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Quality in public administration: A causal configuration analysis

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Abstract

This article presents a qualitative study about the influence of Knowledge Management and Intelligence for a greater quality in decision-making and greater efficiency and effectiveness in the execution of the public activity. Data was gathered from the perspectives of public managers from southern Brazil and it was collected using semi-structured interviews. Fuzzy-set Qualitative Comparative Analysis technique was applied to identify the paths leading to quality, efficiency and efficacy in the public administration. Results suggest that Knowledge Management and Intelligence are relevant for the quality of public managers' decision-making, as well as for a greater efficiency and effectiveness in the execution of public activities. Findings also address the combination of these aspects with the support from the senior management and the existence of financial incentives. Additionally, results indicate that the absence of quality in decision-making and in the efficiency and effectiveness of the public activity are related to the absence or reduced use of elements of Knowledge Management and Intelligence in the Public Management.

Keywords: Public Management, Knowledge Management, Intelligence, fuzzy-set Qualitative Comparative Analysis (fsQCA).

Introduction

According to the Forrester Research (2014), governmental agencies must find better ways to use data to meet citizens' expectations and deliver services in an era of unprecedented data volume and widespread mobile connectivity. According that research, in this context, "smart" governments become strong players, since they can improve access to information and services, facilitate mobility through new channels and transform data into ideas and innovations aiming to meet citizens' needs.

Information management in Public Organizations is a complex process, because it involves a great number of organizations that receive numerous information from companies, citizens, and other organizations, and, with the processing of this data and information, there is the intention to feed the society back with better public policies or to meet the demands of each citizen. Gil-Garcia et

al. (2014) show that governments, in different levels and branches, are adopting tools and applications to deliver, function and organize themselves in a way that allows them to follow rapid environmental changes. The implementation of management processes, such as Knowledge Management and Intelligence (Waltz, 2003), are effective in taking advantage of data and information from the external environment to transform them into relevant knowledge for public managers' better-quality decision-making and for greater efficiency and effectiveness for the execution of the public activity.

Through Intelligence processes, organizations are able to reduce the amount of data generated by the external environment, since data must be collected and monitored, interpreted, analyzed and disseminated, assisting decision-making with more sensitive and useful information (Janissek-Muniz & Blanck, 2014). Intelligence in public administration refers to the intensification of the use of data and environmental information, through ubiquitous sensing, advanced metering and integrated applications that allow the government to make decisions in a more informed and evidence-based way (Scholl & Scholl, 2014; Gil-Garcia et al., 2016).

The Knowledge Management process relates to a series of practices and techniques used by organizations to create, share and explore knowledge to reach organizational goals (Nonaka, 2002; Arora, 2011). Knowledge Management contributes with new options, improving performance and with practices that can benefit public administration, improve the effectiveness of public services and the society to which it serves, and the communication between the top management and the workforce (Wiig, 2002; Monavvarian & Kasaei, 2007).

Thus, it is important that public managers have effective mechanisms for public management. This in paper we address Knowledge Management and Intelligence process elements and we use Fuzzy-set Qualitative Comparative Analysis (fsQCA) to identify the pathways leading to: a) a higher quality decision-making of public managers, and b) the efficiency and effectiveness in the execution of public activities.

The identification of alternative pathways leading to higher quality decision-making and to the efficiency and effectiveness in the execution of public activities presents itself as a great contribution to the administrative practice. The Brazilian context is interesting for the development of this study, since the country is facing a turbulent, uncertain and full of surprises scenario, and being able to count on processes of environmental scanning and the compliance with formal processes of Knowledge Management may help reduce the uncertainty in the decision-making of public managers.

In addition, relating the two concepts of Knowledge Management and Intelligence in the public sector demonstrates an evolution of studies in the public context, contributing to the advancement of studies on the subject (Massaro, Dumay & Garlatti, 2015; Gil-Garcia et. al, 2016). Also, the use of Comparative Qualitative Analysis is presented as an original contribution in the analysis of such processes with the public sector.

The paper is divided into four sections. The next section explains the concept of Knowledge Management and Intelligence in the context of Public Management. The third section shows the method used in this research, together with the results from the application of the research analysis method. Finally, the discussions and conclusions of the study are presented.

Literature Review

Public administration is understood as the set of entities that comprise the State, focused on the provision of public services and meeting the needs of citizens and the community, through the provision of quality services, encouraging social participation and efficiency in the development of the public activity (Brazil, 2016). In Brazil, public administration is divided into three distinct branches: The Executive, which is this research's scope, Legislative and Judiciary.

In view of the peculiarities of the public administration, from the 1990s the government began a process of public administration modernization, mainly focusing on the efficiency of the public administration by means of cost reduction and obtaining results during the execution of the public activity in Brazil, seeking a more managerial approach with less bureaucracy (Pereira, 1996; Abrucio, 1997; de Paula, 2005; Klering et al., 2010).

According to Ribeiro et al. (2013), public administration reforms have contributed to the improvement of the political decision-making capacity and to the State decentralization, with the implementation of horizontal coordination and the modernization of the human management potential. The aim is to develop a more participative, efficient and network-integrated public administration (de Paula, 2005; Secchi, 2009; Capobianco et al., 2013), providing a better public management in the delivery of services to society. Information and knowledge, representing the organization's intelligence, allow public agencies/entities to correct, improve or innovate their management practices and consequently their performance (Brasil, 2016).

Also, it is from the companies' processing of data and facts (internal), as well as those coming from the environment, that are not under direct control (external), that there is influence in the performance and in assisting the public manager's decision-making. Therefore, the process of Intelligence in Public Management is important to the objectives of administrative modernization, once it involves peculiarities when compared to the private sector.

Nevertheless, authors emphasize the importance of governments' continuous environmental scanning and data analysis (Cepik, 1997, 2005; Desouza, 2005; Johnston & Hansen, 2011; Linders et al., 2015). Issues related to the efficiency of the public activity, the provision of quality public services to society from the use of environmental information characterizes the use of Public Management Intelligence processes (Gil-Garcia et al., 2014; Scholl & Scholl, 2014).

Still, according to Rezende (2012), Intelligence in Public Administration is related to the systematized, personalized and appropriate use of information and knowledge for decision-making, and to assist the public manager to deal with the complexity and uncertainties through

coordination, continuous involvement, open data access and shared information (Gil-Garcia et al., 2014; Scholl & Scholl, 2014) and finally, to effectively use the abilities and knowledge that are frequently latent in the crowd (Johnston & Hansen, 2011).

Senior management support through the incentive of environmental scanning with the objective of capturing important data and information for the construction of a more efficient Public Administration (Gil-Garcia et al., 2016); the collaboration and participation of people as data and information receivers in both environmental monitoring and also important data for the organization (Johnston & Hansen, 2011; de Paula & Rover, 2012; Gil-Garcia et al. 2016). And the use of information and communication technologies to collect important data and information from the external environment, as well as to assist data and information sharing among stakeholders (de Paula & Rover, 2012; Scholl & Scholl, 2014), are important dimensions in the process of Intelligence in the Public Management.

Both the knowledge generated from the data and information from the external environment, as well as the knowledge developed inside the organization need to be managed. In this way, the Knowledge Management formal process arises from the organization's ability to gather, store and transfer knowledge, providing the access to knowledge sources through mechanisms of information identification and recovery, with the objective of applying the knowledge to the specific needs of the organization (Alavi & Leidner, 2001). According to Riege & Lindsay (2006), to build a more effective government and to develop public policies grounded on knowledge, Public Management must apply more systematic and efficient ways to capture, disseminate, apply and make organizational knowledge transparent. In addition, the use of practices and techniques to create, share, and explore knowledge can assist the achievement of organizational goals (Jain & Jeppesen, 2013).

Thus, an effort from governmental agencies to adopt practices of Knowledge Management with the aim to create innovative and complex systems that connect people with information and knowledge are important to perform their activities (Riege & Lindsay, 2006), once the central value of an organization resides on people's knowledge (Voronchuk & Starineca, 2014).

Massaro et al. (2015) highlight the importance for managers in the public sector to recognize that their organizations work in a unique context where stakeholders and accountability are significantly different than the private sector, and that a pure application of the tools and models for Knowledge Management coming from the private sector can be counterproductive, since the object is the public sector.

As important dimensions for the Knowledge Management in the Public Management, senior management support for creation, dissemination and storage of the organizational knowledge, aiming to develop organizational policies oriented toward learning and Knowledge Management stand out (Hazlett et al. 2008; Lindner & Wald, 2011; Shinoda et al., 2015); and the use of information and communication technologies as facilitators to the process of Knowledge Management, since its use enables knowledge gathering, sharing and storing (Dawes et al., 2009; Arora, 2011; Schutte & Barkhuizen, 2014; Mao et al., 2016).

In addition, human capital appears as the protagonist of the Knowledge Management process, since people have the power of decision through the use of the knowledge created, obtained, disseminated, and stored in the organization (Wiig, 2002; Monavvarian & Kasaei, 2007; Arora, 2011; Voronchuk & Starineca, 2014).

It is evident from this literature review that the majority of studies on Knowledge Management and Intelligence processes in the public context were carried out separately, without analyzing the opportunity for the development of public management when working together with such processes.

According to the studies of several authors, the importance of the Knowledge Management and Intelligence processes for the Public Management and the need to continue the research on the area are evident. As no studies were found that sought to understand potential sets, through the use of Knowledge Management and Intelligence in Public Management, for better decision making and greater efficiency and effectiveness in the development of public activity in the Brazilian context, this study seeks to fill this gap in the literature.

Methods

Regarding this research's objective in finding effective ways to a higher quality decision-making by public managers and for the efficiency and effectiveness in the development of the public activity through the use of elements of the Knowledge Management and Intelligence processes, we opted to use a qualitative and exploratory approach since "one of the main benefits of the qualitative research is that it allows the researcher to see and understand the context in which decisions and actions occur" (Myers, 2013, p. 5).

The present work uses the fuzzy-set Qualitative Comparative Analysis (fsQCA) technique, which is a set-theoretic methods for studying cases as configurations (Fiss, 2007). Such methods are suitable for configurational theory because they consider cases as combinations of attributes and recognize that different combinations reflect different and unique cases (Ragin, 2000). As such, set-theoretic methods differ from conventional, variable-based approaches because they explore multiple and alternative possibilities that lead to an outcome (Fiss, 2007), thus through its use it is possible to identify causal configurations that lead to the presence or absence of a given result, with the possibility of presenting more than one solution to each determined objective (Rihoux; Ragin, 2009).

The set-theoretic methods contribute to theory building by combining verbal statements with logical relationships that differs from the traditional correlational approach to data. The method accepts that complex causal relations generate new insights for organizational theory in the fields of strategy research, human resource management, or the resource-based view (Fiss, 2007).

The QCA analysis with the use of the Fuzzy Set allows, through the insertion of association values between "0" and "1" a much closer perception of the situations studied (Ragin, 2000). By using

the fsQCA, we identified which combinations of causal conditions lead to quality of public manager's decision-making and which lead to efficiency and effectiveness in the development of the public activity, as well as the absence of the expected results.

Each configuration of the causal conditions and the associated result are designated as one case (Fiss, 2007). Causal conditions in the fsQCA analysis are related to the dimension (elements) that are important, according to the theoretical reference and the interviews' content analysis regarding the use of processes of Knowledge Management and Intelligence in the Public Management context.

The conditions related to the objectives of greater quality in the public manager's decision-making and which lead to greater efficiency and effectiveness in the development of the public activity are the use of processes of Knowledge Management (km), intelligence (intel) and senior management support (seniormgt), as well as the influence of public service length (fslength) and gender of the interviewee (fsgender).

Regarding the second objective, the use of a complementary causal condition: financial incentive (financincentive) was effective. Dimensions related to the use of information and communication technologies and people engagement were not analyzed in the application of the methodology since according to the theoretical reference and the interviews they are extremely necessary in both cases, and therefore we did not incorporate these variables in the study in order to bring a differential to this research.

Data collection

For the data collection, we conducted semi-structured interviews with 17 public managers of two Agencies in the Executive Branch in one of Brazilian Southern States between April and May of 2017. Initially, we developed a questionnaire based on the theoretical reference of this research. Part of the interviewees work in an agency with structured management processes such as strategic planning, servant's qualification, productivity measuring with financial incentives, among other mechanisms that assist Public Management activities. Other managers interviewed do not work in agencies with such structured management processes and do not receive such financial incentives.

The interviews with the public managers were carried out with the aid of a script with semi-structured questions and based on the literature review. These interviews lasted approximately one hour and were recorded and later transcribed and analyzed. First, the responses were categorized to later be possible to identify causal conditions for the application of the Qualitative Comparative Analysis (QCA).

Interviewees were public managers with an effective position in the public administration and that perform activities related to Knowledge Management and Intelligence. Of these, 15 out of the 17 interviewees, (88%) are male, 11 (65%) are in the public service for more than 10 years and 11 (65%) hold a post-graduation. 12 out of 17 (71%) declare they receive financial incentives (productivity) in the Public Agency where they work. They perform activities in different areas:

inspection and collection, quality of public expenditures, projects and system, public purchases, among other relevant areas for the execution of the public activity.

Through the analysis of interviews, important causal conditions were identified for a Quality in Public Managers' Decision-Making and Effectiveness and Efficiency in the execution of the public activity. For the purposes of exposing the relevance of identified causal conditions: Knowledge Management, Intelligence, Senior Management Support, Financial Incentive, Public Service Length and Gender, excerpts from the interviewees demonstrate the importance of these conditions.

For example, in one of the interviews the public manager explained, "the external environment is fundamental for our decision-making. It is indispensable to discuss the external scenario, economic, technological and political scenario, because it interferes directly with work of the manager". Other interviewees exposed the importance of the use of formal processes of Knowledge Management, which is established through mechanisms of creation, sharing and use of individual and organizational knowledge. Emphasizing the importance of such a condition.

Calibration

Originally, QCA was developed for the configuration analysis of conventional Boolean settings, that is, to analyze whether a given variable is a member or not of a given set through the crisp set definition (csQCA), which provides researchers with simple data composed of binary variables, coded as 1 when "present" and 0 when "absent" (Rihoux; Ragin, 2009).

Differently from the use of binary variables existing in the traditional approaches of sets, fsQCA (Fuzzy-sets) enable inserting associating values between "0" and "1" and not solely "0" and "1". The fsQCA accepts alternative condition combinations, equifinality and asymmetry (Fiss, 2011), that is, fuzzy settings allow for a more approximate perception of the situations studied (Ragin, 2000).

The application of the method generate different configurations of attributes leading to the same outcome, using algebraic manipulation of logical statements. Such an approach ways offers a better fit of data on organizations and provides a sophisticated assessment of different combination of causes that affect a variety of outcomes, such as performance (Fiss, 2007), or in the present case: outcomes of quality in public administration.

According to the author, the most important is the connection between theory and data analysis in social sciences, which can be largely improved using fuzzy-set once they can be designed to fill in theoretical concepts. Calibration is the process of classifying conditions in each case, from full membership (1,00) to full non-membership (0,00) and implies a theoretical and empirical knowledge on the variables (Ragin, 2005; 2008).

For this study's condition calibration, binary and categorical variables were used through fsQCA, where each category must be associated to a significant group (full membership, cross-over point of maximum ambiguity of association, and full non-membership). To calibrate data in a fuzzy-set,

we used the manual procedure (grounded on evidences). We calibrated the causal conditions and the outcomes, based on interviews carried out with public managers.

Regarding Knowledge Management and Intelligence processes, we computed several procedures encompassed in each process. Thus, Intelligence (*intel*) is comprised of the combination of at least one of the variables that comprise the process (environmental monitoring or use of intelligence process or dissemination of data and information). Similarly, Knowledge Management (*km*) consists of at least one of the variables that comprise the formal process (knowledge creation or storage of knowledge or use of knowledge or dissemination of knowledge).

Regarding *km*, *intel* and Senior Management Support (*seniormgt*) the calibration process was established through the definition of importance levels: 0.00 (not important process/support); 0.25 (process/support minimally important); 0.50 (process/support reasonably important); 0.75 (process/support considerably important); 1.00 (process/support totally important). The variable Public Service Length (*fslength*) presents several values, and it composes a fuzzy-set. Fuzzy scores present varying degrees to which different cases belong to a set, assessing different membership degrees between full inclusion and full exclusion. This calibration is only possible through the use of theoretical and substantive knowledge, which are essential for the specification of the three qualitative breakpoints: full membership, full non-membership, and the point of maximum ambiguity about membership (Ragin, 2005). In this way, there is the possibility of full membership (0.90) for 39 years of public service length; full non-membership (0.10) for the threshold of 2 years of public service; the point of maximum ambiguity (0.50) for the threshold of 14 years of public service.

Gender and Financial Incentives are binary variables, according to Table 1. In relation to the outcomes, the calibration process was established through the definition of importance levels: 0.00 (inexistence quality/efficiency); 0.25 (poor quality/efficiency); 0.50 (reasonable quality/efficiency); 0.75 (lots of quality and efficiency); 1.00 (total quality and efficiency). Table 1 depicts the cuts used in the calibration of the causal conditions and outcomes.

Table 1. Calibrations of the conditions (variables)

Conditions and Outcomes	Calibration
Knowledge Management (<i>km</i>)	(0.00; 0.25; 0.50; 0.75; 1.00)
Intelligence (<i>intel</i>)	(0.00; 0.25; 0.50; 0.75; 1.00)
Senior Management Support (<i>seniormgt</i>)	(0.00; 0.25; 0.50; 0.75; 1.00)
Financial Incentive (<i>finincentv</i>)	Binary Variable, 0 = absent; 1 = present
Public Service Length (<i>fslength</i>)	(39; 14; 2)
Gender (<i>fsgender</i>)	Binary Variable, 0 = Male; 1 = Female
Quality in Public Manager Decision Making	(0.00; 0.25; 0.50; 0.75; 1.00)
Efficiency and Effectiveness in the Execution of the Public Activity	(0.00; 0.25; 0.50; 0.75; 1.00)

Necessity and Sufficiency Analysis

The causal conditions are analyzed on their necessity and sufficiency. The degree of necessity of the causal condition indicates the extent to which it is necessary to reach a given result. The degree

of sufficiency of the causal condition shows the extent to which it can be related to the explanation of the results. (Fiss; Sharapov; Conqvist, 2013). According to Ragin (2000), the necessary conditions must present consistency values that surpass the 0.80 limit. For Schneider et al. (2010), a condition or a condition match is called "necessary" or "almost always necessary" if the consistency score exceeds the limit of 0.90. The necessary condition for Quality in Public Managers' Decision-Making, the following conditions are: being a male, having senior management support, having Knowledge Management and Intelligence processes, consistent with the previously discussed.

Regarding the necessary conditions for the absence of the result, that is, for the lack of Quality in Public Managers' Decision-Making, those are: the absence of senior management support and the absence of Knowledge Management processes. Regarding the Efficiency and the Effectiveness in the execution of public activities necessary conditions are: being a male, having financial incentives, having senior management support, having Knowledge Management and Intelligence processes. Concerning the necessary conditions for the absence of Efficiency and the Effectiveness in the execution of public activities, there are no necessary conditions.

Causal Configurations

The results of the sufficiency analysis, report the intermediary solutions as suggested by the literature (Fiss, 2011; Ragin, 2008). In tables 2 to 5 we report the core and peripheral conditions; core conditions represent those present both in the parsimonious solutions and in the intermediary solutions, on the other hand, peripheral conditions are only present in the intermediary solutions (Fiss, 2011; Fiss et. al, 2013; Ragin, 2000, 2008). Regarding Quality in Public Managers' Decision-Making, the results offer a single configuration (Table 2).

Concerning the Absence of Quality in Public Managers' Decision-Making, results show three intermediary causal combinations (Table 3). Regarding the solutions reported in Tables 2, 3, 4, and 5 all respecting the 0.80 threshold suggested by Ragin (2008) or Fiss (2011), they all meet the 0.80 threshold suggested by Ragin (2008). Considering tables 2 to 5 intel=Intelligence; km=Knowledge Management; seniormgt=Senior Management Support; fsgender=Gender; fslength=Public Service Length; finincentv =Financial Incentive. In addition, black full circles (●) indicate the condition's presence. Unfilled circles (○) indicate the absence of the condition. Big circles indicate core conditions; Small circles depict peripheral conditions. Blank spaces indicate that the condition that "does not contribute".

Table 2. Causal combinations for Quality in Public Managers' Decision Making

Combinations	Casual conditions					Coverage		Consistency
	intel	km	seniormgt	fsgender	fslength	Raw	Unique	
1	●	●	●	○		0.88	0.88	1.00

Coverage of the global solution: 0.88

Consistency of the global solution: 1.00

Table 3. Causal combinations for the absence of Quality in Public Managers' Decision Making

Combinations	Casual conditions					Coverage		Consistency
	intel	km	seniormgt	fsgender	fslength	Raw	Unique	
1	○	○	○		○	0.61	0.14	1.00
2	○	○	○	○		0.64	0.16	1.00
3	●	●	●	○	○	0.48	0.09	0.89

Coverage of the global solution: 0.86

Consistency of the global solution: 0.93

In the Efficiency and Effectiveness in the execution of the public activity analysis we used financial incentive as a condition, since it is an important influence for the outcome. Regarding Efficiency and Effectiveness in the execution of the public activity sufficiency analysis, results show a single combination and two leading to its absence (Tables 4 and 5) (both solutions respect the consistency 0.80 threshold suggested by Ragin (2008) or Fiss (2011)).

Table 4. Causal combinations for Efficiency and Effectiveness in the Execution of the Public Activity

Combinations	Casual conditions						Coverage		Consistency
	intel	km	seniormgt	finincentv	fsgender	fslength	Raw	Unique	
1	●	●	●	●	○	○	0.58	0.58	0.91

Coverage of the global solution: 0.58

Consistency of the global solution: 0.91

Table 5. Causal combinations for the absence of Efficiency and Effectiveness in the Execution of the Public Activity

Combinations	Casual conditions						Coverage		Consistency
	intel	km	seniormgt	finincentv	fsgender	fslength	Raw	Unique	
1	○	○	○	○	○		0.20	0.10	1.00
2	○	○	○	○		○	0.22	0.13	1.00

Coverage of the global solution: 0.33

Consistency of the global solution: 1.00

Discussion

Results show only one causal combination that leads to Quality in Public Managers' Decision-Making. This combination shows that processes of Intelligence, Knowledge Management, Senior Management support and being male lead to a greater Quality in Public Managers' Decision-Making.

In relation to the absence of quality in decision-making, the fsQCA analysis produced three causal combinations, the first two combinations presented by the fsQCA regarding the absence of Quality in Public Managers' Decision-Making are coherent when we compare them to the results for

Quality in Public Managers' Decision-Making Based on the content analysis of the interviews with public managers and the subsequent calibration of the data and information collected, it was possible to identify important causal combinations that are in line with what was exposed in the literature review and with the main points mentioned by the respondents, as well as regarding the findings from the content analysis of the interviews carried out.

Nevertheless, combination number 3 shows an interesting finding in the present study in which being a male manager with short public service length, and absence of senior management support; intelligence and knowledge management support is sufficient for quality in decision-making. Such result highlights an important issue that may be further explored in future studies, since the theoretical review did not provide issues related to gender and service length, additionally, it could even be influenced by other unevaluated conditions. Additionally, it is noteworthy that there are less combinations leading to Quality in Public Managers' Decision-Making than to its absence. This result serves as an alert for public management in what concerns the management of data, information and knowledge for managerial decision-making.

Such result may be related to the difficulty of using and sharing knowledge among public servants and managers, related to the lack of dissemination about the importance of using data, information and knowledge with Public Management or linked to the interest of the government now. As one of the public managers interviewed points out "information and knowledge produced from environmental data qualifies decision making." but "it does not cover everything, but 50% of decision-making is based on data and information, the other 50% is the result of government momentum."

Regarding Effectiveness and Efficiency in the execution of the public activity, fsQCA analysis produced a single causal combination involving having Knowledge Management and Intelligence processes, having Senior Management Support, being a male and having short length of public service. According to one of the interviewees, "it is extremely important to increase efficiency and, on the other hand, to achieve concrete results in Public Management."

Yet regarding the absence of Efficiency and Effectiveness in the execution of the public activity, there are two possible combinations, such result shows that the combinations of being a male public manager or having short length of service, along with the absence of Knowledge Management and Intelligence processes, not having Senior support and not benefiting from financial incentives lead to the absence of Efficiency and Effectiveness in the execution of the public activity.

Corroborating with the findings in the analysis, three of the interviewees claim that the greater the amount of data and information it is used, as well as the ease of communication, the greater the efficient development of public activity. They claim to have concrete results in the processes, such as the capture of tax fraud, mechanisms that help in planning the quality of public spending, control of public costs, among other possibilities inherent to the activity.

Therefore, the absence of Efficiency and Effectiveness in the execution of the public activity involve almost the opposing causal combinations that lead to the achievement of that result. In other words, there can be alternative combinations of causal conditions both for the presence as well as for the absence regarding the expected outcome. These configurations reflect the three characteristics of fsQCA:

- a) More than one combination of causal conditions leads to the result and to its absence (alternative combinations of causal conditions)
- b) The alternative causal combinations can produce the same result (equifinality);
- c) Causal conditions of the result can differ from the causal conditions of its absence (asymmetry).

Using the Qualitative Comparative Analysis, we uncovered paths that lead to a greater quality in public managers' decision-making and to a greater efficiency and effectiveness in the execution of the public activity. Such paths involve the use of Knowledge Management and Intelligence processes, or its absence. Findings are consistent with the theoretical review and the interviews' content analysis, that identified Knowledge Management and Intelligence processes together with other conditions lead to quality in public managers' decision-making and efficiency and effectiveness in public activity execution.

Conclusion

This study provides an original contribution previously unaddressed in the literature, since it presents the causal configurations that lead to the quality in public managers' decision-making and to the efficiency and effectiveness in the execution of the public activity (as well as causal configurations leading to the absence of such outcomes) by using elements from the Knowledge Management and Intelligence theories in the context of Brazilian Public Management. Findings show one path leading to quality in decision-making and three that lead to its absence. Furthermore, there is one path that leads to efficiency and effectiveness in the execution of the activity and two that lead to its absence. These findings highlight the importance of the conditions in the paths, strengthening the assumptions found in the theoretical review. Thus, based on this study, the importance of using elements from Knowledge Management and Intelligence processes for a more efficient and effective execution of Public Management activity becomes evident. Furthermore, efficient knowledge and information management enable valuable decision-making for the public manager regarding public policies to be adopted and/or maintained, meeting the main objectives of public management, which consist on the provision of quality services, on the efficient execution of the public activity, and on the encouragement of social participation focusing on the collective wellbeing.

One of the main benefits of knowing the paths that lead to a desired result is to point out what we can try to develop with the Public Organizations in order to obtain a better Public Management. For managers, in turn, it is important to recognize that there are alternative ways to achieve objectives in a more efficient way with greater quality in the decision making process. It should be emphasized that when one of the paths is described, it is necessary to maintain it and to look

for new paths that prove effective for the results sought. As for the benefit of knowing what can lead to the absence of the desired results, we have the opportunity to avoid such combinations in the public organization, so as not to generate the absence of the intended.

This paper brought the new way of analyzing the conditions with the purpose of making a more effective public administration and to empower public managers with important paths to make decisions of higher quality. The fact that there are no studies on this subject in Brazil, especially those that address the Public Sector, which is more complex than the private is, demonstrates this study's originality.

Future studies can focus on the vision of public servants, to analyze how these concepts and conditions are understood and practiced by various positions and functions with the said Public Bodies. Also the research has potential to be applied in different public institutions, aiming at a pattern of paths that lead to Quality in Public Managers' Decision-Making and Effectiveness and Efficiency in the execution of the public activity in the context of the Brazilian public sector.

Finally, it is important to highlight the importance of the joint use of Knowledge Management and Intelligence processes, together with other conditions identified in the paper, in favor of a more effective Public Administration in the development of its activities and in the construction of a cities, states and countries.

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