below (Table 9) shows the average keywords' year and "A.Y." represents this value.

*Table 9 – Numerical representation of keywords average novelty*

| # | Keyword | A.Y. | # | Keyword | A.Y. |
|---|---------|------|---|---------|------|
| 1 | agency theory | 2014,33 | 41 | social capital | 2011,08 |
| 2 | family involvement | 2014,20 | 42 | organizational change | 2011,06 |
| 3 | absorptive capacity | 2014,16 | 43 | entrepreneurship | 2010,80 |
| 4 | social media | 2013,67 | 44 | heuristics | 2010,80 |
| 5 | ambidexterity | 2013,33 | 45 | education | 2010,67 |
| 6 | family firms | 2013,29 | 46 | innovation | 2010,36 |
| 7 | service innovation | 2013,17 | 47 | buyer-supplier relationships | 2010,20 |
| 8 | stakeholder management | 2013,00 | 48 | risk management | 2010,19 |
| 9 | dynamic capabilities | 2012,88 | 49 | human resource management | 2010,14 |
| 10 | social networks | 2012,83 | 50 | strategic management | 2009,80 |
| 11 | competitiveness | 2012,80 | 51 | marketing | 2009,50 |
| 12 | job satisfaction | 2012,80 | 52 | technology transfer | 2009,47 |
| 13 | creativity | 2012,50 | 53 | globalization | 2009,43 |

| | | | | | |
|---|---|---|---|---|---|
| *14* | knowledge sharing | 2012,47 | *54* | decision support systems | 2009,33 |
| *15* | sustainable development | 2012,43 | *55* | project management | 2009,27 |
| *16* | academic entrepreneurship | 2012,40 | *56* | design | 2009,15 |
| *17* | sustainability | 2012,38 | *57* | knowledge management | 2009,11 |
| *18* | open innovation | 2012,36 | *58* | decision making | 2009,10 |
| *19* | mergers and acquisitions | 2012,33 | *59* | communication | 2009,00 |
| *20* | intellectual capital | 2012,32 | *60* | strategic alliances | 2009,00 |
| *21* | knowledge creation | 2012,29 | *61* | competitive advantage | 2008,90 |
| *22* | CSR | 2012,20 | *62* | customer satisfaction | 2008,89 |
| *23* | health care | 2012,14 | *63* | supply chain management | 2008,88 |
| *24* | business model | 2012,13 | *64* | finance | 2008,83 |
| *25* | change management | 2012,08 | *65* | system dynamics | 2008,67 |
| *26* | corporate governance | 2012,04 | *66* | knowledge transfer | 2008,40 |
| *27* | accounting | 2012,00 | *67* | international management | 2008,20 |
| *28* | human capital | 2012,00 | *68* | ethnography | 2008,00 |
| *29* | intangible assets | 2012,00 | *69* | resource-based view | 2007,78 |
| *30* | environmental management | 2011,88 | *70* | organizational learning | 2007,69 |
| *31* | ownership structure | 2011,86 | *71* | R&D | 2007,67 |
| *32* | alliances | 2011,80 | *72* | purchasing | 2007,60 |
| *33* | business ethics | 2011,80 | *73* | simulation | 2007,22 |
| *34* | internationalization | 2011,80 | *74* | strategy | 2007,00 |
| *35* | patents | 2011,67 | *75* | supplier relations | 2006,71 |
| *36* | corporate social responsibility | 2011,54 | *76* | learning | 2006,17 |
| *37* | balanced scorecard | 2011,50 | *77* | new product development | 2005,73 |
| *38* | logistics | 2011,50 | *78* | decision support system | 2005,40 |
| *39* | SMEs | 2011,25 | *79* | operations management | 2004,00 |
| *40* | performance | 2011,15 | *80* | manufacturing | 2003,83 |
| | | | | *A.Y. is average keyword's year | |

Specifically, regarding to the above figure (Figure 4), it highlights several interesting insights. First, as the image suggests, it is possible to divide the data in quartiles.

1. Dark blue and blue: 2005 – 2007
2. Light blue and green: 2008 – 2010
3. Yellow and orange: 2011 – 2013
4. Red: 2014 – 2015

Thus, it is possible to see that keywords which are related to the engineering side of management (e.g. operations management, new product development, and manufacturing) are in the older quartile (2005 – 2007, dark blue and blue). If we move to the second quartile (2008 – 2010, light blue and green) is possible to see keywords including technology transfer, supply chain management, innovation etc. This evidence is in line with the results of the previous analysis.

However, taking into consideration the third and fourth quartile, respectively 2011-2013 (yellow and orange) and 2014-2015 (red), we can witness to a radical change in keywords. We can notice a switch to more typical management topics such as social capital, corporate social

responsibility, business model, and corporate governance. Finally, is possible to note that the most recent keywords highlight a focus on family firms (family firms and family involvement) and to social media creating possible future topics for Italian studies on management.

## 4. Conclusion

With this paper, the authors have taken into consideration the most relevant scholars and studies based on the Italian context. Indeed, the research query extracts all the scholars affiliated with an Italian university. In order to be more accurate, the research string also takes into consideration the researches based in the Italian context. The reason behind this choice could be explained because of a considerable number of Italian researchers are affiliated with non-Italian institutions. However, a large part of them remains involved in Italian-related projects.

In the first part, the authors stressed out the data to give a snapshot of the actual situation using classic bibliometric data. In the second part, namely paragraph 3, the data are processed to extract useful insights. In fact, keyword analysis highlights the streams inside the management field where scholars have focused their attention.

In particular, the analysis shows that innovation plays a major role in Italian studies on management. Immediately after, knowledge management and supply chain management are playing a relevant role in Italian scholars' topic selection. The other topics are following with a relevant difference. The evidence is also confirmed by the analysis of most cited journals.

Second, the last of the three levels of analysis highlight the medium age of the keywords. This representation clearly helps to identify on which topic Italian scholars were focused and which are the most recent trends. In fact, despite their relevance in terms of occurrences, the more recent papers handle topics such as agency theory, family involvement, absorptive capacity, social media, family firms, service innovation, stakeholder management, and dynamic capabilities. Thus, this evidence remakes that innovation as key research area remains the most important trending topic, but additional streams of literature are approaching the future, especially regarding family firms. We can argue that there are several promising research avenues, namely business ethics, service innovation, and academic entrepreneurship.

Thus, with this paper, we have contributed to the extant Italian literature in two ways. First, we gave a brief and easy to examine report about the state-of-the art of thirty years of research in management. In fact, with the first part of the present research, we gave the opportunity to immediate recognize the most influential papers, authors, and journals.

Second, the keywords analysis has reinforced the examination of the extant literature but it also gave some useful insights about the trending topics for the near future which could help the researcher settle their research agenda with the most promising topic for the future.

In conclusion, this work has the typical limitation of a bibliometric study. In particular, the fact of taking in consideration a vast amount of papers (1,665 in this case) does not permit deepening all the literature but only to offer a wider and general perspective on the present field of study.

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