

HOW ARE CASE STUDIES BEING CONDUCTED? A REFLECTION ON THE PAPERS PUBLISHED IN THE ADMINISTRATION FIELD

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ABSTRACT

This paper analyzed the use of case study design for research in the Administration field by using a bibliometric approach between 2008 and 2012. Case studies are the most used method in the field, and are sometimes criticized regarding their validity as a scientific method, but they are useful considering that the field deals with complex organizations that need depth instead of breadth. The initial selection gathered 89 papers. After the articles were read, 77 were selected as part of the final sample since they met the proposed requirements. These papers were classified according to: (i) the type of case study, (ii) justification for the type of case study project that was used; and (iii) the source of the evidence, based on Yin (2010). The results showed that there is a trend for researchers to investigate representative cases in only one analysis unit. The contribution of the research was to better understand how to apply a case study in the administration field.

Keywords: *Case Studies, Scientific Method, Administration*

1. INTRODUCTION

The case study as a research method remains one of the most challenging enterprises of the social sciences. In this sense, the researcher frequently addresses contemporary phenomena for the purpose of analysis. The case study is only one of the various ways to do research in the social sciences (YIN, 2010).

In this context, investigations supported by case studies have gained a better reputation in the scientific community. This growing notoriety in the field of social sciences owes much to the authors Yin and Stake who, although their perspectives and not completely identical, have sought to deepen, systematize, and add credibility to the case study in the realm of investigation methodology (MEIRINHOS and OSÓRIO, 2010).

As a research method, the case study is the chosen strategy for examining contemporary occurrences. However, the richness of the phenomena and the extension of the real life context requires the researcher to face a distinct technical situation, because there will be many more interesting variables than data points (YIN, 2010).

However, many research projects that are classified by their authors as "case studies" seem to not consider the fact that scientific knowledge involves a construction process for this type of knowledge. According to Yin (2010), although the case study is a special way of doing empirical investigation, many researchers disdain the strategy. Perhaps the main concern is the lack of accuracy of the research and the possibility that people are confuse about the teachings of a case study. Another common concern regarding the case studies is that they do not provide a large basis for scientific generalization.

The problem is that there are few ways to verify the capacity of the researcher to execute good case studies. To define the most significant issues for the design of a case study, one method it to review the literature. In a summarized manner, most people feel that they can prepare a case study and almost all of them believe that they understand a case study (YIN, 2010).

Thus, according to Poulis, Poulis, Plakoyiannaki, (2013), the case study is not a peripheral issue of concern, but rather a challenge that considers the general application of research as an investigation organism that has its own limits. This way, some of the criticisms made toward this method are regarding issues such as the choice of the cases, the quality of the study, and the generalization processes.

According to Yin (2011), for the case study method to be used correctly, and for the results to be relevant to the field, some basic issues should be observed. such as: what is the “case” and the justification for the choice, develop a theoretical perspective along with the research design, triangulation of different data sources, rigorous and profound development of explanations for rival theories during the analysis, and to search for a theoretical generalization of the study.

Considering this scenario, the following questions arose that were the motivation for this research: *What types of case study designs are the most used in papers written in the administration field? Is the justification presented appropriate for the type of case study used? What are the sources of evidence used in the studies being analyzed?* Given the above, this paper seeks to analyze the use of case study design in research done in the Administration field, beginning with the presupposition that a contribution can be made to improve understanding of how to apply this type of study in the aforementioned field.

Based on these concerns, the following specific objectives were defined: i) identify which types of case study designs are most often used; (ii) analyze the presented justification for the type of case study used, and iii) identify the sources of evidence used in the studies.

This paper is structured into six more sections after the introduction. Section two addresses the theoretical mark that was the basis for this study. Section three presents the methodological architecture that allowed the operations of the research. In section four there is the research results are analyzed and discussed. Section five addresses the final considerations, and then there is the list of the bibliographical references used in this study.

2. THEORETICAL REFERENCES

2.1 Paradigmatic positioning in case studies

Several researchers of the case study method discuss and demonstrate a variety of paradigmatic perspectives regarding this type of investigation strategy (ZUCKER, 2009). In this context, the case studies can include multiple visions made up of different ontological, epistemological, and methodological premises. These different points of view can be placed on a continuum from realism to relativism (JÄRVENSIVU and TÖRNROOS, 2010).

Case studies often seem to use a methodology that is based on premises from critical realism (EISENHARDT, 1989). This is often a viable alternative from the critical realism point of view due to the strong perspective in theory generation (JÄRVENSIVU and TÖRNROOS, 2010).

According to Esaston (2010), the case study method is often taught as a qualitative research method in courses that address critical realism. Critical realism recognizes that social phenomena are intrinsically meaningful, and therefore, that the meaning is not just externally descriptive, but rather, is made up of social phenomena. The meaning has to be understood, it cannot be measured or counted, and therefore, there is always an interpretive or hermeneutical element to the social sciences.

However, beyond the perspective of critical realism, the case studies are part of the field of positivism, with detailed discussions about each component of the study, where its approach and language suggests a positivist paradigm (YIN, 2010).

In this sense, even though there is not a standard for the execution of case studies, the positivist approach has a research process that is linear, carefully conceived, ordered, and executed without mistakes or errors, and is isomorphic to the reader's premises (DINIZ, *et al.*, 2006). In contrast, the interpretive approach is based on the premise that individuals use symbolic forms, such as ideas and concepts to give meaning and structure their social experiences.

In this regard, questions that become relevant to the research are the validity, reliability, and generalization, which are often displayed as marks of true scientific research. Järvensivu and Törnroos, (2010), argue that the validity of research can be defined by: (a) the truth claims are supported by the facts, (b) the chain of interconnected arguments are acceptable to the scientific community and (c) the community that determines its validity is characterized by obedience to critical standards.

In the opinion of Yin (2010), the credibility of the studies includes classical criteria of quality assessment: external validity, internal validity, and reliability. According to the author, the external validity is about defining the domain to which the findings of the study can be generalized. Internal validity for the explanatory type case studies is in regard to the question of the accuracy of the conclusions that conduct the study, for which it is believed that certain conditions lead to other conditions, unlike spurious relationships. The reliability (repeatability) of the data collection and analysis process is the demonstration that the operations of a study can be repeated with the same results.

According to Coutinho and Chaves (2002), stressing the need to define criteria for judging the credibility of the case studies does not mean that these criteria can be seen in the same prescriptive manner as it does in quantitative studies. But it also doesn't mean that such standards do not make sense. They should be a constant concern for the researcher who will start a case study (Coutinho and KEYS, 2002).

Also, it is important to highlight a question that seems to affect researchers, especially in Brazil - a confusion between qualitative, quantitative, and the paradigms. The research method and the paradigm are independent. "Qualitative" method is not a synonym for an "interpretive" philosophical position. Qualitative research may or may not be interpretive, depending on the underlying philosophical assumptions of the researcher. Qualitative research can be positivist, interpretive, or critical. It follows that the choice of a specific qualitative research method (such as a case study or action-research) is independent of the underlying philosophical position adopted (THOMAS, 2010). According to Myers (2008), Yin's approach to the case study method is basically positivist, since it recommends the use of hypotheses and/or propositions.

2.2 The case study as an investigation strategy

There are various definitions and opinions about the case study method. The works of Robert Yin and Robert Stake are obligatory references when addressing the issue. Although they position themselves with different paradigms (Robert Stake is more in tune with social constructionism and Robert Yin with post-positivism) these authors agree on some key issues (ALVES-MAZZOTTI, 2006).

According to Yin (2010, p. 39), the case study, "*is an empirical study that does an in-depth investigation of a contemporary phenomenon within its real-life context, especially when the boundaries between the phenomenon and the context are not clearly defined.*" This definition takes into account three basic conditions of research strategies: the type of research question, the researcher's control over behavioral events, and the focus on contemporary events rather than historical phenomena. In outlining these three conditions, Yin argues choosing the case study as the preferred strategy when "how" or "why" questions are being raised; when the researcher has little control over events; and when the focus is on a contemporary phenomenon within some real-life context.

According to Stake (1995), the case study allows one to pay attention to concrete problems. The case is the complexity and specificity of a system in operation, where the system is integrated. It is not necessary that the parts work well and the goals can be irrational, but it is a system. For the author, a case is studied when it is of very special interest, thus attention is given to the details of the interaction between the case and its contexts. The case study is the study of the particularity and complexity of a single case, coming to understand its activity within important circumstances (STAKE, 1995).

Also, according to Eisenhardt (1989), a case study is a research strategy that focuses on understanding the dynamics present within specific scenarios. Case studies may involve single or multiple cases and numerous levels of analysis (YIN, 2010). Usually, they combine data collection methods, such as document analysis, interviews, questionnaires, observations, and physical artifacts (EISENHARDT, 1989; YIN, 2010). The evidence may be qualitative, quantitative or both, and the case studies can also be used to provide descriptions, or to test and generate theories (EISENHARDT, 1989).

For Yin (2010), the case study can be conducted with any of the three basic purposes in mind: exploratory, descriptive, or explanatory. According to the author, the researcher must be able to identify situations in which all research methods may be relevant. Thus, the researcher can use multiple methods in any given study. In this case, the various methods are not mutually exclusive.

According to Tsang, (2013), the case study method tends to focus on the methods of data collection and analysis, instead of the theoretical method used based on the case studies. Due to the in-depth approach to reveal the mechanisms behind a phenomenon, the case study becomes suitable for the identification of events that

contribute to the prediction of a theory, because if the results are generalized, they will cast doubt on the validity of the theory itself.

Also, according to Yin (2010), some criteria should be considered when choosing a case study. First of all, the case to be studied must be defined, i.e., the analysis unit. This choice can be supported as long as it was based on suitable research questions and literature, and it helps enormously to organize the case study. Secondly, choose a single or multiple case study, remembering that they can both be holistic or integrated, that is, that consider subcases within the case. Finally, the researcher should take care to use or not use a theoretical development to help select the case, develop the data collection protocol, and organize initial strategies for data analysis.

It is important to highlight a fragment of Yin's definition already described at the beginning of this section, where he justifies the use of the method, "*especially when the boundaries between phenomenon and context are not clearly defined.*" This is the most common definition when using this method in Brazilian papers and it requires further explanation. When the researcher has a research problem where the application site doesn't matter, he may opt for other methods. When the issue is intertwined with the study site and its nuances are confused it is appropriate to use the case study, or rather, it is a case study. Thus is explained the Yin fragment, because it is not possible to separate the phenomenon studied from the context where it occurs.

2.3 Case study typologies

Yin (2010) distinguishes four types of case study designs (Figure 1): (Type 1) single case designs (holistic), (Type 2) single case designs (integrated), (Type 3) multiple case designs (holistic), and (type 4) multiple case designs (integrated). The single integrated case study designs are defined when there is more than one analysis unit. According to the author, this occurs when, in a single case, attention is also directed to one or more subunit. Even if a case study is about a single organization, the analysis may include results from its subunits. In comparison, if the case study only examines the global nature of an organization or a program, the design is considered holistic.

The multiple case study designs are characterized by containing more than one case in a single study (YIN, 2010). When this occurs, the study used a multiple case design. As with the single case study, the multiple case studies can also be holistic or integrated. According to Yin (2010), when a design is integrated, the study may even require the coordination of an on-site survey for each case study.

Stake (1995) describes three types of case studies: intrinsic, instrumental, and collective. The case study is intrinsic when the researcher wants a better understanding of a particular case that contains the interests of the investigation. An instrumental case study is when a case is examined to provide insight on a subject, to provide knowledge about something that is not exclusively the case itself, i.e., it could facilitate the understanding of something broader. The case study is collective when the instrumental case extends to several cases to allow, by comparison, deeper understanding of the phenomenon, population, or condition.

2.4 Justification for a case study design

In regard to the justification for the single case study design, Yin (2010) presents five reasons. The first is when the single case is the critical test case in a well-formulated theory. The case can be used to determine whether the propositions of the theory are correct or if some set of alternative explanations may be more relevant and can represent a significant contribution to the formation of knowledge and theory.

A second justification for the single case is when it represents an extreme or peculiar case. Examples of a peculiar case are commonly seen in clinical psychology, where an event can be so rare that any single case deserves to be documented and analyzed.

The third reason for the single case is the representative or typical case. The goal here is to capture the circumstances and conditions of a daily situation or a common place. His case study may represent a typical design among many different designs, for example, a manufacturing company in the same industry. The lessons learned from these cases are presumably informative regarding the experiences of the average person or institution.

The fourth reason for the single case study is the revealing case. This situation exists when a phenomenon that was previously inaccessible to social science research becomes possible to be observed and studied by a researcher.

The fifth reason for the single case study is the longitudinal case, i.e., the study of a single case at two or more different points in time. The theory would probably specify how certain conditions change over time and the time intervals would reflect the anticipated stages where changes should be revealed.

Regarding the justification for the multiple case designs, according to Yin (2010), it derives directly from his understanding of the literal and theoretical replications. For simpler multiple case designs, the justification would be the selection of two or more cases considered literal replications, with a set of cases with exemplary results for some evaluation questions. For more complicated multiple case designs, researchers used a "double-ended" design, where the cases of the two ends were chosen deliberately. The justifications can also be derived from the prior hypothesis of different types of conditions and the desire to have case subgroups covering each type.

2.5 Sources of evidence in case studies

One of the features of case studies is the ability to obtain information from multiple sources of evidence (BARRATT, CHOI and LI, 2011). According to Yin (2010) the evidence of the case study may come from six sources: documents, records on file, interviews, direct observation, participant observation, and physical artifacts. The author mentions that it can include: life stories, projective techniques, and psychological exams, films, photos, video, and others. In complementary fashion, Stake (1995) describes the importance of the description of the context as a possible source of information collection.

The use of the six sources of evidence presented by Yin (2010) requires mastery of different data collection procedures. Furthermore, it is important to collect data on real events and human behavior. For the author, no single source has a complete advantage over all the others. Various sources are highly complementary, and the ideal would be to use as many sources as possible in a case study.

The documentation includes the use of letters, memos, daily electronic correspondence, notes, schedules, official documents, newspaper clippings, and others. The documents are useful even if they are not precise and may be biased. For the case studies, the use of the documents is to support and increase the evidence from other sources (YIN, 2010). In Stake's (1995) opinion, the documentation is complementary to other sources of evidence. The author also emphasizes the importance of this information as a substitute for situations that could not be observed directly.

Records on file includes public use files, service records, organizational files, maps, charts, censuses, survey data, etc. (YIN, 2010) The relevance of this type of evidence source will depend on the type of study to be performed and, when used, the researcher must be careful to confirm the conditions under which they were produced and their degree of accuracy, since the most of the file records are quantitative.

The interview, according to Yin (2010), is one of the most important sources of information for the case study. The interviews are guided conversations, not structured investigations. It is common for them to be conducted in a spontaneous (perceptive) manner, and therefore interpersonal influences should be avoided. According to Yin (2010), a type of case study interview is the in-depth interview. In this type of interview, the researcher can even ask the interviewee to provide their own insights about certain events in order to use these contributions as the basis of future research. A second type of case study interview is the focused interview that, although it is still spontaneous and informal, the researcher follows a set of questions listed in the protocol. A third type of interview is the formal survey, which can be designed as part of an integrated case study and produce quantitative data as part of the case study evidence.

In general, interviews are a key source of evidence for the case study because most of them are about human affairs or behavioral events (YIN, 2010). Also, Stake (1995) mentions that much of what we can't observe has been or is observed by others. Therefore, the ability to gather descriptions and interpretations of others is regarded by the author as an essential source of information for the case study. In this sense, the interview would be a way to capture these descriptions and interpretations. However, good interviews are not easy because they depend on the researcher's ability to ask the right questions (STAKE, 1995).

Direct observation is a way the researcher can observe relevant behaviors or environmental conditions, as long as the phenomena of interest are not purely historical (YIN, 2010). According to the author, direct observations can be made during the field visit, including times when other evidence is being collected. The positive aspect associated with this data source is the ability to capture events in real time, as well as the ability to deal directly with the context of the event.

Participant observation is a special mode of observation where the researcher has a role where he actually participates in the events studied (YIN, 2010). One advantage of this type of information collection is to perceive the real situation from the point of view of someone who is inside the case and not outside it.

A final source of evidence is the physical or cultural artefact. According to YIN (2010), a technological device, a work of art, or some physical evidence can all be classified as physical artefacts. This type of information source has a relatively minor level of importance in most of the typical case study examples. However, when relevant, they may be an important component of the general case.

It is worth adding that the most important advantage for the use of multiple evidence sources is the development of converging research lines as a data triangulation process (YIN, 2010). Thus, data triangulation is one of the ways to make the case study more robust. Therefore, any discovery or conclusion in a case study will probably be much more convincing and accurate if based on several different sources of information (YIN, 2010). Furthermore, according to Stake (1995), triangulation routines are the basis for validating qualitative research.

2.6 Generalization in case studies

Another issue that is often discussed in the case studies is related to generalization capacity. According to Stake (1995), the goal of the case study is to make the case understandable through its particularization. However, the author mentions the small and large generalizations that are possible in case studies. The first are regarding the internal inferences that the researcher can make about particular case, and the latter may be relevant for the modification of existing generalizations or other cases that have not been studied yet.

For Yin (2010), the case study, much like laboratory experiments, do not represent a single sample, thus can be generalized to theoretical propositions, namely analytical generalization, but not to statistical generalizations. In this sense, the objective is to expand and generalize theories. Also, for the author, the analytical generalization can be used if the case study involves one or more cases, which will later be referred to as a single case study or a multiple case study. How this analysis should be done or in what sense the generalization is possible, Yin does not make clear (EASTON, 2010).

In Easton's (2010) opinion, the causal explanation in a single case should be based on a theory that is structured in terms of a critical realism. The best explanation, which is the most consistent with the data, is what is being investigated. However, a generalization of any kind is not possible, unless there is some invariance in the world. If all the events and their causes are unique, then there could be no prevailing theories.

Zucker (2009) states that the generalization of the case study findings are limited to the case itself or to certain types of cases. However, attention to selected details improves the analysis and increases the clarity of the reasoning process. Eisenhardt (1989) addresses the concern about generalization through an analysis process of multiple cases that allow the researcher to extract more general theoretical conclusions.

Järvensivu and Törnroos (2010) argue that neither the single case study nor the multiple case studies should be evaluated in terms of knowledge generalization (i.e., the universality of the theory), but in terms of knowing whether the results contribute to contextual perceptions. Thus, according to the authors, from a moderate constructionist point of view, the goal of single or multiple case studies is not to reveal universal truths, but to generate certain knowledge that is historically specific to the context.

In this regard, certain historically bounded theories can be also applicable in other contexts, in a non-positivist and non-probabilistic sense. This can be defined as a type of analytical generalization, or transfer, where the theory of a certain case study context can be used to analyze other related contexts (YIN, 2010).

3. METHODOLOGICAL PROCEDURES

This study aimed to analyze the use of case study design in information administration research from EnANPAD (Meeting of the National Association of Graduate Studies and Research in Administration). Therefore, we carried out a bibliometric study to identify the most used types of case study designs in the published papers of the field. Articles were examined that were published from 2008 to 2012 in the Annals of the Meeting of the National Association of Graduate Studies and Research in Administration (EnANPAD). The reason for the selection for this period was because it included the most recent studies of the topic being researched. The collection was made through electronic searches of the event database, and the search criteria was for articles with the word "case" in the abstract. The word "case" was located, with the help of a text editor search engine, in the abstracts of all of the papers in the Information Administration field of the aforementioned event during the time period specified above.

The case study is a method widely used for research in the administration field (MAFFEZZOLLI and BOEHS, 2008). This reality does not differ in the IS area, where it is also one of the most used methods, according to bibliometric articles written by Lunardi, Rios and Maçada (2005), Zimmer, Ferreira and Hoppen (2007) and Tajara *et al.* (2013).

After the database search, the articles that would be analyzed were selected. According to Café and Bräscher (2008), for the selection to include scientific papers with similar properties, it is essential to standardize the physical description and the content of these documents. The initial selection gathered 89 papers. The papers that contained the word “case” in the abstract but only mentioned it and did not deal with the design of a case study were eliminated. After the initial selection, the objective and the methodology of the studies was read. In some cases the full texts were read in an attempt to achieve greater understanding of the research design that was adopted.

After the articles were read, 77 were part of the final sample since they met the proposed requirements. These papers were classified according to: (i) type of case study, (ii) justification for the type of case study design used, and (iii) evidence sources. Figure 2 shows the research model used in this study.

In regard to the specific analysis of the work, it was done by adopting Yin’s (2010) theoretical presuppositions about case studies. According to him, the case study designs can be classified as: Type 1 single case designs (holistic); Type 2 single case designs (integrated); Type 3 multiple case designs (holistic); and Type 4 integrated multiple case designs.

As for the justification for these types of designs, this can occur when the design represents a critical, extreme, peculiar, typical, revealing, or longitudinal case. With regard to sources of evidence, according to the author, the most commonly used when doing case studies are: documents, records on file, interviews, direct observation, participant observation, and physical artifacts. In this study, to keep it simple, the sources of evidence used for analysis were: Interviews, document analysis, direct observation, participant observation, and physical artifacts. It is worth noting that the details for the classifications above were described in the theoretical framework.

4. PRESENTATION, ANALYSIS, AND DISCUSSION OF THE RESULTS

The analysis of the data in the following subsections will focus on the type of case study, the justification for the type of single case study design; and finally, the evidence sources addressed in the articles.

4.1 Types of case study designs

When analyzing the selected papers with regard to the types of case study designs, according to the data in Table 1, most of them are holistic single case studies. Of 77 total papers, 54 fit this typology. According to Yin (2010) if the case study only examines the global nature of an organization or a program, the design is holistic. Thus, according to the author, this type of case study only considers a single analysis unit, where the results are analyzed from a global point of view of the study.

Also, regarding the single case study typology, of the investigated papers, only 7 were found that are integrated single case studies. According to Yin (2010), the integrated single case study designs are defined when there is more than one analysis unit. According to the author, this occurs when, in a single case, attention is also directed to one or more subunit.

Regarding the multiple case studies, all the papers that used this kind of design were considered holistic. Similarly to the holistic single case studies, these studies have examined an analysis of the global nature of an organization or a program. Also, this type of case study design maintains a single unit of analysis, while maintaining a more robust character since it has more than one case analyzed and is considered more convincing (YIN, 2010).

It is worth remembering that not all of the articles analyzed explicitly presented this classification. However, based on Yin (2010), and based on an in-depth reading of the papers that did not mention what kind of case study they were referring to, it was possible to fit them into one of the typologies proposed by Yin, since all of the analyzed papers were clear as to the analysis unit being investigated.

4.2 Justification for the case study designs

According to Yin (2010), when designing a case study is important to be able to justify the study. Therefore, the author proposes five justifications for single case studies and justifications regarding the literal and theoretical replications for multiple case studies. It should be noted that, although the authors of the analyzed papers were

concerned with describing their criteria for the choice of the case, they did not bother to explicitly justify the fact that it was a single or multiple case. Of the 77 analyzed studies, only 16 presented a justification for the case. Thus, the analyzed studies were classified according to the assumptions of Yin (2010), according to the data in Table 2, making it necessary to do a thorough analysis of theory and the descriptions made by the authors in their respective studies.

Thus, the results of this research show that the main justification used for the execution of the analyzed single case studies was that it was a representative or typical case. According to Yin (2010), the goal of the studies is to capture the circumstances and conditions of a daily situation or a common place. In this context, the case study may represent a "typical" design among many different designs, for example, a representative school or a typical urban neighborhood.

Please note that the single revealing case justification was absent from the analyzed studies. Still, there are a low number of single case studies justified by being peculiar or longitudinal. These findings may be related to the research area being investigated, that is, information administration, where it is more trivial study in companies that stand out in that area.

Regarding the justification for multiple case studies, data analysis has highlighted 16 papers that provided justifications related to the understanding of literal and theoretical replications. According to Yin (2010), the justifications for these studies can also be derived from the prior hypothesis of different types of conditions and the desire to have case subgroups covering each type.

Please note that not all of the analyzed studies presented the justification for the case study design. The identification of the type of justification for these papers was possible after they were read thoroughly, considering the Yin 2010 presuppositions.

The number of papers classified as representative may suffer from a bias of arbitrary classification of the authors of this article due to the absence of specification or justification for choosing the case being studied in the analyzed articles. We know that sometimes, cases are chosen according to the researcher's accessibility and its representativeness can be questioned.

4.3 Sources of evidence

With regard to the types of evidence sources used in the analyzed studies, Table 3 data shows that most researchers used multiple information sources, with a preferences for interviews and document analysis. According to Yin (2010), an interview is one of the most important sources of information for the case study. Thus, the prevalence of this type of data collection is justified by its credibility, which was recognized by Yin.

Also, regarding document analysis, according to Yin (2010), the documents are useful even if they are not precise and may be biased. For the case study, the use of documents serves to support and increase the evidence from other sources. In Stake's (1995) opinion, the documentation is complementary to other sources of evidence.

Regarding the use of physical artifacts, only one study used this source of evidence for data collection. It should be mentioned that this type of evidence source could be used more often in this area of study, since it often deals with an information system.

It should be added that, in each year there were papers that used a questionnaire for data collection. However, this instrument is not listed among the main evidence sources addressed by Yin (2010). The author states that there are others sources in addition to the most commonly used ones, but he does not give emphasis to the questionnaire; however, in regard to interview evidence, he mentions more structured questions somewhat like a formal survey in order to produce quantitative data, but without specifically mentioning the questionnaire.

In Yin's (2010) book, which is the basis for researchers who use the method, the author briefly mentions the survey as a means of collecting evidence. He does not make further comments, but specifies that the survey should then follow the recommended steps. Here one can infer that a survey may be used in a case study, using a structured questionnaire with closed ended questions, and even use quantitative statistical analysis. Thus, a very important question arises: what separates a case study from a survey, since both methods are on the same level?

A survey is classified as such when it uses a group (population) and seeks opinions and characteristics about it, but the results are not restricted to that group, but to the research problem being studied. In the case study,

however, a survey can be done by questionnaire, but the phenomenon and context are not clearly separated. One goes back to the definition given for a case study, "*especially when the boundaries between phenomenon and context are not clearly defined.*" The data collection is done using the same concepts as the survey, but the results are limited to the case due to the relationship between the space it happens in and the research problem.

Thus, with regard to the number of times the questionnaire was presented as a source of evidence in the papers that were researched, 2009 had the most - seven studies that used the questionnaire as a data collection method. On the other hand, the papers published in 2008 were the ones that least used this source of collection - only two studies used this collection method.

4.4 General trends regarding case studies

The trends observed in the papers that were investigated are about the type and nature of the research being conducted in these studies. According to the data from Table 4, there is a propensity for exploratory studies, followed by descriptive studies and exploratory-descriptive studies. According to Gil (1999), exploratory studies provide greater flexibility in the search for information about a particular problem, seeking to make it clearer and allowing the construction of new ideas regarding the topic at hand. With respect to descriptive studies, according to Triviños (1987), these studies seek to accurately describe facts and phenomena of a specific reality, not being restricted to collection, sorting, and classifying data, since this type of study also allows relationships to be established between variables (Gil, 1999).

Yin's (2010) point of view regarding the purpose of the case study is that it can be conducted through exploratory, descriptive or explanatory investigations. According to the author, the researcher must be able to identify situations in which all research methods may be relevant. Thus, the researcher can use multiple methods in any given study, i.e., a survey in a case study or a case study in a survey. In this case, the various methods are not mutually exclusive.

Although Yin's (2010) presuppositions also give credit to case studies as explanatory research, there is still a small number of this type of paper published in the information administration area. According to the data in Table 4, the publications that include this type of research are no more than 4 in the area being studied and in the database that was researched.

Also, the analysis of the papers made it possible to observe a considerable number of studies that did not offer a classification regarding the purpose of the research. A total of twenty papers were not classified regarding the type of research.

Regarding the nature of the research, according to Table 5, there is a higher concentration of qualitative studies, especially in 2009, which included 17 studies. Furthermore, the quantitative studies were not of a significant number, since 8 papers were published during the observation period, and in 2008 no quantitative studies were found.

The findings listed above are in line with the "wrong" view that some researchers have about the case study, labeling them as exclusively qualitative. According to Meirinhos and Osorio (2010), the case studies, in essence, seem to inherit the characteristics of qualitative research. This seems to be the dominant position of authors who address the methodology of case studies. However, according to Yin (2010), case studies can include details and even be limited to quantitative evidence.

5 FINAL CONSIDERATIONS

The limits, both regarding the interest and the results provided by a certain research method, seem to be some of the main points of tension in the theoretical discussion about the case study method (MAFFEZZOLLI and BOEHS, 2008). According to Yin (2010), with the case study, it makes sense to rely on a rigorous methodological framework, based on a problem that starts with "why" or "how" and where the objectives and the theoretical framework of the investigation are clear.

However, according to Barratt, Choi, and Li (2011) what is seen is a lack of consistency in how the case study method has been applied. According to the authors, it is necessary to improve the accuracy of the case studies in order to offer enough details in research design, such as data collection and analysis, especially when qualitative studies are involved.

Given this context, this study investigated the use of case study design in research conducted in the information administration field of the Meeting of the National Association of Graduate Studies and Research in

Administration between 2008 and 2012. With this purpose, the most used types of case study design were investigated, the justification given for the type of case study used, and the evidence sources used in the studies.

Thus, Table 6 presents a descriptive overview of the nature of the case studies published in the information administration field. With respect to the typology of the case studies, there is a tendency for researchers to investigate only one analysis unit, which is confirmed by the percentage of this type of study, i.e., of 77 analyzed studies, 61 (79.22%) are studies single case.

In regard the type of justification used for the credibility of the case study, there is a preference for representative cases, i.e., 61.03% of the papers presented, as the justification for conducting the case study, situations in which the analysis unit in a particular context is represented by relevant particularities. According to Yin (2010), the goal of the studies is to capture the circumstances and conditions of a daily situation or a common place. Perhaps the low number of studies justified by other options is due to the field of the studies being investigated, i.e., information management.

Regarding the sources of evidence used for operationalization of the analyzed studies, the data collection is predominantly from interviews and document analysis. These findings may be related to the fact that the interview is one of the most important sources of information for the case study (YIN, 2010), and the document analysis can complement the other sources of evidence (STAKE, 1995).

It is important to note that multiple sources are quoted in various occasions in the method section, but they are neglected in the results, i.e., how these different sources of evidence were used is not clear. The results of the evidence source analysis are restricted to interviews. According to Yin (2010), a strong point of case study data collection is the opportunity to use different sources of evidence, which allows the investigator to address a wider range of historical and behavioral aspects. Thus, the most important advantage offered by the use of multiple sources of evidence is the development of converging lines of research, a process of triangulation and corroboration of the study.

Regarding the nature of the research used in the case studies, there was a predominance of qualitative studies, i.e., 67.53% of the analyzed studies used qualitative analysis. These findings may be associated with the opinion some researchers have about case studies, labeling them as exclusively qualitative.

Finally, we analyzed the purpose of the case studies and, as per the data in Table 6, a trend toward exploratory studies can be seen. This type of purpose corresponds to instrumental type case studies where the researcher "uses the case to understand something else" (STAKE, 1995), i.e., he seeks to reach working hypotheses that are capable of transcending the case itself and guide future investigations.

Regarding the limitations of this study, these stem from the fact it only analyzed national studies in a specific area of knowledge (information administration).

Given this context and the results of this study, future research is needed in order to discuss not only the presence of the elements of a method, but also the quality with which these elements were addressed in articles of the information administration field. The analysis of case study design in other areas of knowledge is also recommended.

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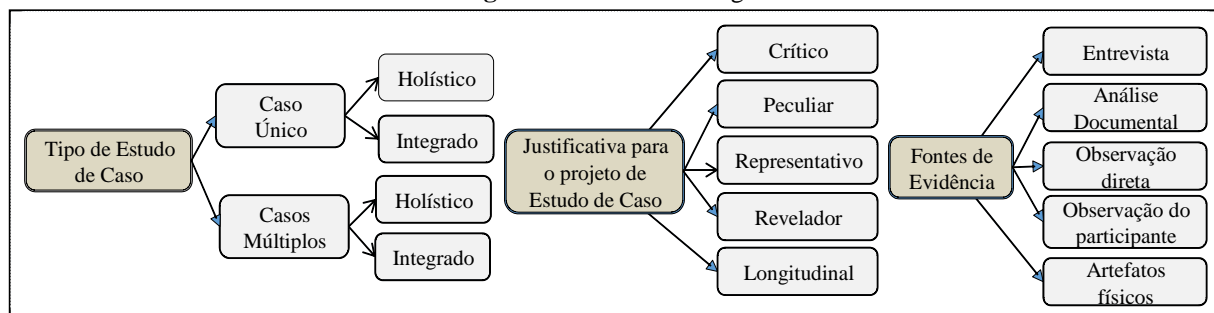
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Figure 1: Types of case study designs

	Single case design	Multiple case design
Holistic (one analysis unit)	Single case holistic (Type 1)	Multiple case holistic (Type 3)
Integrated (more than one analysis unit)	Integrated single case (Type 2)	Integrated multiple cases (Type 4)

Source: Adapted from Yin (2010)

Figure 2 - Research Design



Source: Elaborated by the authors based on Yin (2010)

Table 1 – Types of case studies

Year	No. articles	Single		Multiple	
		Holistic	Integrated	Holistic	Integrated
2012	13	9		4	
2011	16	9	4	3	
2010	10	8	2		
2009	21	13	1	7	
2008	17	15		2	

Source: Research Data

Table 2 - Justification for the case study designs

Year	No. articles	Single Case					Multiple Case
		Critical	Peculiar	Representative	Revealing	Longitudinal	Multiple
2012	13	2		7			4
2011	16	4		8		1	3
2010	10	2		8			
2009	21	2	2	10			7
2008	17	1		14			2

Source: Research Data

Table 3 – Types of evidence sources

Year	No. articles	Interview	Document analysis	Direct observation	Participant observation	Physical artifacts	Total – evidence sources
2012	13	12	11	3	1		27
2011	16	12	7	2			21
2010	10	4	6	2			12
2009	21	18	12	5	2	1	38
2008	17	16	13	8	1		28

Source: Research Data

Table 4 – Type of Research

Year	No. articles	Exploratory	Descriptive	Explanatory	Exploratory/Descriptive	No classification presented
2012	13	4	2		2	5
2011	16	4	2	2	4	4
2010	10	5	1		3	1
2009	21	12	2	1	2	4
2008	17	4	5	1	1	6

Source: Research Data

Table 5 – Nature of Research by publication year

Year	No. articles	Quantitative	Qualitative	Quanti-Quali	No classification presented
2012	13	1	11		1
2011	16	4	8	2	2
2010	10	2	5	3	
2009	21	1	17	3	
2008	17		11	3	3

Source: Research Data

Table 6 – Nature of the case studies published in EnANPAD - information administration field, 2008-2012

	Frequency	Percentage
Case study typologies		
Single	61	79,22
Multiple	16	20,78
Type of justification for the case study design		
Critical	11	14,29
Peculiar	2	2,60
Representative	47	61,03
Revealing	0	0,00
Longitudinal	1	1,30
Multiple	16	20,78
Evidence Sources		
Interview	62	80,52
Document analysis	49	63,63
Direct observation	20	25,97
Participant observation	4	5,19
Physical artifacts	1	1,29
Nature of case study research		
Qualitative	52	67,53
Quantitative	8	10,39
Quanti-Quali	11	14,29
No classification presented	6	7,79
Case study purpose		
Exploratory	29	37,68
Descriptive	12	15,58
Exploratory/Descriptive	12	15,58
Explanatory	4	5,19
No classification presented	20	25,97

Source: Research Data