

MANAGERIAL COMPETENCIES IN THE 21ST CENTURY: A BIBLIOGRAPHIC REVIEW OF THE RESEARCH DOMAIN.

M. Pilar Gamarra¹, Michele Giroto², Luis A. Seguí³

¹ University College of Financial Studies – CUNEF - (SPAIN)

² Polytechnic University of Catalonia – UPC - (SPAIN)

² Polytechnic University of Catalonia – UPC - (SPAIN)

Abstract

In 21st Century, organizations need to be managed with specific competencies due to the changing and complex world in which they are developing their activities. Managerial competencies have been defined as a set of motivations, personal, traits, abilities, knowledge and values necessary to improve management performance and is a branch of a larger group of individual competencies. So, identifying these managerial competencies becomes a valuable source for achieving competitive advantages in these organizations.

The aim of this paper is to carry out a concise “state of the art” review of a managerial competencies research domain, in particular, how scholars approached this field of study, what aspects of managerial competencies were studied, which areas and sectors were chosen and which countries scholars focused their research on, how that research was defined, which methodologies were used, which target population was chosen to do the research, how many individuals took part in the process of obtaining data and finally what conclusions were reached. This study identifies and evaluates the literature on managerial competencies published in journals included in the Social Sciences Citation Index of the Web of Science in order to identify what (topics), when (evolution over time), where (areas, countries, regions), by whom (principal authors and journals) and how (research types and methodologies) it has been researched.

Reviewing the content of this systematic study allows a contemporary and comprehensive overview of this field as such and a methodological contribution to run a multi-variate analysis of the different aspects related to managerial competencies. This study identifies cross-disciplinary research perspectives in the field today. Some gaps in the research are identified and the main contribution of this paper is to determine how conclusions can be reached about possible future research in this field to supplement, update and extend the result obtained to date.

Keywords: managerial competencies, literature review, bibliographic review, 21st Century competencies, managerial skills, state of art.

1 INTRODUCTION

The review of related literature involves the systematic identification, location, and analysis of material related to this current research problem: managerial competencies in 21st Century organizations. A key objective of the literature review is to provide a clear and balanced picture of current leading concepts, theories, and data relevant to the topic: managerial competencies, as it is the subject of a study (Bloomberg & Volpe, 2008). According to (Hart, 2008), in a review of the literature, some questions about the researched topic must be answered: the origins and definitions of the topic, the key sources and the key theories, concepts and ideas, the major issues and debates about the topic and lastly the structure of the knowledge on the topic. Based on this idea and with an iterative search in the main literature databases such as Web of Science, Scopus or Google Scholar, qualified research studies on topics related to managerial competencies in different disciplines, areas of knowledge and sectors in industries were identified. Those studies were examined, analyzed and categorized with VOSViewer software according to the main categories: bibliographical data, methodologies used, empirical foundation, conceptual frameworks, selected items and reported outcomes.

Every current business organization needs effective managers to be successful in today's highly competitive and dynamic business environment. So, it is a priority to identify competencies which

every successful and effective manager possesses and those that enable them to perform efficiently and effectively at different managerial levels. The terms of competence and competency have been much discussed in the managerial literature, and it has been defined from several different perspectives and accordingly has a number of meanings (Mitchelmore & Rowley, 2010). The term competency was originally used in education to describe trainee teacher behaviours. Subsequently, the term was widely used and discussed in the management domain, initially in USA and led by (Boyatzis, 1982), who developed his model of managerial competency with a study of over two thousand managers, he identified over one hundred potential managerial competencies. These can be described in terms of essential personal traits, skills, knowledge and motives of the employee that leads to superior managerial performance. A review of the literature by (Hoffmann, 1999) suggests that the purpose of defining competencies is to improve human performance at work and shows three main positions taken towards a definition of the term: observable performance (Bowden & Masters, 1993), the standard or quality of the outcome of the person's performance (Rutherford, 1995) and the underlying attributes of a person (Boyatzis, 1982).

This article undertakes a bibliographic review of research on managerial competencies in order to provide an integrated account of contributions relating to managerial competencies by different authors working in different countries and different industry sectors and at different points in time. The aim of this paper is to identify the way in which research on the managerial competencies has developed internationally, with a view to identifying the main lines of investigation and determining a research agenda in this field.

The importance of this review of the literature lies in the fact that its results may be useful for researchers in two different areas of research: (1) those who study Human Resources policies related to managerial positions, and (2) those who study master level programs at university or business school, destined for leadership positions in organizations.

In the following sections, we will analyse the existing reviews of the managerial competencies literature before moving on to present the methodology used in our analysis and the results. Finally, the paper concludes with a proposal for future lines of research, identified gaps in the study of managerial competencies and finally conclusions.

2 METHODOLOGY

To perform the literature review and to facilitate a systematic analysis, with a possibility of using quantitative data, our search also focused on research-published articles in academic journals. This study has focused on publications in the main social sciences journals, using the Web of Science Core Collection database (considered to be the world's most trusted citation index for scientific and scholarly research (Chadegani et al., 2013)). The articles published in journals included in Social Sciences Citation Index (SSCI) edition of the Web of Science Core Collection database assure a peer-reviewed quality, which is not the case with books and other non-academic material. They were analyzed, even though, queries were used to search in other important online databases such as Scopus and Google Scholar. Obtained result in both databases, Web of Science and Scopus, were compared, finding differences between the number of results for the same query. The number of obtained articles in Scopus has always been greater than in Web of Science. In this situation, articles in Web of Science were analyzed in more depth, because it is considered to be a more scholarly source than the Scopus database because of more indexing (Fingerman, 2006). Finally, Google Scholar was consulted to find referred articles in others and didn't appear in Web of Science or Scopus. So, the main resource to find the core of the literature review was found on Web of Science and the databases were used to find keywords, authors and articles to complete the search.

A "systematic review process" was followed (Codina, 2018). The iterative search and retrieval procedure started with developing a set of search concepts related to managerial competencies, thus relating to different ways of conceptualizing a competence (competency, skills, ability, feature), as well as manager and managerial (leadership, leader, director, responsible). These concepts were then, used in different combinations, such as entries for the query used in the search: "managerial", "manager", "leader", "leadership", "skills", "competencies", "competency", "managerial competencies", etc. The combination of these keywords was used in different fields of the search: topics and titles joined between them with logical connectors. The search was conducted in March 2019, so the timescale for the analysis was limited to the period (1964 until March 2019), in other words, the starting date roughly corresponds to the time when studies using the label of competencies in the managerial environment began to appear.

The research design consists of seven steps:

- 1) Identifying if previous bibliographic reviews or systematic analyses of the literature exists on managerial competencies.
- 2) Choosing a period of time to be reviewed. Due to this topic being the subject of constant debate, the antecedents of the current managerial competencies research domain can be the base of several studies. So, our period of study for our query begins with the first document in which the chain “managerial competence” appears as a topic either in the title, in keywords or the abstract of the articles. Then, our search was restricted to articles published between 2007 and 2019 (See Fig.1). This time span was chosen because our preliminary analysis of the available review articles and meta-analysis studies on management or business indicated that the most influential literature was at least twelve years old (in 2007 is greater than 80).
- 3) Developing a search query for the Web of Science Core Collection database. To further narrow down our search, only articles refined by management, business, economics and business finance categories were included from the Web of Science.
- 4) To ensure that each article in this study was relevant to the managerial competencies’ domain, the abstracts, keywords and introductory section of each selected article were manually evaluated by the authors. This allowed us to exclude false positives, i.e. articles that include the terms “manager” or “managerial” and “competence” or “competencies” in the title, abstract or keywords but are unrelated to the domain under study. Adopting an iterative process based on the result of the first scan for studies, we were able to identify a number of articles with high relevance. We also used the reference list in the journals we retrieved as a source for finding and retrieving additional studies. In this process, we ended up with a total of 1,694 written in English language.
- 5) All obtained articles are analyzed with VOS Viewer software and two types of output are generated: a co-citation analysis of cited references and bibliometric coupling of the 1694 articles identified. Bibliographic coupling clusters recent articles with fewer old articles whereas co-citation clustering does the opposite, being unable to cluster the most recent articles that have not yet been cited (Boyack & Klavans, 2010)
- 6) During the seventh and final step, we interpreted the results of the co-citation analyses and the bibliometric coupling. To interpret and label the theoretical orientations of each cluster, all articles were downloaded from Web of Science database.

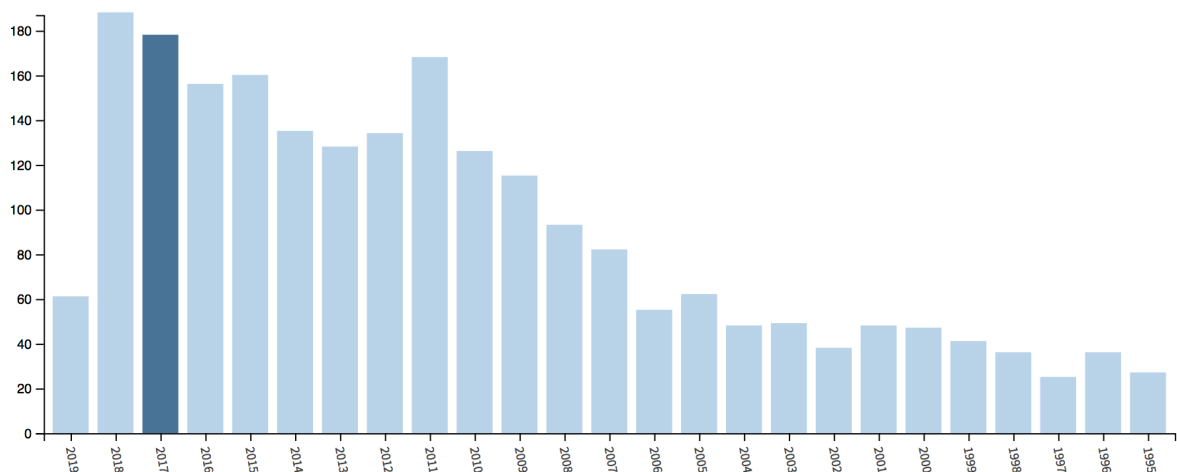


Figure 1. Number of scientific articles about managerial competencies per year.
Source: Web of Science

Although the journals included in Web of Science Core Collection meet the highest standards regarding impact factor and number of citations (Falagas, Pitsouni, Malietzis, & Pappas, 2008); (Chadegani et al., 2013), we decided to further evaluate the robustness of our bibliographic review by using the Scopus database. This allowed us to verify whether we had omitted relevant studies that could have affected our core findings. Our search queries in the Web of Science and Scopus

database produced 1,694 and 1,874 documents respectively. This disparity is in part explained by a difference in the search queries used. The same categories are not available in both databases: In Scopus, the filter “social” includes areas that do not exist in Web of Science categories. So, we decided, the next step should be to run a separate co-citation analysis using the Scopus file with VOS Viewer software to conclude whether our findings are robust or specific to the Web of Science database.

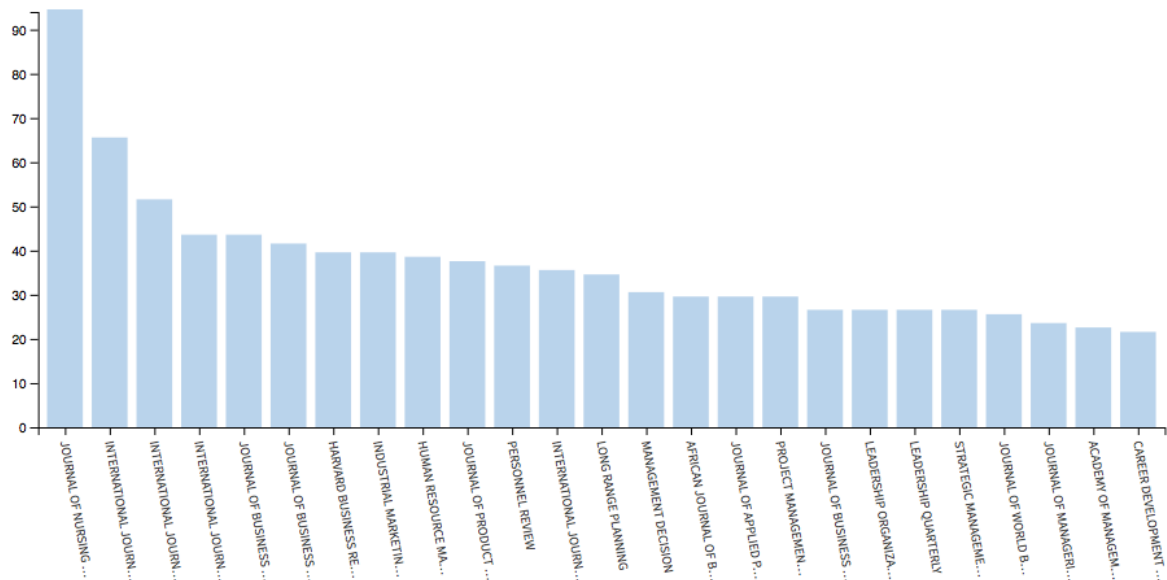


Figure 2. Number of scientific articles about managerial competencies per year per academic journal. Source: Web of Science

3 RESULTS

The validity of any bibliographic review depends in part on the selection of publications that form the input of the analyses. The journals included in the Web Of Science Core Collection meet the highest standards reporting impact factor and number of citations (Falagas et al., 2008). For this reason, obtained results from designed queries have been analysed, first in Web of Science Core Collection selecting Social Science Citation Index (SSCI) as a setting for the query, and then, to contrast the robustness of data, the same query has been proved in Scopus database ordering in both cases by relevance factor. In most queries, the number of documents obtained from Scopus is higher than the number from Web of Science Core Collection, so, we decided to begin analysing obtained articles from queries used in Web of Science database.

3.1 Previous systematic reviews of the literature on managerial competencies

First, we developed a search query for the Web of Science Core Collection database (WoS) to find previous systematic reviews of literature or meta-analysis including articles or reviews using the terms: “competence [and] managerial” and other similar combinations with: “competencies, competence, skills, leadership, leader, capability, manager or managerial” including “review, literature, systematic review, meta-analysis, state of the art, research domain, bibliographic review or bibliometric review” using all the available time span: 1956 – 2019. In the first query, no categories were selected, and we obtained 5 previous systematic reviews on these keywords; one in each following category: Business, Education Educational Research, Health Care Sciences Service, Health Policy Service and Management. If we focus on reviews or articles related to these categories in English language, the obtained 5 publications have been cited 16 times, and the sum times cited per year appear in Fig. 3.

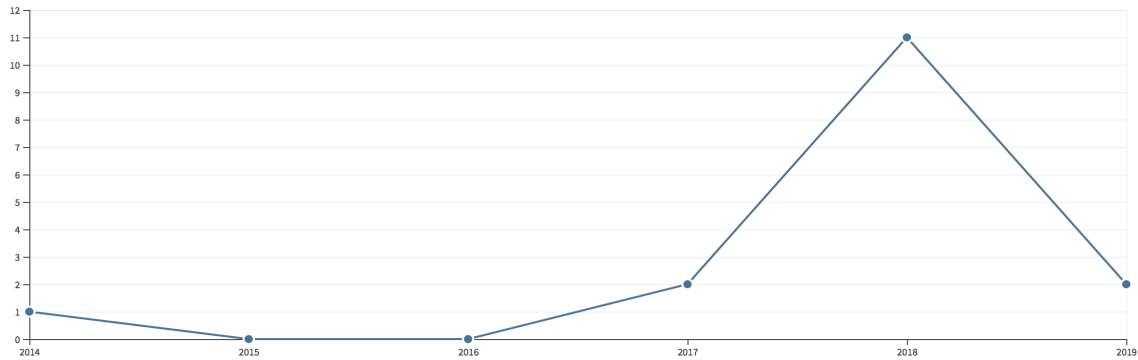


Figure 3. Sum of Times Cited per Year. Source: Web of Science

The most cited review, overview and meta-analysis on managerial competencies are analysed in Table 1 based on the Web of Science citations linked to Google Scholar search results. We looked for Google Scholar search results because Web of Science just counts citations within the WOS Core Collection.

Table 1. Most cited reviews on managerial competencies. Web of Science

Nr.	Authors	Title	Citations	Type	Field
1	Derwik, P. Hellstrom, D. 2017	Competence in supply chain management: a systematic review	16	systematic review	Supply Chain Management
2	Khoshhal, KI Guraya, SY 2016	Leaders produce leaders and managers produce followers: A systematic review of desired competencies and standard settings for physicians' leadership	10	Literature Review	General and Internal Medicine
3	Joaquim, BA Batista, PM Carvalho, MJ 2011	Systematic Review on the profile of competencies in sports managers	3	Systematic Review	Social Sciences
4	Ayelele, RO North, N Wallis, KA Liang, ZM Dunham, A 2016	Outcomes and impact of training and development in health management and leadership in relation to competence in Role: A Mixed-Methods Systematic Review Protocol	8	Mixed-Methods Research Synthesis	Health Care Sciences
5	Gunawan, J Aungsuroch, Y	Factors contributing to managerial	3	Systematic Review	Nursing

	Fisher, M	competence of first-line nurse managers: A systematic review			
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3.2 Cornerstones of managerial competencies research. Co-citation network.

Co-citation analysis allows us to reveal the theoretical foundations of the research field by assessing the similarities among cited articles (Boyack & Klavans, 2010). So, derived clusters from the co-citation analysis contain articles that are published prior to the articles included in the dataset. Fig. 4 shows the bibliometric network based on co-citation analysis. It displays three clusters (green, blue, and red). Items (authors and journals) are represented by their label, the size of the label and the circle of an item is determined by the weight of the item: the higher the weight of an item, the larger the label and the circle of the item. Lines between item present links, at most 1000 lines are displayed and represent the 1000 strongest links between items. The distance between two items in the visualization approximately indicates the relatedness of the items in terms of co-citation links: the closer two items are located to each other, the stronger their relatedness and the strongest co-citation links between items are also represented by lines (van Eck & Waltman, 2017).

Table 2. Clusters in Co-citation network. Source: VOS Viewer

Cluster	Items	Main author	Journal	Links	Citations
1 (Red)	196	Barney, J. (1991)	Management	283	157
2 (Green)	185	Podsakoff, PM. (2013)	Applied Psychology	363	181
3 (Blue)	25	Mayer, R.C. (1995)	Academy of Management review	119	45

The first cluster is referred to measure behaviours with statistic methods. The second one contains articles related to strategy and how reach competitive advantages. Finally, the blue cluster collects all the articles referred to marketing management area.

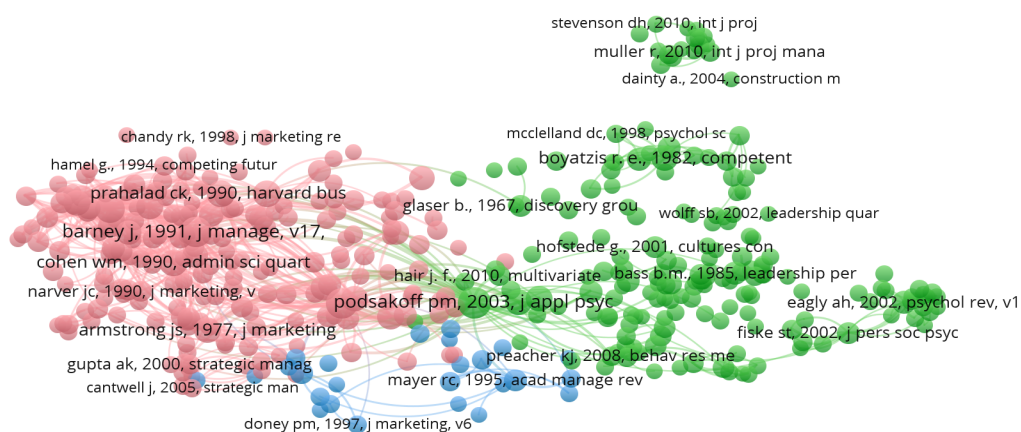


Figure 4. Co-citation network of references cited by managerial competencies publication between 2007 and 2016

VOS Viewer identified 89,778 cited references, to facilitate interpretation of the clusters we restricted our focus to references that were cited 20 times or more. This helps us to focus on the most important publications and facilitates interpretation of the identified clusters in the network. Our network of publications, shown in Fig. 4, consists of four clusters. Each cluster consists of vertices that represent the cited references. Publications represented by larger vertices are cited more often by the publications in our longitudinal dataset than those that are represented by smaller vertices. The distance between vertices corresponds to the likelihood of co-citation, the closer two vertices are located together in the network, the more likely these references will be cited together. In this respect, publications in a cluster are more likely to be cited together than any combination of publications from separate clusters.(van Oorschot, Hofman, & Halman, 2018)

Three identified clusters are analysed as cornerstones of managerial competencies research. In Table 2, we define each of the three clusters and assess the relative importance of each cluster, and the most cited author within it and the relationship with the others indicating the journal where the referenced articles are included.

3.3 Analysis of managerial competencies research trends based on bibliographic coupling.

In this section, we will unravel the current trends in the managerial competencies research by studying bibliographic coupling among the publications in our longitudinal dataset. Fig. 5 illustrates a relatively coherent bibliographic network with four clusters of references cited by the 1,695 publications on managerial competencies published between 2007 and 2019. The red, blue and green clusters are structured around a relative empty centre, which indicates that fields are more strongly tied than others (van Eck & Waltman, 2017). The yellow cluster, however, can be found with strong ties to the red cluster with only two items, both related to six-sigma projects. Table 3 shows, and overview of the research trends reflected in the four clusters obtained when we select the minimum number of citations as 12.

Table 3. Clusters in Bibliographic network. Source: VOS Viewer

Cluster	Items	Main authors	Article Title	Journal	Citations
1 (Red) Leadership	296	Dragoni, L. Tesluk, P. Russel, Y.	Understanding managerial development: integrating developmental, assignments learning orientations and access to developmental opportunities in predicting managerial competencies	Academy of management journal (2009)	109
		Rudman, L. Phelan, J.E.	Backlash effects for disconfirming gender stereotypes in organizations.	Research in Organizational Behaviour (2008)	174
		Carroll, B. Levi, L. Richmond, D	Leadership as practice: Challenging the competency paradigm	Leadership (2008)	140
		Morhart, F.M. Herzog, W. Tomczak, T	Brand-specific leadership: Turning employees into brand champions	Journal of marketing (2009)	

		Battilana, J. Gilmartin, M. Sengul, M. Pache, AC. Alexander, JA.	Leadership competencies for implementing planned organizational change	Leadership quarterly (2010)	78
2 (Green) Logistic and Project Management	184	Chen, CJ Huang, JW	Strategic human resource practices and innovation performance. The mediating role of knowledge management capacity	Journal of Business research (2009)	388
		Pettit, TJ Fiksel, J Croxtton, KL	Ensuring supply chain resilience development of a conceptual framework	Journal of Business logistics (2010)	205
		Muller, R. Turner, R.	Leadership competency profiles of successful project managers	International Journal of Project Management (2010)	172
		Pietrobelli, C. Rabellotti, R.	Global value chains meet innovations systems. Are there learning opportunities for developing countries?	World Development (2011)	150
		Hwang, BG Ng, WJ.	Project management knowledge and skills for green constructions overcoming challenges	International Journal of Project Management (2013)	101
		Rouleau, L. Balogum, J.	Middle management, strategic sensemaking and discursive competence	Journal of management studies (2011)	143
3 (Blue) Performance	175	Swink, M. Narasimhan, R Wang, C.	Managing beyond the factory walls. Effects of four types of strategic integration on Manufacturing plant performance	Journal of operation management (2012)	322
		Gu, F. Hung, K. Tse, D.	When does guanxi matter? Issues of capitalization and its dark sides	Journal of marketing (2008)	309
		Cepeda, G. Vera, D.	Dynamic capabilities and operational capabilities: a knowledge management	Journal of Business Research (2007)	233

			perspective		
		Aral, S. Weill, P.	It assets, organizational and capabilities, and firm performance: how resource allocations and organizational differences explain performance variation	Organizational Science (2017)	231

The fourth cluster contains only two articles about competencies in six-sigma projects, both of them from 2016: Marzagao, L. and Shokri, A.

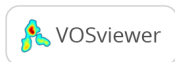
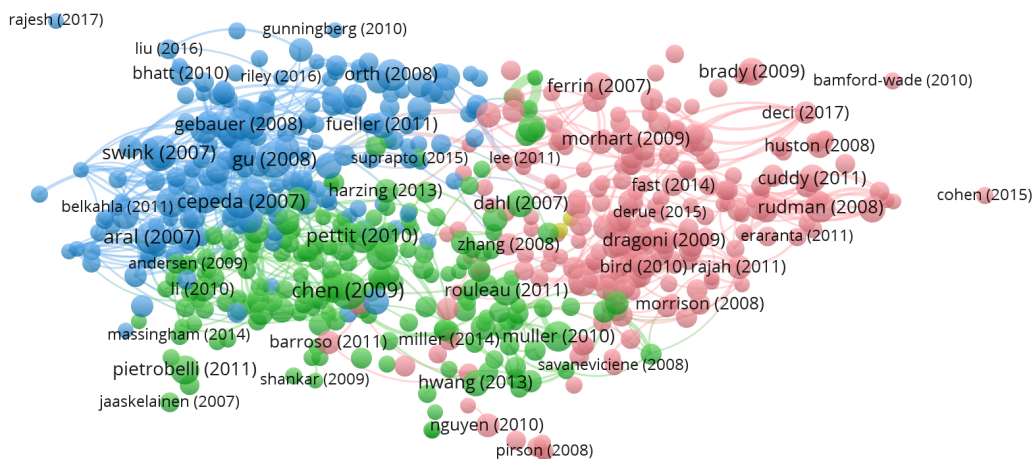


Figure 5. Bibliographic network of managerial competencies publication published between 2007 and 2019

4 CONCLUSIONS AND FURTHER RESEARCH

The next step in our research is to deepen in the study of the most important theories followed by the most relevant articles. In our research, 14 of the 1,694 identified articles are considered “highly cited papers in field” from Web of Science Core Collection, some of them cited more than 300 times. So, our further research consists on: For the most relevant obtained articles, we will six categories with variables related to our research question (See Table 4): 1) bibliographical data such as year of publication, name of author, title of article, name of journal, 2) methodologies used that collects type of study, timeframe of study and methods used, 3) empirical foundation with countries or sectors studied, 4) conceptual framework including concept, dimension of competence or model of study, 5) outcomes and 6) conclusion.

To conclude, form the analysis of the research literature, some additional direction for the future can be drawn focuses on finance sector because, our research identifies a gap in this area to be studied.

Table 4. Main categories with related subcategories used in coding the studies retrieved.

Bibliographical data	Methodologies used	Empirical foundation	Conceptual framework	Outcomes	Conclusion
Publication year	Type of study	Country	Concept of managerial competence	Statistical data	Impact on business
Author's name	Timeframe of	Population	Model of	Change in	Impact on

	study		competence	purchase behaviour	performance
Name of journal	Methods used	Sector			
Title of article					

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