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# **Overview of the Scientific Production of Competency-based Management in** the Brazilian Public Administration (2008 to 2018)

# ABSTRACT

**Objective:** to analyze the panorama of Brazilian scientific research on Competency-based Management (CBM) in Public Administration for the last decade, covering the period from 2008 to April 2018. from the characteristics of the publications, methodological aspects, the stages investigated and the main benefits and difficulties identified in the studies.

Method: through an integrative review of Brazilian scientific literature, 26 predefined variables were identified and analyzed, based in 82 articles published in conferences and journals, using descriptive statistics and thematic categorical content analysis.

Originality/relevance: the results from last decade papers were consolidated, differentiating by the scope of publications, quantitative of analyzed variables and inclusion of qualitative data.

Results: University of Brasilia is the institution with the largest number of authors in the period analyzed. Most studies were empirical, cross-sectional, descriptive, qualitative, with interviews and content analysis, in federal and executive organizations. Fragilities were observed in the methodological records and keyword indexing. Competence diagnosis was the main stage studied. Benefits refer to organizational and individual improvements. The main difficulties concern methodological and conceptual aspects, and the absence of organizational support, which is fundamental to competency-based management adoption and implantation, in order to obtain advantages oriented to the good governance of human resource management.

Contributions: a research agenda is suggested to contribute to the and methodological rigor of future investigations. auality Furthermore, the results contribute to public organizations regarding development and implementation of competency-based the management with quality and permanence of the model, enabling the improvement of service delivery to society and to the public servants.

**Keywords:** Competency-based management; Competence, Competence Diagnosis, Public Administration; Literature Review.

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# **1 INTRODUCTION**

Competences are regarded as a way to increase organizational efficiency, aligned with strategy and learning processes (Pires, 2016), besides enabling improvements in performance and effectiveness (Lima & Silva, 2015). Thereby, public organizations are increasingly concerned with the competence of their staff, since human capital is regarded as a key factor for their success (Skorková, 2016). Thus, studies indicate that human resources practices must be based in competences, since it is a beneficial leadership model to the development of both the private and the modern public sector (Audenaert, Vanderstraeten, Buyens, & Desmidt, 2014; Skorková, 2016). However, significant changes are needed in some human resources management areas that still bear a traditional bureaucratic and operational focus (Cintra, Oliveira, Barbosa, & Franco, 2017).

Competence mapping contributes with the identification of necessary competence gaps for the learning action planning, aiming to identify, develop, acquire and use them to achieve the main organizational strategy (Brandão & Bahry, 2005). Consequently, it assists in the allocation of people in roles compatible with their competence (Lime & Melo, 2017), as well as it collaborates to the integration and promotion of all human resources practices (Chouhan & Srivastava, 2014). Hence, it provides advantages for human resources management as a tool that concatenates hiring, evaluation and development (Skorková, 2016). The expected results from this management model could not be different for private and public sector, considering the achievement of learning and competence development, both organizational and individual, and strategic to the organization (Amaral, 2008).

In the Brazilian context, the adoption of competency-based management in the public sector has begun with the formalization of Decree 5.707/2006, considered a legal milestone, since it instituted the policies and guidelines for human resources development. In this sense, human resources management by competence is linked to the development of employees, the mobilization of resources and improvements in public service delivery, focusing on public interest (Lima & Silva, 2015). In the first years of 21<sup>st</sup> century, public sector has sought initiatives concerning innovation and flexibility of the management and governance, with the purpose of providing more efficiency and quality in the services offered to the citizens. Therefore, it is moving away from the bureaucratic model towards managerialism, with the perspective of introducing a new management culture, adapting and replicating some of the private sector practices (Brandão & Bahry, 2005; Lima & Silva, 2015). Velarde, Lafuente, Longo and Schuster (2014) underline the importance of competency-based management implantation for the advance and improvement in public service offered in Latin America countries. Skorková (2016) indicated that the government of OCDE countries have adopted competence models, demonstrating positive results.

Investigating the field of competency-based management is necessary to advance in researches and improve its applicability, regarding several aspects related to service provision, mainly those concerning adaptation and use of human resources inserted into fast changing contexts (Silva, Cavalcante, Macedo, Silva, & Silva, 2017). Furthermore, research suggestions about professional competence in Brazilian Public Administration were identified (Araújo Júnior & Martins, 2014; Ceribeli, Maciel, & Guilarducci, 2017; Landfeldt & Odelius, 2017; Mello, Fonseca, & Santos, 2015; Meneses & Fonceca, 2016; Montezano, Medeiros, Pinheiro, & Oliveira, 2019; Montezano, Silva, & Coelho Júnior, 2015; Silva, 2017; Silva, Mello, & Torres, 2013; Ubeda & Ferreira, 2016).

Meneses and Fonseca (2016) have made recommendations about the continuity of studies in this theme, affirming that this may foster the formulation of public policies in order



to improve competency-based management in the public sector. Silva *et al.* (2017), five years after Sena (2012), reaffirmed that there is a "spread of subjects", corroborating the complexity of the thematic and the importance of its deepening, both in private and public spheres. Cintra *et al.* (2017) highlighted that this thematic still lacks practical and theoretical consolidation.

Therefore, this study has the objective of analyzing the panorama of national scientific research about Competency-based Management (CBM) in Public Administration for the last decade, covering the period between January 2008 and April 2018, from the characterization of publications, methodological aspects, investigated stages and the main benefits and difficulties identified in the papers.

Although there are other bibliometric studies about competency-based management, both general (Mello, Fonseca, & Santos, 2015; Silva *et al.*, 2017) and specific to the public sphere (Araújo Júnior & Martins, 2014; Silva, Mello, & Torres, 2013; Ubeda & Ferreira, 2016), this research is necessary since it presents more analytical variables regarding methodological aspects, main references identified and the consolidation of the results from such publications. Besides, it presents a more comprehensive focus on conferences and journal papers, as well as updates of scientific research review in this specific theme for the Brazilian Public Administration context. From this, it will be possible to consolidate a research agenda that allows advances of CBM in the public sector for the improvement of service provision to society and also to the public servant performing their job.

# 2. THEORETICAL BACKGROUND

## 2.1 Competency-based Management

Beeck and Hondeghem (2010) postulate that the challenges in the 21<sup>st</sup> century for organizations imply a diversified work force for better use of human resources, focusing on the reduction of efforts in activities disconnected with the profile of each professional. The authors conclude that the introduction of competency-based management is useful to the evolution regarding a broader cultural and organizational reform. This means that the discussion about competency-based management is bigger than its own specification, involving questions related to organizational strategy, which makes its applicability a challenge for human resources management, being necessary to plan events that enable its effective implantation, which demands time (Silva & Mello, 2011).

For the effective implantation of competency-based management, firstly, it is essential to have a defined organizational strategy (Brandão & Bahry, 2005; Ceribeli *et al.*, 2017). Its definition must enable the identification, development and usefulness of individual competences for organizational success (Chouhan & Srivastava, 2014). Cintra *et al.* (2017) affirm that leadership support is fundamental so that the human resources management act strategically in competence development and in individual and organizational performance, which are articulated and influence each other reciprocally.

The competency-based management in the public sector is strategic and a way to plan, acquire, develop and evaluate the necessary competences, established in different levels – individual, collective and organizational – to achieve the organizational objectives (Brandão & Guimarães, 2001). This management model contributes to train public servants, evaluate performance, develop, manage information, compensate, retain skills and reduce forces through the identification and measurement of competences, aligned with the organizational objectives, as well as supporting efforts for the organizational change (Campion *et al.*, 2011).



In Public Administration, the Decree 5.707/2006 defines competency-based management as "management of capacitation guided to the development of a set of knowledges, skills and attitudes necessary to the performance of the functions of the public servants, aiming to achieve the objectives of the institution" (Decree 5.707/2006, p. 1). The purposes established in this policy regarding CBM implantation refer to the provision of improvements, from technical, political, economic and social aspects, which entail mutual benefits for both Public Administration and public servants, as proposed by Brandão and Bahry (2005).

The competence model, considering the definition of competences related to the dependency of the organizational context (Montezano, Abbad, & Freitas, 2016), when directed to a specific organization, cannot be generalized to other realities since it is variable and specific to each work context. Additionally, its delineation depends of the organizational culture, being a continuous and permanent process to the achievement of organizational objectives (Munck, Munck, & Souza, 2011).

As competency-based management stages, Brandão and Bahry (2005) suggest: strategy formulation; competence diagnosis; competence acquisition and development; monitoring and evaluation; and, finally, reward. The authors reinforce that competence mapping is central to CBM, since it identifies the essential competences and guide other human resources subsystems.

Skorková (2016) indicated as positive results of competency-based management more efficacy in recruitment process, due to the clarity and for being rule-based; improvement in communication, because it is clearer and broader for employees; and improvement in capacitation processes, such as the implantation of personalized training and development processes. An organizational benefit originated from the effective implantation of CBM is the increase of commitment of the professionals and, consequently, a positive impact in work motivation (Ceribeli *et al.*, 2017). Besides, the model enables career planning and talent management (Brandão & Bahry, 2005; Skorková, 2016).

# 2.2 Bibliometric Studies of Competency-based Management

Published articles presenting national bibliometric studies about competence or competency-based management in public context were sought, even those cases comparing with studies in private organizations. Table 1 contains a list of these researches with information regarding quantity of articles analyzed, period and source of publication, and research objectives.

By analyzing the articles, it was observed that, besides using different search criteria, these articles have analyzed distinct aspects in order to achieve their objectives. In the following, the main results of each research are presented.

Sena (2012) concluded that the concept of competence is being widely used, linked to questions such as people recruitment, organizational learning, leadership and managers' formation. Qualitative approach has predominated in the researches. The author has exposed the incipiency of CBM studies and pointed out the great diversity of concepts, notions and dimensions, which increases the complexity of its applicability, suggesting a deeper analysis of the variables and results in other journals.

Silva, Mello and Torres (2013) conducted a systematic review of articles about competency-based management in the public sector and identified the existence of some practices regarding the applicability of competence notion, mainly concerning the investment in capacitation and development. They have highlighted that the path is still long for the CBM



adoption, especially in the public sphere, since cultural barriers may clutter the inclusion of new actions and practices.

Reference	Period	Source	Number of Papers	Objective
Sena (2012)	1996 to 2011	Journals: Revista de Administração Pública, Revista do Serviço Público and Cadernos EBAPE	20	Investigate thematic and methodological trends of the production about competency-based management in Public Administration in Brazil.
Silva, Mello and Torres (2013)	2000 to 2011	Scielo database	6	Analyze the discussions on the articulation between competency-based management and public sector.
Araújo Júnior and Martins (2014)	2006 to 2013	Brazilian Institute of Information in Science and Technology and annals of EnANPAD	33	Analyze empirical research about competence on Public Administration, focusing on the Decree 5707/06.
Mello, Fonseca and Santos (2015)	2007 to 2013	Papers from the Human Resources Management and Work Relations Meeting (EnGPR), promoted by ANPAD	59	Conduct a bibliometric study about competence and competency-based management.
Ubeda and Ferreira (2016)	2002 to 2015	Journals classified between B3 and A1 by <i>Qualis</i> CAPES criteria	62	Investigate the challenges in the adoption of competence perspective in the strategic management of human resources in the public sector context.
Silva <i>et al.</i> (2017)	2006 to 2017	20 journals from Business Management area classified from B2 to A1 by <i>Qualis</i> CAPES criteria	52	Analyze the characteristics of the scientific production about competency-based management.

# Table 1 Synthesis of the bibliometric studies analyzed

Araújo Júnior and Martins (2014) noticed the predominance of studies focused on the three classic dimensions of competence – knowledge, skills and attitudes (KSA), studies focused on competence identification, analysis of the contribution and application of this model, and researches about the influence of practice in competence development. Finally, they suggested deeper investigations about the benefits achieved by Public Administration, reinforcing that this model may provide necessary conditions to competence development.

Mello, Fonseca and Santos (2015) identified the predominance of qualitative studies about individual competence concepts and KSA. The articles revealed more discussions in the theoretical field than in practical field. As a justification, there is the regulation of specific laws that limit the adoption of CBM model actions, more feasible in the private sector, such as remuneration and succession by competence.



Ubeda and Ferreira (2016) confirmed the challenges for the comprehension and application of the competence perspective in public organizations, also indicating the necessity of a deeper investigation about management tools that can be used in these organizations. The correlated subjects studied the most were remuneration and career, organizational climate and training. The theme competency-based management was indicated as underexplored. The authors highlighted that this is a broad field of investigation and publication, calling attention to the quality of publications, given the few studies about this theme in top journals.

Silva et al. (2017) revealed that the rhythm of scientific articles production about CBM is linear, with a high concentration of articles in only a few journals. The journals with more than five publications were Revista de Administração da USP – RAUSP (9), Revista de Administração Contemporânea – RAC (6) and Revista de Ciências da Administração (6). Most of the articles were qualitative, exploratory and case study. Only two articles in Public Administration were identified. The institutions with higher quantity of authors were the University of São Paulo (USP), Getúlio Vargas Foundation (FGV) and State University of Londrina (UEL).

# **3. METHOD**

This is a descriptive research, through an evaluation of the national scientific production, performed in five stages. First stage concerns in defining the theme and research questions, and the second stage defined databases and article inclusion and exclusion criteria, conforming Table 2.

Research Delimitations				
Criteria	Preliminary Definitions			
Theme	- Competency-based management in Brazilian Public Administration			
Research Questions	<ul> <li>Where and when the publications on the theme were conducted?</li> <li>Who are the main authors and their institutional affiliation?</li> <li>What are the main references used in the researches?</li> <li>What are the methodological aspects adopted?</li> <li>The studies were conducted in which organizations?</li> <li>Which competency-based management stages were studied?</li> <li>What are the main difficulties and benefits from the implantation of competency-based management identified in the studies?</li> </ul>			
Database	- Capes Journals; SPELL; SCIELO; Google Scholar; Proceedings from ANPAD, SEMEAD and CONSAD conferences.			
Inclusion criteria	<ul> <li>Publication in Brazilian journals between January 2008 and April 2018.</li> <li>Full published scientific article.</li> </ul>			
Exclusion criteria	<ul> <li>Publications that are not scientific articles (manuals, books, round tables, citations).</li> <li>Publications about competency-based management in general or in contexts different from the Public Administration.</li> </ul>			
Keywords	- Competency-based Management + Public Administration or Public Sector or Public Service			

Table 2



The decision of analyzing publications in conferences has the purpose of obtaining scientific productions that did not have enough time to be published in journals, and those afterwards published in journals, because they originate in past conferences.

The third stage identified and selected the articles by title and abstract analysis in the databases, considering the established criteria. The 85 publications were identified, with three of them being published in conference and journal, resulting in 82 articles to be analyzed. The fourth stage consisted in reading the full article, categorizing the information from the papers and fulfilling a 26 variables Excel sheet. After the categorization, a different researcher than the one who had performed the first analysis of the article made the validation and eventual adjustments.

In the fifth and last stage, data were consolidated using descriptive statistics (frequency) for most of the categories, with exception of difficulties and benefits of implantation, which were submitted to content analysis. A word cloud with the keywords used in the articles was created using IRAMUTEQ.

## 4. RESULTS AND DISCUSSION

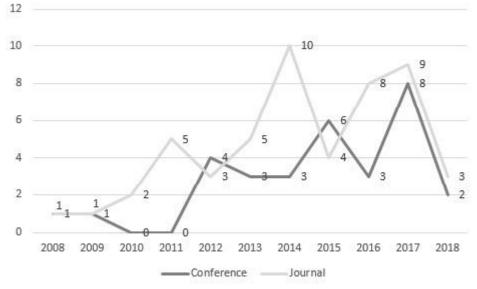
From the 82 analyzed articles, 31 were published in scientific conferences and 51 in journals. It must be highlighted that only three journal publications were presented before in conferences (two in ENANPAD and one in CONSAD), one of them was published in the same year in a journal, another took two years and the last one, three years to be published. This reinforces the need of including conference papers in this work, because about 38% of the studies in the last ten years were not published in journals afterwards. Although publishing in a journal after a conference is not an obligation, this could be an opportunity of improvement for the event production, considering the discussions and the feedback for journal submission.

Thus, the possibility of contributing with scientific production in the area arises, enabling higher access of the publication since journals are indexed in databases of article search. This gap in publications, which stop in the conferences and are not published in journals, needs to be analyzed in two aspects: (i) possibility of low quality of conference publications, that is, these were not published due to the fact that the publications did not reach the requirements of scientific journals; or (ii) the authors did not proceed with the research to submit to a scientific journal, limiting the access to knowledge, since conference proceedings not always have open access.

Regarding the year of publication of these articles, Figure 1 demonstrates the quantitative by the type of scientific production each year, enabling to infer that from 2014 to 2017 the total production was over ten articles by year. In 2017, the quantity of publications was the most expressive and almost the same, both for conferences and journals. The specific production on competency-based management about Public Administration differs from the result of linearity over the years indicated by Silva *et al.* (2017).

From the 51 journal articles, it was observed that 68,6% were published in the upper categories of *Qualis* CAPES in the quadrennial 2013-2016 – A2 (15,7%), B1(19,6%) and B2 (33,3%) – and 23,5% were published in categories B3 and B4. Although most of them are in upper categories, there is little publication in journals from A category. Besides, 7,8% were published in journals without *Qualis*. This result leads to a reflection: despite the strategic relevance of the theme for organizations, most of the studies have not been published in journals in the upper categories of *Qualis* CAPES, as identified by Ubeda and Ferreira (2016). The quantity and percentage of publication by journal, with *Qualis*, are explicit in Table 3.





**Figure 1.** Scientific Production on competency-based management between 2008 and April 2018 Table 3

Article	publication	hv	iournal
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Journal	Qualis	Number of Articles	%
Revista de Administração Pública	A2	4	7,8
Revista do Serviço Público	B2	4	7,8
Cadernos EBAPE.BR	A2	2	3,9
Revista de Administração da UFSM	B1	2	3,9
Revista de Administração Mackenzie	B1	2	3,9
Revista de Ciências da Administração	B1	2	3,9
Revista de Gestão e Secretariado	B2	2	3,9
Revista Eletrônica de Gestão Organizacional	B2	2	3,9
Other journals with only 1 publication		31	60,8

It was observed that the publications were, mainly, in scientific journals of Public Administration context. Only the *Revista de Ciências da Administração* has also appeared between those who published the most in the study of Silva *et al.* (2017) for competency-based management in general.

Regarding the 31 articles published in conferences, 25,8% were from ENANPAD, 19,4% from ENGPR, 12,9% from CONSAD and 9,7% from SEMEAD. Two publications were identified in CLAD, ENAJUS and SINGEP; and one publication in EnAPG, Regional Conference and International Health Conference, Work and Education, Research and Postgraduate Seminar on Business and Socioeconomic Sciences, and International Seminar on University Libraries. This finding helps researchers in the area to identify possible conferences that demonstrate interest in the competency-based management theme in Public Administration.

Most of the articles were written in author partnership. From them, 42,7% had two authors; 32,9% three authors; 8,5% four; 2,4% with five; and 1,2% with the participation of seven authors. Only 12,2% were written by a single author. In these partnerships, it was observed that 43,9% happened between researchers from the same national Higher Education Institution (HEI), followed by 30,5% of authors from different national HEI. This means that the partnerships between authors from distinct institutions is still something incipient in this research field. Besides, in 8,5% of the publications, it was identified the lack of institutional information about the authors, which has made impossible to identify the partnership. In



8,5%, there was a partnership between authors from HEI and employees of public organizations. In 7,3%, it happened with participants of only one national public organization and, with the lower percentage (1,2%), between authors from different international HEI.

In total, 168 different authors were identified as participants of the 82 articles. It was observed, regarding the productivity of the authors, that eight of them produced three or more articles, 13 wrote two articles and 147 participated in the elaboration of only one article. The author with the highest production was Simone Portella Teixeira de Mello (Federal University of Pelotas – UFPEL) with six publications, four of them in partnership with Francielle Molon da Silva (UFPEL). These authors have been writing about this theme since 2011.

Concerning the institutional affiliation of the authors, seven publications did not have this information. In the others, 71 different institutions were identified: University of Brasília (UnB) was the one with the higher quantitative, totaling 20 authors, followed by Federal University of Santa Catarina – UFSC (9), Federal University of Rio Grande do Sul – UFRGS (8), University of São Paulo – USP (7), Federal University of Minas Gerais – UFMG (7), UFPEL (7), Federal University of Pampa – Unipampa (6) and University Nove de Julho – Uninove (6).

1515 different references in the text of the 82 articles were registered, most of them national (72,8%), according to Table 4. Regarding the type of reference, most of them were books (37,8%), followed by articles published in scientific journals (36,9%). The most used references were: a) book, national, from Dutra (2004), present in 45,5% of the articles and the international book of Boyatsis (1982) in 19,5%; b) journal article, national, Fleury and Fleury (2001) in 37,8%; Brandão and Bahry (2005) in 30,5%; and, international, McClelland (1973) in 17,1%; c) conference paper, national, Amaral (2008) in 9,8%; and d) regarding national regulations, the Decree 5707/2006 in 46,3% of the articles analyzed.

References National International Book 439 134 Journal article 308 251 20 Conference paper 103 3 Institutional document 103 Academic works (monographs, theses and dissertations) 72 1 61 2 Norms Others (news from websites, newspapers or interviews) 0 18 Total 1104 411

Table 4

<b>Types of reference</b>	used in the n	raduction of the	articles analyzed
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When analyzing the references used, a low use of international production was observed, which can be a result of the search for more specific references about the national experience given the proximity of the work context. Another negative point is the fact that less than half of the references (45%) are from scientific productions (journals or conferences). It is important that researchers address this in order to improve the quality of the productions.

The recurrent keywords in the articles were competency-based management (24 articles), competence (19), human resources management (16), public management (11), Public Administration (10), managerial competences (8) and public sector (7). Figure 2 illustrates the word cloud of this information. It is noteworthy that 12 articles did not inform keywords. It can inferred that there is no consensus between authors about the use of indexing



terminology: competency-based management sometimes is used, in others, only competence, as well as the variations for the terms public management, public administration, public sector and public organization. This indicates the need of expanding research descriptors, as synonyms, as those used in this research. From Figure 2, it can be inferred the prevalence of studies about managerial competences, competence mapping stages and performance evaluation, in Electoral Justice organizations and Universities.



Figure 2. Word cloud created in IRAMUTEQ

*Note.* The word competency-based management was modified from the original version of the article due to IRAMUTEQ word limit for word cloud creation.

By analyzing the purpose of the articles, it was identified that 34,1% explore competency-based management in general, 57,3% studied only one stage of CBM, 2,4% two stages, 2,4% three stages, 2,4% five stages and 1,2% four stages. In the cases without specific indication of the competency-based management stage, the stages from Brandão and Bahry's (2005) model were used for classification. Among the studies exploring at least one stage, 36,6% focused in competence diagnosis 18,3% in competence development, 15,9% in competence acquisition, 9,8% in evaluation by competences, 2,4% about remuneration by competence, and 2,4% of positions and salaries by competences. It was identified one study that promoted a competence diagnosis for work force dimensioning. This indicates implantation, especially of the diagnosis and competence 5707/2006, aligned to the findings from Araújo Júnior and Martins (2014).

Regarding the nature of the studies, 10 articles were theoretical and 72 were theoretical-empirical. In the theoretical articles, five of them were based on literature reviews, two conducted bibliometric studies, one performed a comparison of the CBM model applicability for Public Administration, one conducted a comparison with the experiences from other countries and one of them proposed a capacitation system based in competences.

The methodological aspects, which will be presented in the following, are specifically from the theoreticial-empirical studies (72 articles). Regarding the temporal cut, 93,1% had transversal cut and only 6,9% longitudinal cut, demonstrating the lack of studies about the evolution of competency-based management phenomena over time. This indicates a gap to be explored in future researches, since monitoring change and CBM implementation processes in an organization demands a long period of investigation.



The predominance of descriptive studies was observed (75%). Exploratory studies represented only 13,9%, followed by exploratory-descriptive studies with 11,1%, different from what Silva *et al.* (2017) found. Qualitative approach was predominant (63,9%), as the findings from Sena (2012) and Silva *et al.* (2017), followed by mixed approach (qualitative and quantitative) in 20,8% of the articles, and quantitative approach in 15,3% of the works. The papers used, mostly, primary data (47,2%), followed by mixed data (primary and secondary) in 40,3%, and secondary data in 12,5% of the researches. Mixed approach adoption is still low, not following the recommendations about its adoption in researches, as proposed by Brandão and Bahry (2005).

About sampling, the non-probabilistic sample has predominated in 80,6% of the articles, and it was possible to identify in 32 articles the specific type of sampling: 15 by convenience, 15 intentional and, lastly, two articles mixed intentional and by convenience, depending on the technique used (interview and questionnaire). It is important to inform that 11,1% of the articles did not classify the sample since they used documental research or participant observation. In 5,5% of the articles, there was not enough information to classify the sample. In 1,4% the sampling was census-based and in 1,4% was probabilistic stratified. In general, the articles do not specify the type of sampling used, and the authors of the present paper have done the necessary classification based in the analysis of the article.

Data collection strategies were: case study (54,2%), survey (37,5%) and literature review (2,8%). Phenomenology, documental research, action research and experience report represent 1,4% each. These findings converge with the results presented by Montezano *et al.* (2015) and Silva *et al.* (2017) regarding the use of case studies in CBM and competences researches in Brazil. In relation to the data collection techniques, 50% of the researches used only one data collection technique, 26,4% used two techniques, 15,3% three techniques, 6,9% four, and 1,4% did not indicate the data collection technique used. Hence, it was observed that research still need to advance in the use of data collection techniques in order to follow the guidance of Brandão and Bahry (2005), as well as for triangulation of these techniques, providing an increase in the quality of the researches.

Between data collection techniques, interview was used in 52,8% of the empirical articles, documental research in 50%, observation in 13,9%, questionnaire in 41,7%, focus group in 12,5%, literature review as a data source in 4,2%, round table in 1,4% and 1,4% did not inform the technique. For data analysis, content analysis was the most used technique (59,7%), even in cases that collect data through questionnaires with open questions. Next, there were 30,6% of documental analysis, 30,6% of descriptive statistics, 13,9% of other techniques for qualitative data analysis (interpretativist, matching, inductive hermeneutics, reflexive and protocol CIMO), 11,1% of multivariate statistics, 5,6% of inferencial statistics, 2,8% of bibliographic analysis, 1,4% of discourse analysis.

Between the articles that specified the use of statistical technique, the ones used were: frequency (17 articles), mean (9), exploratory factor analysis (8), standard deviation (5), Mann Whiteney test (3) Kruskal Wallis test (3), linear regression (2), median (2), IPG (2), Spearman correlation (1) and Wilcoxon test (1). Even though these techniques are aligned with the research objective, a gap was observed regarding the use of statistical techniques to validate diagnosis instruments, which have been elaborated mainly by qualitative approach, as well as the use of inferential and multivariate statistics to investigate relations between variables.

In general, it was verified that there is fragility in methodological aspects in the production of CBM in Public Administration, since most of them do not classify research, do not explicit sampling, technique and data analysis used in the articles. Using the description of the results of the articles, some classifications were made by the authors of this paper.



Between the empirical studies, 45,8% did not inform the Brazilian state where the research was conducted, 48,6% investigated public agency from one state and 1,4% explored 2, 3, 4 and 27 states each. From the 27 Brazilian states, 18 had some Public Administration organization with a publication about competency-based management. The most expressive states were Santa Catarina (7), Pernambuco (5), Rio Grande do Sul (4) and Minas Gerais (4). Besides, Bahia, Paraíba and Paraná appeared in three articles; Ceará, Mato Grosso, Rio Grande do Norte in two; and Amazonas, Distrito Federal, Goiás, Mato Grosso do Sul, Rio de Janeiro, Rondônia, São Paulo and Tocantins, in one article.

Most of the investigated organizations are federal (69,4%), followed by 13,9% state, 4,2% municipal, 4,2% public organizations in general, 1,4% federal and state and, finally, 1,4% federal, state and municipal. It must be highlighted that 5,6% of the researches did not show enough information to classify them. Regarding the power sphere, 75% are linked to the Executive, 15,3% to the Judiciary, 1,4% to the Legislative, 1,4% not linked to any power (Public Prosecution Service), 4,2% to public organizations in general, and 2,8% did not present information for this classification. 43,1% of the empirical studies were conducted in public higher education institutions.

It was possible to consolidate 45 difficulties related to the implantation of competency-based management in the articles analyzed, which were grouped in six categories, according to Table 5, that indicated the quantity of articles that reported such difficulty. It can be noticed that there are more difficulties related to methodological and conceptual aspects of the CBM model itself, a result aligned with Sena's (2012) conclusion, followed by the lack of organizational support. The most reported difficulty refers to the organizational culture of Public Administration, present in 15,9% of the articles, revealing a point of attention since culture is a fundamental premise for CBM adoption, in accordance with Munck, Munck and Souza (2011).

Categories	Difficulties	Quantity of Articles
	Organizational culture	13
	Organizational changes challenge	4
Organizational	Resistance of employees	4
Behavior	Resistance of managers	3
	Organizational climate	2
	Disbelief about possibilities of change	2
	Time required for development and implantation	4
	Psychological aspects of the implantation team (motivation, beliefs)	3
	Excess of work of competence mapping teams	3
Difficulties of the managers and	Unfamiliarity of managers about competence capacitation laws	2
implantation	Lack of a specific and qualified team for implantation	2
teams	Implantation process communication problems	2
	Lack of team unity	1
	Turnover of professional in the team responsible for competency-based management	1
Particularities of	Normative and legal aspects	6

#### Table 5

<b>Difficulties in</b>	competency-based	management im	plantation



Categories	Difficulties	Quantity of Articles
Public	Discontinuity of demands caused by management turnover	3
Management context	Bureaucratic models and public service dysfunctions	3
•••••••	Difficulty of paying by competence	2
	Stability of the public servant	2
	Lack of autonomy and flexibility in management	2
	Lack of guidance from the federal government	2
	Political aspects	1
	Difficulty of accessing confidential information	1
	Admission in public service only through knowledge	1
	Methodological and conceptual challenges	3
	Lack of a systematized model of implantation, covering all Human Resources processes	3
	Elaboration of competence descriptions complexity	2
	Complexity in the development and adoption of a CBM model	2
Mathe delesion	Difficulty of relating new practices to the subsystems	2
Methodological and conceptual	Lack of results shown to the managements hinders model credibility	2
difficulties of	Difficulty of implantation by quantitative methods	1
competency-based management	Difficulty in associating capacitation actions to the organizational strategy	1
management	Data analysis failure	1
	Lack of future vision for the model development	1
	Fragilities in the evidences of competence validity (content, reliability and predictive validity)	1
	Tendency of high evaluations for competences	1
	Lack of top management support	6
	Lack of people	3
	Contingency of budget resources	2
	Lack of clarity about competency-based management for the public servant and managers	2
	Lack of material resources	2
Organizational	Lack of technological support	2
support	Lack of perspectives and incentives regarding career	1
	Lack of infrastructure	1
	Lack of instrumentation for implantation	1
	Lack of financial resources	1
	Monitoring people by using old managerial tools of control	1
	Organizational structure rigidity	3
Characteristics of	Organization size	3
the organization	Geographic limitations Lack of participation of the sector responsible for the implantation of CBM in the main management processes	2 1



Table 6

It was possible to identify 37 benefits brought by CBM adoption, which have been grouped in two categories, subdivided in 12 subcategories, as stated in Table 6. Between the mentioned benefits and those in higher quantity, it was noted that CBM contributes with organizational improvements, followed by improvements to the individuals. The most frequent benefits in the articles (9,8%) concern the direction of capacitation efforts and the possibility of competence development.

Categories	Subcategories	Benefits	Quantity of Articles
	Selection by competence	Selection focused in the profile needed	4
	Competence diagnosis	Competence mapping Emergent competences identification	2 1
		Guides capacitation efforts	8
		Competence development possibilities	8
	Competence development	Linking performance evaluation results to the identification of people development needs	2
		Higher involvement and support from top managers regarding capacitation policies	1
	Career	Career management improvements	4
	management	Successor policy development	1
Improvements in human resources		Employee valorization and satisfaction	2
practices	Human resources retention policies	Facilitating talent retention due to the opportunities of development and movement	1
	Human resources	Improvement in human resources allocation	2
	movement	Transparency in human resources movement processes	1
	Human resources planning	Enables work force dimensioning	1
	Remuneration by competence	Remuneration system becomes fairer	1
		Subsystems integration in a single model	3
	Integration	Human resources policies and practices alignment	1
	between practices	Commitment with health, education and safety promotion	1
		Strengthening of capacitating units	5
		Strategic alignment	4
Performance improvements	Organizational	Management focused in results	3
mprovements	improvements	Management improvements	2
		Improvements in organizational climate	2

## Benefits of competency-based management implantation



Categories	Subcategories	Benefits	Quantity of Articles
		Improvements in organizational processes	2
		Work organization	2
		Productivity	2
		Contributes to achieve organizational goals and objectives	1
		Public resources optimization	1
		Competences brings relevance to the attitudinal aspects of work	6
		Clarity of what is expected from employees	3
	Improvements in individuals	Enhance of employees' motivation due to the possibilities of career progression	2
		People involvement	2
		Improvements in the performance of the employees	2
		Incentive to employees' multidisciplinary	1
		Improvements in the relation manager-employee	1
	Benefits for society	Improvement in public service offer	3
	Denemis for society	Social and economic development	1

# **5. CONCLUSION**

This article presents an overview of the scientific publication about competency-based management in Brazilian Public Administration. CBM in the public sector is strategic and contributes to the quality of services offered to society, being its implantation and development a challenge for public managers and public servants. It was identified and analyzed, in this study, barriers and facilitators that must be addressed for the effective adoption of CBM, in order to obtain the advantages that will guide the good governance of strategic human resources management in public organizations.

In relation to the limitations of this research, there is the difficulty in finding all the information planned to be analyzed, since the publication presented fragilities in the description of the methodological aspects. This has generated another limitation to the researchers, who had to classify some of the variables in the methodological aspects, extrapolating the objective of this paper, which may create flaws and not represent, exactly, what was planned by the authors of the articles under investigation.

It can be inferred, from the findings from Mello, Fonseca and Santos (2015) and from Decree 5707/2006, that there are gaps in the implantation of competency-based management, once there are no deadlines to the implantation and evaluation of CBM impact in public sector since the promulgation of the decree. In addition, no guidelines were established regarding the procedures to put into practice this management model. Years later after these authors' study and the applicability cases are still scattered. There are more research and discussion about the theoretical foundations than effective actions of implantation and cases of success.

Considering the Decree 5707/2006 as the legal milestone of competency-based management implantation in the public sector and the existence of researches covering from concepts to advantages, difficulties and challenges of this implantation, it is believed that, despise the advances, there are questions that still need to be answered by scientific production. Why the effective implantation of CBM model is not taking place in practice? What are the main contributions of CBM in the public sector? Is there a need for reformulation of the decree or other laws and norms so the public sector effectively adopts the



CBM model? What is missing to regulate the evaluation and control of CBM in the different public organizations? How does government transition affects the progress and the legitimacy of CBM in public organizations? What actions must be conducted to minimize these impacts? Looking to the private sector and adopt managerialism based on theories and decrees are not enough: public sector needs a good and effective competency-based management in order to advance in quality and development for the individuals and the public organizations.

Based on these questions and on the findings of this work, this paper recommend researches to advance in competency-based management in public administration and contemplate: (1) longitudinal studies, in order to monitor the evolution of the implantation process over time, since it is a long process to its effective adoption (Silva & Mello, 2011); (2) development of competency-based management implantation maturity models, to be applied and evaluated; (3) identification of measurable results of CBM implantation in public organizations; (4) investigations about how CBM contributes effectively to innovation in public sector; (5) use of mixed methods and more than one data collection technique for triangulation and higher consistency of scientific results consistency; (6) use of multilevel approaches of the effects of individual competences in teams and organizational performances; (7) expansion of research in this theme, in different spheres of power and in federal, state and municipal scope; (8) investigations about how CBM contributes with human resources management governance and the organization as a whole; and, lastly, (9) studies identifying and describing experiences of good practices in the implantation of CBM in Public Administration, sharing and contributing with other organizations.

The way this work was conducted, with rigor and methodological consistency, under a critical and reflexive lens, contributes to the development of higher quality researches. It is found, in this study, information that enable the identification of journals and conferences that privilege publications in the area, and questions and directions for possible future investigations.

To the public organizations, this set of information and references contribute not only with the implantation of CBM, but in relation to the quality, development and continuity of the model, once it enables the configuration of preventive actions from the acknowledgment of benefits and difficulties. Furthermore, new efforts could elaborate new models, according to the recommendations of this research and the theoretical models identified in literature, respecting the particularities of each context.

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## Panorama da Produção Científica da Gestão por Competências na Administração Pública Brasileira (2008 a 2018)

#### **RESUMO**

**Objetivo:** analisar o panorama de pesquisas científicas nacionais sobre a Gestão por Competências (GC) na Administração Pública na última década, contemplando o período de 2008 a abril de 2018, a partir da caracterização de publicações, aspectos metodológicos, etapas investigadas e os principais benefícios e dificuldades identificados nos estudos.

*Método:* por meio de revisão da literatura nacional, foram identificadas e analisadas 26 variáveis pré-definidas de 82 artigos publicados em eventos e periódicos, com uso de estatística descritiva e análise de conteúdo categorial temática.

**Originalidade/relevância:** consolida resultados de publicação da última década, diferenciando-se pela abrangência das publicações, quantitativo de variáveis analisadas e inclusão de dados qualitativos.

Resultados: a Universidade de Brasília é a instituição com maior quantidade de autores nas publicações. A maioria dos estudos foram empíricos, transversais, descritivos, qualitativos com uso de entrevistas e análise de conteúdo, em organizações federais e do poder executivo. Observou-se fragilidades nos registros metodológicos e indexação de palavras-chave. A principal etapa estudada foi o diagnóstico de competências. Os benefícios referem-se a melhorias organizacionais e individuais. principais dificuldades concernem As aspectos metodológicos e conceituais, e falta de suporte organizacional, que precisam ser gerenciados para a efetiva adoção da GC, a fim de obter ganhos orientados à boa governança da gestão de pessoas.

**Contribuições:** sugere-se agenda de pesquisa para contribuir com a qualidade e rigor metodológico de novos estudos, e auxiliar organizações públicas no que tange ao desenvolvimento e implantação da GC com qualidade e permanência do modelo, privilegiando a melhoria da prestação de serviços à sociedade e ao próprio servidor público em seu trabalho.

*Palavras-chave:* Gestão por Competências; Competência, Diagnóstico de Competência, Administração Pública; Revisão da Literatura.

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