

QUALITY IN QUALITATIVE ORGANIZATIONAL RESEARCH: TYPES OF TRIANGULATION AS A METHODOLOGICAL ALTERNATIVE

QUALIDADE EM PESQUISA QUALITATIVA ORGANIZACIONAL: TIPOS DE TRIANGULAÇÃO COMO ALTERNATIVA METODOLÓGICA

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MÁRCIO MOUTINHO ABDALLA marcioabdalla@id.uff.br

UNIVERSIDADE FEDERAL FLUMINENSE - PPGA

LEONEL GOIS LIMA OLIVEIRA

CENTRO UNIVERSITÁRIO CHRISTUS

CARLOS EDUARDO FRANCO AZEVEDO

ESCOLA SUPERIOR DE GUERRA

RAFAEL KURAMOTO GONZALEZ

INSTITUTO FEDERAL DO PARANÁ

ABSTRACT

The dichotomous debate between objectivity and subjectivity in Social Sciences and the differences between qualitative and quantitative approaches in research are related to the strong demand for validation and accreditation of studies. Thus, the main objective of this paper is to discuss quality in qualitative research, through a systematic analysis of the typologies of triangulation strategy, highlighting the following quality dimensions in research: reliability, credibility, transferability and confirmability. There is a considerable amount of research about quality in qualitative research, as well as about triangulation. However, the main differentiator of this paper is the systematic presentation of triangulation typologies, which allow for the improvement of quality in qualitative research. The authors believe that the focus on "how to" improve quality, and not quality itself, makes this paper original. Among the main findings, it can be highlighted the effort to systematize and present guidelines in order to improve credibility in qualitative research, by means of the triangulation strategy presented in a framework that will allow the reader to have a better understanding of the proposals in this work. The authors understand that the main implication of this paper is mainly in providing guidance to researchers, particularly those dealing with qualitative research, on how they could improve the quality of their research.

Keywords: Triangulation. Qualitative Research. Reliability. Credibility. Confirmability.

RESUMO

O dicotômico debate entre objetividade e subjetividade em Ciências Sociais e as diferenças entre abordagens qualitativas e quantitativas em pesquisas relacionam-se à forte demanda por validação e acreditação de estudos. Dessa forma, o objetivo deste trabalho foi discutir a qualidade na pesquisa qualitativa por meio de uma análise sistemática das tipologias de estratégia de triangulação, então, destacando-se as seguintes dimensões de qualidade na pesquisa: confiabilidade, credibilidade, transferibilidade e confirmabilidade. Há diversas pesquisas sobre qualidade em pesquisas qualitativas e, também, sobre triangulação, no entanto o principal diferencial deste trabalho foi a apresentação sistemática de tipologias de triangulação que permitiram aumentar a qualidade das pesquisas. O foco em "como" melhorar a qualidade, e não em qualidade em si, torna este artigo original. Como achados, destacaram-se os esforços para sistematizar e apresentar as guias para melhorar a credibilidade em pesquisas qualitativas por meio da estratégia de triangulação, apresentada em uma estrutura que permita ao leitor uma melhor compreensão desta proposta. A principal implicação deste trabalho converge, especialmente, para pesquisadores adotantes de pesquisa qualitativa, principalmente, por fornecer orientações sobre como melhorar a qualidade de suas pesquisas.

Palavras-chave: Triangulação. Pesquisa Qualitativa. Confiabilidade. Credibilidade. Confirmabilidade.

INTRODUCTION

Concerns regarding methodological rigor and validity of the findings in different research works have existed for some time now in the Social Sciences. According to Ollaik and Ziller (2012), the concept of validity derives from quantitative methods, and aims to achieve a better understanding of the extent to which a given measure correctly represents the proposal of a study. In this way, it is possible to confirm how the differences between quantitative research (objective) and qualitative research (subjective and interpretative) lead researchers to adopt only one of them to implement their scientific work (TEIXEIRA; NASCIMENTO; CARRIERI, 2012). This might help explain the preferences towards quantitative research, as well as the existence of a significant amount of researchers who are very cautious in keeping their works highly scientific (BUELENS et al., 2008).

In spite of the intention of validating a single aspect, of remaining distance from some epistemological paradigms (e.g. Post-modernism), particularly because they are closer to Positivism, diverse qualitative approaches in research intend to create only works that provide more credibility. Kvale (1995), for instance, suggests some validity approaches in qualitative research, despite criticizing the so called “Holy Trinity” – meaning the three concepts: reliability, validity, and generalization. In this matter, one of the most popular ways of seeking confirmation in qualitative research is through the strategy of triangulation, which among other aspects, advocates the use of multiple methods. Such research strategy has also been described as convergent methodology, multi-method/multi-traced (CAMPBELL; FISKE, 1959) and convergent validation (WEBB et al., 2015).

The research interest in triangulation has not been recent. Ever since the idea was first conceived in the 1950s, with some studies in the field of psychology by Campbell & Fiskie (1959) with their “*multiple operationism*”, followed by its popularization in the 1980s (BAZELEY, 2002; 2009) triangulation has remained a matter of debate and discussion, which has provided opportunities for further advances and contributions. The history of scientific research is full of attempts to combine or mix diverse collection,

analysis and interpretation methods within the same study. Triangulation is a widely debated subject, in diverse areas, as in the case of human sciences (e.g., MORAN-ELLIS, et al., 2006; KONECKI, 2008; HUSSEIN, 2009; among others), health sciences (e.g., GUION, 2012; among others), and more specifically, applied social sciences (e.g., YAUCH; STEUDEL, 2003; IKEDA, 2009; YIN, 2015; TEIXEIRA; NASCIMENTO; CARRIERI, 2012; OLLAIK; ZILLER, 2012; ZAPPELLINI; FEUERSCHÜTTE, 2015; GIBSON, 2017).

There is no agreement among the different authors regarding the methodological perspective of triangulation to be used. Sometimes groups of researchers even criticize the strategy (e.g., BAZELEY, 2002; BRYMAN, 2007), while others advocate it (e.g., DENZIN, 1978; JICK, 1979; FLICK, 2005a; 2005b; PATTON, 2014). Moreover, some are constantly looking for ways to enhance it by trying to find alternatives for validation (CAMPBELL; FISKIE, 1959; GOLAFSHANI, 2003; SHENTON; 2004).

Diverse specialists have noted the convenience of combining methods, given the weaknesses found in projects oriented by a single methodological route. However, the main previous promoters of triangulation (SMITH, 1975; DENZIN, 1978; FLICK, 1992; WEBB et al., 2015; among others) do not explain how it ought to be executed. Most graduate programs prepare students so that they can make use of a given methodological approach or method, but such programs rarely prepare them for the possibility of combining methods (multi-method). For this reason, it is relevant to undertake deeper studies regarding the methodological approach, as a means to provide enough detail to accurately explain the ways in which the convergent data are collected, examined and interpreted. Thus, the main objective of this paper is to discuss quality in qualitative research, through a systematic analysis of the typologies of the triangulation strategy, highlighting the following quality dimensions in research: reliability, credibility, transferability, and confirmability.

In order to reach the objective proposed in this essay, an exhaustive theoretical research has been carried out, by means of which it a deep look into seminal works has been possible. Such works have introduced discus-

sions ranging from mixed methods of research in the 1970s (e.g. SMITH, 1975; DENZIN, 1978; JICK, 1979) to papers recently published in specialized journals, such as the *Journal of Mixed Methods Research* (e.g. FLICK et al., 2012; FIELDING, 2012; KERN, 2016) and *Organizational Research Methods* (e.g. TURNER; CARDINAL; BURTON, 2017; GIBSON, 2017).

This paper is divided into five other sections, in addition to this introduction. The second section briefly provides readers with literature on triangulation and its role in Social Sciences. The third section introduces the main objectives and types of triangulation. A Table 1 is presented to sum up the state of the art on purpose of triangulation and their types. The fourth section brings an important contribution, as it systematizes the role of triangulation in the quality of qualitative research works. A Table 2 is presented explaining the central aspects for the enhancement of credibility in qualitative research. Also, dimensions like transferability, confirmability and reliability are examined. In the fifth section, the limitations of triangulation are addressed, and attention is paid to avoid deviations. The last section provides our final considerations and the contributions made to the field of study.

TRIANGULATION STRATEGY IN SOCIAL SCIENCES

The origins of the concept of triangulation are not linked to human and social sciences, but to military science. “Due to navigation and topography, triangulation is frequently understood as a method used for establishing a position” (COX; HASSARD, 2005, p. 109). Currently, with the new satellite technologies available, triangulation is used by the military for discovering the exact location of a cell phone, a radio transmitter or any other communication equipment used by the enemy. For this purpose, the direction and intensity of the waves being transmitted by two devices are measured, and a third receiver or transmitter is located. Thus, basic principles in geometry guarantee greater precision achieved from the incidence of multiple points of view.

In Human and Social sciences, the term ‘triangulation’ is used in a less literal manner, as well as in a more ambiguous one. When a researcher looks at an object from a given perspective, he or she needs to think from at least another couple of viewpoints as perspectives capable of adjusting the right ‘distance’ and ‘angulation’ of concepts, thus, relocating him or herself definitively. Accordingly, organizational researchers have the opportunity of improving the precision of their assessments, if they proceed with diverse methodologies, collecting data in different ways, analyzing such data with different methods, or even including the participation of other researchers who study the same phenomenon (FLICK, 1992; 2005b).

In 1959, the term ‘triangulation’ was used in psychology by Campbell and Fiske, who intended to empirically test the results obtained by using different quantitative techniques (CAMPBELL; FISKE, 1959). They introduced the concept as a synonym for convergent validity when they presented their multi-method matrix. A few years later, in 1966 Webb, Campbell, Schwartz, and Sechrest used Campbell and Fiske’s idea, and broadened its concept, suggesting that data collection from different sources, as well as their analysis, would enhance the validity of the results (WEBB et al., 2015). Those authors, and also Jick (1979), redefined Campbell and Fiske’s idea of 1959 as the combination of qualitative and quantitative methods, stating

that such approaches would better be seen as complementing rather than competing with each other.

In 1978, Denzin, with the help of this concept, claimed that a hypothesis tested with different methods should be considered more valid than another hypothesis, tested only with one method (DENZIN, 1978). The author defined triangulation as a combination of study methods for the same phenomenon. Thus, the convergence or the agreement between two methods is likely to support the belief according to which results are valid, and not only a methodological artifact. Maxwell (2012) states that triangulation reduces the risk of having the conclusions of a study impaired due to the shortcomings and limitations of a single method and, for this very reason, ends up producing more credible conclusions. In the 2000s, Denzin and Lincoln stated that in Social Sciences, triangulation does not consist of a single tool or strategy for validation; yet, it is an alternative to it. The use of combined methodological perspectives, of diverse empirical materials and the participation of several researchers in a single study need to be seen as a strategy for more rigorosity, scale, complexity, variety and depth in any research work (DENZIN; LINCOLN, 2011). So, triangulation means being able to look at the same phenomenon, or research topic, through more than one source of data. Information coming from different angles may be used to confirm, develop or illuminate the research problem. This strategy limits personal and methodological biases, and increases the possibility of reproducing the findings.

From these concepts, it is possible to infer that triangulation, or the use of multiple methods (convergent methodology, convergent validation or other synonyms) is a strategy that can be used by researchers in diverse areas. This concept does not only embody one of the ways of combining qualitative methods (FLICK, 2005a; 2005b), or articulating quantitative and qualitative methods (FIELDING; SCHREIER, 2001; FLICK, 2005c). It is also a concept that breaks with the methodological hegemony of those advocates of mono-method approaches (TASHAKKORI; TEDDLIE, 1998). The following sections include descriptions of some of the possibilities and limitations of the proposed strategy.

ESSENTIAL OBJECTIVES AND MAIN TYPOLOGY

Triangulation can combine methods and collection sources of qualitative and quantitative data (interviews, questionnaires, observation and field notes, documents, among others) as well as different methods for data analysis (content analysis, discourse analysis, descriptive and/or inferential methods and statistics, among others). Its objective is to make a contribution, not only by examining the phenomenon from multiple perspectives, but also by widening the understanding of the matter among researchers, making new and deeper dimensions possible. Triangulation makes a contribution to the creation of inventive methods; it consists of new ways of grasping a problem so as to balance with conventional data collection methods.

The use of multiple methods can even help researchers discover misleading dimensions in a phenomenon. Different points of view can bring elements to that, which do not fit a theory or model. In this way, old theories are modified and new ones are developed. The proposed strategy can also lead to the synthesis or integration of theories. A skillful researcher will use the qualitative data to enrich and illuminate the results of quantitative methods, and vice-versa (JOHNSON; ONWUEGBUZIE; TURNER, 2007; GREENE, 2008; OTTOBONI, 2009). To sum up, Vergara (2015) states that triangulation can be seen from two different perspectives: as a strategy that contributes to construct validity, and as an alternative option to obtain new knowledge, through new viewpoints.

In terms of typologies, in the end of the 1970s, Denzin (1978) identified four types of triangulation: (i) data triangulation; (ii) theoretical triangulation; (iii) researcher triangulation; and (iv) methodological triangulation. Data triangulation means collecting data in different periods of time and from different sources, so as to obtain a richer and more detailed description of the phenomena. By differentiating the subtypes of data triangulation, Denzin (1978) suggested studying the phenomenon in different moments (so as to explore time differences), places (for comparative research), and with different individuals.

Theoretical triangulation refers to the possibility of exploring multiple theories, as a means of interpreting the same data group. According to Guion (2002), this type of triangulation aims at involving researchers with different theoretical approaches and from diverse areas of knowledge, into the analysis of the same phenomenon. In this way, the author offers a complementary view to that of Denzin's (1978). It is likely to be a doubtful theory, in case researchers' choices end up being misled.

Researcher triangulation consists of involving diverse researchers in the study of the same matter, while assuming that different researchers could contribute with varied perspectives, considerations and analyses. This is similar to that which Lincoln and Guba (1985) called *member checking*. The use of diverse researchers in the same study allows to obtain multiple observations in a given field, at the same time enabling the participants to debate their points of view, which helps reduce biases. In this case, the intention is to compare the influence of several researchers on both problems and results. Unlike the previous case, only the theory of a single field of knowledge is taken into account.

Methodological triangulation refers to the use of multiple methods as a way of obtaining more complete and detailed data about the phenomenon. This kind of triangulation is the most applied one. It involves the combination of methods, such as interview and observation, in order to better understand a given reality. In practice, the objective is to avoid the biases of a mono-method strategy. The articulation between interview and observation can be found in leadership studies, in which the efficiency of a leader can be studied by means of both interviews with leaders and, concomitantly, the study of their behavior. Complementarily, it is also possible to assess performance through document collection and analysis. The premise is that if multiple and independent measures lead to the same conclusions, then they are able to provide a more accurate picture of the leadership phenomenon.

As a way of better presenting several objectives of the triangulation and their respective types, we organized Table 1, which summarizes the state of the art on purpose of triangulation and their types.

Table 1 The state of the art on purpose of triangulation and their types

PURPOSE OF TRIANGULATION	SUGGESTED TYPOLOGY	AUTHORS
The authors described a triangulation as a convergent methodology performed by using different techniques and methods.	Multi-method and multi-trace	CAMPBELL; FISKIE (1959)
Triangulation as a combination of study methods for the same phenomenon. Thus, the convergence or the agreement between two methods is likely to support the belief according to which results are valid, and not only a methodological artifact.	Data triangulation, theoretical triangulation; researcher triangulation and methodological triangulation.	DENZIN (1978)
Increasing the quality of research in social sciences from the combination of quantitative and qualitative methods of analysis.	The same proposals by Denzin (1978).	JICK (1979)
The author argues triangulation as a way to increase validity of evaluation and research finding. Additionally, it warns that all resulting from triangulation should be discussed: inconsistency, contradiction, and convergence.	Data triangulation and methodological triangulation.	MATHISON (1988)
Increasing the quality of research in social sciences from the combination of quantitative and qualitative methods of analysis.	Simultaneous triangulation and sequential triangulation.	Morse (1991)

<p>The triangulation is 're-presented' as 'metaphorization'—in terms of process and movement between researcher-subject positions. Rethinking the lines and angles of enquiry in triangulation, the author suggests a shift from the 'triangulation of distance' tradition to a more reflexive consideration of 'researcher stance'. This movement is represented across three perspectives: the researcher as a follower of nomothetic lines; the researcher as the taker of an ideographic overview; and the researcher as the finder of a particular angle. The triangulation can provide a more complete and comprehensive picture of the phenomenon to be investigated.</p>	<p>They did not present typology.</p>	<p>COX; HASSARD (2005)</p>
<p>The authors presented a final discussion on the limitations, advantages and potential applications of metatriangulation to position it in the field of organizational theory.</p>	<p>Metatriangulation theory-building strategy.</p>	<p>LEWIS; GRIMES (2005)</p>
<p>The authors set out different rationales for using more than one method, then they develop a definition of integration of methods as a specific kind of relationship among methods.</p>	<p>Triangulation as a way for (i) integrated methods; (ii) separate methods, integrated analysis; (iii) separate methods, separate analysis, theoretical integration.</p>	<p>MORAN-ELLIS, J.; ALEXANDER, V. D.; CRONIN, A.; DICKINSON, M.; FIELDING, J.; SLENEY, J.; THOMAS, H. (2006)</p>

<p>The author performs triangulation of methods and data in order to gain a complex image of reality, active reconstruction of reality, and double or multiple comparison.</p>	<p>The author used triangulation of data, methodological triangulation and, in part, theoretical triangulation.</p>	<p>KONECKI (2008)</p>
<p>The author dealt with the dichotomy of paradigms between quantitative and qualitative. She also pointed to the paradigm of mixed methods of research. It is concluded that the advance of the science of the Administration depends on the presence of multiple paradigms.</p>	<p>Multiparadigmatic perspective.</p>	<p>OTTOBONI (2009)</p>
<p>The author used “the within-and between types” of triangulation to combine two or more methodological approaches, theoretical perspectives, data sources, investigators and analysis methods to study the same phenomenon.</p>	<p>The use of triangulation for confirmatory and for completeness purposes.</p>	<p>HUSSEIN, A (2009)</p>
<p>Increase the validity of the results from data collection in different sources and analysis by different methods. Quantitative and qualitative methods should be seen as complementary and not as rivals.</p>	<p>Multi-method and multi-trace, convergent validation.</p>	<p>WEBB; CAMPBELL; SCHWARTZ; SECHREST (2015)</p>
<p>Triangulation (2.0) is defended by the author as a potential form of social change.</p>	<p>A mono-paradigmatic approach, based on the use of critical interpretive methodologies.</p>	<p>DENZIN (2012)</p>

<p>Enhancement of illustration, convergent validation and development of analytical density or “richness”.</p> <p>The authors indicated that the combination of methods has been adopted mainly in the purpose of convergent validation without discussions between different world-views and different scientific knowledge views.</p>	<p>Data triangulation.</p> <p>Multi-paradigmatic perspective.</p>	<p>FIELDING (2012)</p> <p>TEIXEIRA; NASCIMENTO; CARRIERI (2012)</p>
<p>Triangulation is a way to check and establish validity</p> <p>Triangulation as a means to assess three different conceptions of validity: (i) related to the research formulation phase (prior validity); (ii) related to the research development phase (internal validity), and; (iii) related to the research results phase (external validity).</p> <p>The authors introduce and theorize different aggregation strategies commonly used in triangulation, such as weighted and simple averages or ‘the winner takes it all’ strategy.</p>	<p>Data, investigator, theory, methodological and environmental triangulation.</p> <p>Data, investigator, theory, methodological, environmental, peer valuation triangulation, focus groups, protocol, transparency, coherence and communicability.</p> <p>Data triangulation.</p>	<p>GUION (2012)</p> <p>OLLAIK; ZILLER (2012)</p> <p>LEUFFEN D.; SHIKANO S.; WALTER S. (2013)</p>

<p>The authors indicated the existence of several types of triangulation, although most follow the classification of Denzin (2005), which distinguished the triangulation of data, theory, researchers and methodology.</p> <p>The author relies on the proposal of Leuffen, Shikano, and Walter (2013) to discuss the triangulation of data sources.</p> <p>To increase validity and to provide generality, accuracy and simplicity in the construction of theory. The authors propose a roadmap to assist researchers in designing triangulation-based mixed methods research.</p> <p>The author proposes that triangulation is a means to increase the value of research.</p>	<p>They presented the different types of triangulation: data, method, methodological, and evidences of triangulation.</p> <p>Data triangulation.</p> <p>Convergent Triangulation, Holistic Triangulation, and Convergent and Holistic Triangulation.</p> <p>Multi-paradigmatic perspective, multi-method and proposal of innovative and less conventional alternatives, such as Content Analysis combined with Quantitative Survey Data.</p>	<p>ZAPPELLINI; FEUERSCHÜTTE (2015)</p> <p>KERN (2016)</p> <p>TURNER; CARDINAL; BURTON (2017)</p> <p>GIBSON (2017)</p>
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Source: Produced by the authors.

Within methodological triangulation, Denzin (1978) identified two subtypes of methodologies: intra-method or ‘inside the method’ triangulation and inter-method or ‘between methods’ triangulation. Intra-method triangulation uses diverse techniques of a given method to collect and interpret data. In the case of quantitative methods, such as opinion surveys, this can take the form of multiple scales or indicators focused on the same concept. Inter-method triangulation will be addressed in more detail in the following section. It is important to note that besides the types of triangulation proposed by Denzin (1978), Guion (2002) emphasizes environmental triangulation. In this type of triangulation, data collection techniques are used under different environmental circumstances, such as the time of day, day of the week, season of the year or temperature, among other elements and variables that might influence the phenomenon under examination. In other words, the use of mixed methods in research requires a lot more than just combining quantitative and qualitative approaches, because there are situations in which the epistemological paradigms require much more than mere combinations. We need to understand deeply the investigated context, under a time-space perspective (DENZIN, 2012). Working with mixed methods in research sometimes requires that data be synthesized, because they are equivalent and proportionate. In other cases, contradictions must be highlighted, especially when resulting from different epistemologies, and must be resolved conceptually (FIELDING, 2012). The between method triangulation (or mixed methods research) will be better dealt with in the next session.

QUALITY IN QUALITATIVE RESEARCH: CREDIBILITY, TRANSFERABILITY, CONFIRMABILITY, AND RELIABILITY

Triangulation refers to the use of multiple methods (or mixed methods research), techniques and data sources, as it tries to overcome the flaws of an investigation or method. For some researchers, this strategy leads to a more consistent and objective picture of reality. According to Gaskell and Bauer (2010), the strategy of triangulation is an institutionalization method, of theoretical perspectives and methods, aiming to reduce the inconsistencies and contradictions of research. It contributes to validity and reliability, by providing a more trustworthy picture of the phenomenon, through convergence (PATTON, 2014). Thus, Jick (1979) states that triangulation is a research strategy of convergent validation, both of multiple methods and of multi-approach to data.

There are three important reasons for employing mixed methods research: (i) illustration; (ii) convergent validation; and (iii) analytic density (or “richness”). The (i) illustration reflects how to demonstrate the reality of research. Cold statistical data may be better interpreted or understood by interviews, giving more life to numbers; (ii) convergent validation occurs when different data methods point to similar results, giving greater strength to the collection made and analysis; and (iii) analytic density materializes by the greater breadth and depth given the particular object of study, through the use of mixed methods research (FIELDING et al., 2012). The mixed method research is appropriate, especially for the investigation of complex phenomena either because of the complexity of the field of study or the problem to be solved, or because of the need for multiple levels of perception (FLICK et al., 2012).

An interesting practical guidance for triangulation says that if the sources are systematically biased in the same direction, the “winner takes it all” strategy is the most accurate one. In short, the choice for triangulation strategies depends on the number of sources, their reliability and on one’s level of independence “(LEUFFEN et al., 2013, p. 49). Kern (2016) presented practical guidance on how to apply the strategy of triangulation using

three different types of sources for convergence and divergence of light sources.

Similarly to quantitative theories, and with the intention of contributing to rigor, scale, variety and depth in research, Guba (1981) proposed four criteria to be considered by qualitative researchers to produce reliable studies: (i) credibility, corresponding to internal validity in quantitative research; (ii) the possibility of transferability, in spite of external validity or generalization; (iii) confirmability in spite of objectivity; and (iv) reliability, also approached in positivist research. These elements are detailed in the next sections.

CREDIBILITY IN QUALITATIVE RESEARCH: PARALLEL ASPECT TO INTERNAL VALIDITY

One of the key criteria addressed by positivist researchers is internal validity, which assures researchers that what they are measuring is precisely what needs to be measured. According to Merriam (2007), the equivalent concept for the qualitative researcher is credibility. Lincoln and Guba (1985) explain that credibility is one of the most important factors in the production of trust. It is particularly important in qualitative research (PATTON, 2014).

Credibility is considered a central concept for methodologies in Social Sciences. In quantitative research, this is established by the numerical representation of the samples under examination, and by internal consistency tests applied to data, so that scientific production would already be recognized and legitimized. However, it is not frequent for researchers to inquire about the number of participants that have been excluded because they 'had not agreed' with sample behavior (they are called *outliers*) or, with the adjustments (at times, unwillingly) made to obtain the (desired) results. In the case of qualitative research, the concept of credibility is, most of the times, put to test when the results are analyzed as the expression of a 'found reality'. With the growth of qualitative research in the realm of Social Sciences, the prediction of data has given some opportunity for the interpretation of meaning, whereas the criteria and modes of

validation have experienced transformations. According to Kvale (1995), in social research, valid knowledge emerges as the conflict of interpretations and actions that are discussed and negotiated between the researcher and the members of the community under examination. In terms of credibility, what the researcher produces matters as much as his/her own actions, particularly in the case of the ethical integrity in the process of collection, analysis and presentation of results. Moreover, his/her actions also matter when there are possible consequences for the subjects involved in the research. Researchers become critics of their own ways of both interacting with the community, and of the quality of the produced scientific knowledge.

According to Kvale (1995), credibility in qualitative research becomes evident whenever the researcher develops works that can be: (i) in the process of problematizing of the matter, through coherency with the theoretical foundations of the case; (ii) in the case of structuration of the research, where validity involves the adequacy of the research design and of the methods used in each topic, besides the objectives that give some direction to the study; (iii) in the process of data collection, where credibility materializes in the careful data review, in respect to what is being evidenced by participants; (iv) in terms of interpretation, where credibility refers to the ways in which questions are displayed in the text, and to the sense of given interpretations; (v) in terms of verification, when it is related to both credibility of knowledge produced and the types of validation that are relevant in specific studies, including the decisions of what is relevant for the community in the discussions on credibility.

According to Cho and Trent (2006), traditionally, internal validity in qualitative research has been involved with the determination of the degree to which the remarks of the researcher about knowledge actually correspond to the reality under examination (or to the perspectives of reality of the participants). In this way, Table 2 contains some guidelines for researchers, so that they can promote credibility in their research.

Table 2 Guidelines to Improve Credibility in Qualitative Research

GUIDELINES	DESCRIPTION	REFERENCES
Take operational measures adapted to the concepts under examination.	The right type of roadmap in the data collection process and in analysis methods, for instance, needs to include, as often as possible, those having been tested and validated in advance.	Yin (2015)
Develop a sense of familiarity with the (organizational) culture of the organizations involved, before the first data collection exercise.	This can be done through the review of proper documents and preliminary visits to the organizations. It is recommendable to maintain a 'long term commitment' between researcher and participants, so that an adequate understanding of the organization is achieved, beyond simply establishing a trust-based relationship between the parties.	Guba and Lincoln (1989); Erlandson (1993)
Choose a random sample of individuals to serve as informants.	Though in qualitative research the sampling is voluntary, a random approach can prevent partiality claims. The disadvantages of random methods, however, derive from the fact that without the control from the part of the researcher, the selection of individuals that are not as articulate as necessary can also happen.	Guba and Lincoln (1994)

<p>The examination of possible benefits from integrated methods compensates for the individual limitations of each one.</p>	<p>When possible, data obtained through documents must be used to help explain people's attitudes and behaviors, and to verify specific details they may have offered. Documents mentioned by informants must also be examined during interviews.</p>	<p>Guba (1981); Brewer and Hunter (2005)</p>
<p>Involve the use of a wide range of informants.</p>	<p>This is also a triangulation strategy, using diversified sources of data. In this type of triangulation, individual points of view and experiences can be compared.</p>	<p>Denzin (1978); Guion (2002)</p>
<p>Not make it mandatory for employees to participate in organizational research.</p>	<p>Give the responding individual the opportunity to refuse to participate in the project, as a way of guaranteeing data collection involving only those who are really available and willing to contribute. The signing of a consent form with assurance of privacy should be promoted. Every participant has the right to leave the study at any moment, having only to answer the questions asked, if he/she feels comfortable about them.</p> <p>Specific strategies can be used in order to discover lies or socially desirable answers. The researcher can reformulate questions, or can even invert the form of asking. In case contradiction emerges, the researcher can decide to eliminate some of the suspicious data. As an alternative option, the researcher can focus on such problems, and try to make the final report more transparent.</p>	<p>McCracken (1988) Denzin and Lincoln (2011)</p>

<p>Frequently consult superiors or directors for the quality of the project.</p>	<p>Through discussion, the researcher's views can be amplified with the experiences and perceptions of the mentioned authors.</p> <p>The familiarity with the project may at times inhibit the ability of the researcher to see problems. Therefore, the peer review of the project can challenge the assumptions made by the researcher, while making some contribution to correctness. Besides, even if no mistakes are found, the questions and observations may help the researcher enhance methods and strengthen arguments.</p>	<p>Creswell and Clark (2010)</p> <p>Lincoln and Guba (1985); Creswell and Clark (2010)</p>
<p>Ask for peer and scholarly assessment of the research project.</p>	<p>A detailed description of the object of research is important in achieving credibility, since it helps in the transmission of both real, examined situations and, to a certain extent, of such situations surrounding contexts. Without this perception, it is difficult for the reader to determine the extent to which the results are accurate.</p>	<p>McCracken (1988); Denzin and Lincoln (2011)</p>
<p>Describe in detail what is being examined.</p>	<p>The expertise and abilities of the researcher are as important as the correct application of the procedures themselves.</p>	<p>Alkin, Dailak and White (1979)</p>
<p>Research fellow's qualifications and experience in the overall credibility.</p>		

Source: Produced by the authors.

*NEITHER GENERALIZATION NOR CONTEXT: MAKING
TRANSFERABILITY POSSIBLE*

According to Merriam (2007), external validity “is interested in the possibility of having the conclusions of a study applied to other situations. In positivist oriented works, the interest is devoted to demonstrating that results can be generalized to a more extensive portion of the population. Erlandson (1993) noticed that many qualitative researchers do not believe in conventional generalization because the observations are defined by the specific contexts in which they occur. Denzin and Lincoln (2011) and Denscombe (2014) have also suggested that even though there is some specificity in each case, the perspective of transferability must not be immediately rejected. Guba and Lincoln (1989) state that it is the researcher’s responsibility to assure that the setting of the phenomenon (place, time, and individuals) needs to be sufficient to allow the reader to experience transferability. Merriam (2007) calls it ‘typicality’ of the environment. During recent years, the approach has become increasingly accepted by qualitative researchers.

The works of Cole and Gardner (1979) and Pitts (1994) point out to the importance of researchers’ communicating the limitations of their studies, so as to avoid undue generalizations from the findings, considering that those findings have a specific setting or, even because no transfer of findings can occur without criticism or adaptations. Additional information or notes need to be considered before any attempt to implement transferability. The authors suggest that the following pieces of information should be revised and organized from the beginning: (i) the numbers of organizations that have participated in the study; (ii) any restrictions in the types of data delivered by the informant(s); (iii) the numbers of participants involved in the study field; (iv) the methods of data collection that have been used; (v) the number and length of sessions for data collection; (vi) the periods of time during which data had been collected; and also (vii) the details on the procedures and methodological paths taken in the process of analysis.

*TRIANGULATION AS A MEANS OF SUPPORTING CONFIRMABILITY
(OBJECTIVITY)*

Patton (2014) links the objectivity of sciences with the use of instruments that do not depend on human skills or perception. The author recognizes, however, the existing problems when guaranteeing real objectivity in qualitative research, considering that tests and questionnaires are designed by human beings, and consequently, the presence of the researcher's prejudices and preconceptions is inevitable. The concept of confirmability is comparable to the qualitative researcher's concern regarding objectivity. In this regard, measures must be taken to assure, as much as possible, that the conclusions derived from the work actually come from the experiences and ideas of the respondents, not from the traits and personal preferences of the researcher. The role of triangulation in promoting confirmability must be emphasized, in order to reduce the effects of the researcher. Miles, Huberman, and Saldaña (2013) consider that a key criterion for confirmability is the researcher's account on his/her own predispositions or convictions. For this purpose, beliefs that base the making of decisions and the choosing of methods need to be made explicit in research reports, as much as the reasons for favoring one approach over another. In terms of results, the researcher's *a priori* theories that are not confirmed by data also need to be discussed. Once again, a detailed methodological description allows the reader to determine the quality of the data.

*IS IT POSSIBLE TO MEET RELIABILITY STANDARDS IN QUALITATIVE
RESEARCH?*

When addressing reliability, the positivist researcher employs statistical techniques to show that if the work were replicated in the same setting with the same methods and with the same kind of participants, the results would be similar. Nevertheless, Fidel (1993) and Marshall and Rossman (2015) note that the changing nature of the phenomena under examination by qualitative researchers makes such positivist premises a bit problematic. For Florio-Ruane (1991), such techniques are statistical and 'freeze' the

‘ethnographic present’ of the researcher’s setting, which would hinder further reproductions, considering that all variables are subject to change. Lincoln and Guba (2012) argue there are strong bonds between credibility and reliability and that, in practice, the evidence of credibility helps to provide reliability. According to the authors, this latter can be obtained through the use of triangulation in the data collection process, as in focus groups and individual interviews, which may lead to the option of overlapping methods. They even explain that in order to make a work more reliable, the study processes and methods must be described in detail, which will enable another researcher to reproduce the work and not necessarily obtain the same results, but to move forward in other contexts and situations. In this way, the research project can be seen as a ‘prototype’. The depth of the details provided also enables the reader to assess the extent to which the research practices have been adequate. In order to enable the reader to develop a more complete understanding of the methods and their efficiency, reports need to include sections devoted to the research design and its applications, with descriptions of what had been planned and executed at a strategic level; they also need to include operational details on data collection that address even the small details of what had been done during the field experience, as well as a careful assessment of the project that measures the efficiency of the examination process.

LIMITATIONS OF TRIANGULATION AND STEPS TO FOLLOW TO AVOID DEVIATIONS

Triangulation has some shortcomings. First of all, replication is difficult to achieve in qualitative methods, particularly, due to the difficulty in replicating them, mainly because their basic concepts are tied to the researcher's point of view. Moreover, caring for the non-use and consequent legitimization of a dominant method or any preferred method by the researcher is important. The same goes for data collection and analysis techniques. Obviously, a particular method or technique may, in fact, be stronger or more suitable for a given phenomenon under examination, but whichever the method or technique chosen, it has to be made explicit and justified. Otherwise, the objective of triangulation is very likely to be subverted. As a matter of fact, data that had previously derived from different methods being used to produce a unitary vision that must pass as "truth" seems very simplistic. Once reality is regarded as multifaceted, 'truth' starts functioning merely as a limit and a guideline (ALMEIDA; PINTO, 1986).

According to Becker (1996), even if some methods supposedly represent 'truth' more than others, 'truth' itself is a misleading view. Based on the premise that different paradigms underlie qualitative and quantitative methods, which at the same time represent different ways of conceiving reality, it is possible to believe, in line with Fielding and Fielding (1986), that researchers can incorrectly interpret the converging and diverging points among the collected data, with very diverse methods.

Another limitation lies in the variety of existing perspectives on validity, according to the following paradigm: whereas a positivist model requires rigorousness in the process of the method application, a constructivist model, for instance, is no less rigorous; yet, it concedes that it is the interpretation processes that make the finding of the truth possible and not the methods (LINCOLN; GUBA, 2012). Fielding and Schreier (2001) observe that the option of multiple sources of information may be misleading as a way of preventing mistakes from happening, since if there are actually any mistakes in any of the methods, the duplication of those mistakes will

follow suit. Consistent with this view, hardly ever results coming from different methods will in fact confirm one another.

Cox and Hassard (2005) point to the fact that triangulation is not restricted to validity; it also allows obtaining a more thorough and holistic picture of the phenomenon under examination. On this matter, Kelle (2001) emphasizes that taking the notion of complementarity of methods into account, convergence or divergence of results alone should not be taken as a path. In other words, for the author confirming or invalidating results obtained from applying different methods does not match the use of triangulations intentions; rather, triangulation has to do with producing a better picture of the phenomenon under examination, a more complete one, compared to the case in which a single method is used. Therefore, triangulation requires a good deal of creativity and ingenuity in the data collection process, as well as accurate interpretations of it all.

FINAL CONSIDERATIONS

After the aforementioned discussions signaled here, triangulation can be said to be an alternative option for validating processes (DENZIN; LINCOLN, 2011). Diverse actions such as applying a group of methodological perspectives together, diversifying empirical materials and making the participation of various researchers in a single study possible need to be seen as an opportunity to increase rigorousness, diversity and depth in research in the field of Social Sciences. This paper aimed at systematically discussing quality in qualitative research through the use of triangulation. It is possible to see this contribution evidenced in the discussion developed in the fourth topic, particularly, in Table 2, which presents some guidelines for the improvement of credibility in qualitative research.

Studies using a single method, approach, or research technique seem to be more susceptible to mistakes when compared to other studies that use multiple ones. Triangulation or other multi-method strategies provides a powerful alternative paradigm that makes it possible to reach more informative, complete, useful and balanced research results (MATHISON, 1988). In the area of Management, a multidisciplinary field involving the presence of multiple paradigms, there are different contexts as compared to the field of Natural Sciences, in which one paradigm replaces the other. As a means of enabling meaningful advances in the fields of Management Sciences, making studies more relevant and keeping them as scientifically rigorous as possible is necessary. Partly, it depends on the abilities of the researchers to find their own epistemological path(s). Thus, triangulation emerges as an alternative option for encountering such paths. However, the development of mixed research methods has been put off so far, since researchers still bear concerns surrounding the (im)practicability of integrating qualitative and quantitative research methods (BRYMAN, 2007).

Apparently, one of the major concerns of qualitative researchers is the difficulty of dealing with existing prejudices surrounding quantitative methods or techniques, and vice-versa. Furthermore, one thing that goes particularly against qualitative research is the difficulty experienced by re-

searchers when achieving validity and generalization standards that quantitative research does allow researchers to reach. In this sense, promoters of qualitative research question the objectivity of positivist studies and their impracticability in the Social Sciences. The multi-method approach has become a strategy that enables researchers to visit both paradigms.

Additionally, this paper leads to some advances in the discussions about the use of triangulation and its relative achievements in terms of quality of what is produced, particularly in terms of rigour, scale, complexity, variety and depth in research in the Social Sciences. For this purpose, it has been necessary to discuss and systematize the concepts of credibility (as corresponding to internal validity), transferability (as referring to generalization or external validity), confirmability (as parallel to objectivity), and reliability. We hope that with this contribution, in addition to the systematization proposed in Table 2, we could help to bridge the gap revealed by Turner, Cardinal and Burton (2017) pointing out that, in spite of the wealth of studies on triangulation, its application is still rare in Organizational Studies.

Indeed, any study requires setting its philosophical foundation. Moreover, all researchers need to be aware of the worldview that implicitly or paradigmatically guides their studies (CRESWELL; CLARK, 2010). This means that even though researchers normally live surrounded by a high degree of uncertainty, it is necessary for them to find their own epistemological and ontic route, as a way of guiding their own conclusions and methodological decisions. Such is the path leading altogether theory and practice, by widening existing knowledge and propelling new findings (MORIN, 2010).

Finally, it is important to consider that scientific knowledge, particularly in the case of Applied Social Sciences, does not aim at simply decoding reality and creating a final understanding about the way in which facts arise; rather, it aims at comprehending reality as the result of a social construction and emplacement. The empirical verification in the process of research makes it possible to unravel the relevance of rational conceptions and developed theories by observing parts of the world as they are experienced (BACHELARD, 1996).

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DADOS DOS AUTORES

MÁRCIO MOUTINHO ABDALLA* *marcioabdalla@id.uff.br*

Doutor em Administração pela FGV-EBAPE

Instituição de vinculação: Universidade Federal Fluminense - PPGA

Volta Redonda/RJ - Brasil

Áreas de interesse em pesquisa: Estratégia Empresarial; Estratégia, Governo e Desenvolvimento; Epistemologia de Pesquisa; Métodos Qualitativos de Pesquisa; Análise Crítica do Discurso.

* Rua Desembargador Ellis Hermydio Figueira, 783, Bloco A, sala 304 Aterrado Volta Redonda/RJ 27213-145

LEONEL GOIS LIMA OLIVEIRA *leonelgois@gmail.com*

Doutor em Administração pela FGV-EBAPE

Instituição de vinculação: Centro Universitário Christus

Fortaleza/CE - Brasil

Áreas de interesse em pesquisa: Ensino e Pesquisa em Administração; Gestão do Poder Judiciário; Gestão de Projetos; Controle Interno.

CARLOS EDUARDO FRANCO AZEVEDO *francoazevedo@globo.com*

Doutor em Administração pela FGV-EBAPE

Escola Superior de Guerra

Rio de Janeiro/RJ - Brasil

Áreas de interesse em pesquisa: Inovação; Defesa; Estratégia.

RAFAEL KURAMOTO GONZALEZ *rafael_k_gonzalez@yahoo.com.br*

Doutor em Administração pela FGV-EBAPE

Instituição de vinculação: Instituto Federal do Paraná

Curitiba/PR - Brasil

Áreas de interesse em pesquisa: Estratégia; Métodos Qualitativos de Pesquisa; Inovação.