



## METHODOLOGICAL PROPOSAL FOR THE DEVELOPMENT OF THEORETICAL FOUNDATION ON CULTURE, CLIMATE AND ORGANIZATIONAL BEHAVIOR

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### ABSTRACT

This research aimed to deepen studies on the tripod culture, climate and organizational behavior for the development of the theoretical foundation of a doctoral thesis. The strategy used was the bibliographical research, which aimed to identify the main scientific works of the world related to the themes in reference. The starting point was the structuring of a keyword tree, defining the central theme and the thematic axes to start the searches. The construction of the tree was based on the definition of the Boolean expressions used in the three search engines: *Scopus*, *ISI Web of Knowledge* and *Science Direct*, all linked to the periodicals of the Coordination of Improvement of Higher Education Personnel. At the end of the research process, we select and catalog the documents found by creating a portfolio. In order to carefully analyze the results of the bibliographic research, four steps were structured to filter the findings, thus choosing the best and most significant articles. The applied strategy allowed the survey of the literature for the development of the theoretical foundation.

**Keywords:** Bibliographic research; Organizational culture; Organizational Climate; Organizational behavior.



## 1. INTRODUCTION

Today, companies are adapting more quickly to the demands of a more informed society integrated by social networks, which seeks products and services that focus not only on quality and cost, but also on the sustainability of the process. Companies develop competitiveness based on unstable markets and economies and there are many variables that have contributed to directing them in this direction, such as digital transformations, strategic mergers, globalization and frequent and intense changes in the employer and employee relationship.

Organizations that seek to understand themselves internally, their culture, values, beliefs, emotions, etc., as part of a larger system, analyzing and understanding factors related to organizational behavior, thus enabling the creation of a climate conducive to innovation, creativity, improved productivity/profitability and quality of life at work (Robbins et Judge, 2014; Schein, 2010).

Today, there is ample access, at any time and in any place, to information on the most varied themes in the most remote parts of the world, a fact that has become possible due to the digital transformations. If a parallel is traced with the search for information in the academic world, through access to publications in renowned journals and magazines of the world, before the technological advance, one perceives that one of the greatest difficulties was to obtain information. However, if this same analysis is done today, it is noticed that the problem has reversed, that is, there is too much information available (Treinta *et al.*, 2014, Miranda Junior, 2014).

The valuation of science, technology and innovation in the globalized world has increased indicators on intellectual production, patents and scientific information in general. To facilitate the work of measuring these metrics, the advance of information technologies played a prominent role. Four approaches that are most used in this field of study should be highlighted. They are: Bibliometrics, Scientometrics, Informetrics and recently the Webometrics (Moretti et Campanário, 2009). These approaches have similar treatments (Vanti, 2002), often used as synonyms, but aim at different fields: Bibliometrics – scientific production; Scientometrics – quantitative advances in science; Informetrics – information in any format; Webometrics – web content.

The term bibliometrics was first used by Paul Otlet in his 1934 work entitled *Traité de Documentación*, whose meaning was the means of quantifying science, using the statistical application in the sources of information. However, it was Alan Pritchard, in 1969, which popularized the term bibliometrics, when he suggested that it should

replace the term “statistical bibliography”. In Pritchard’s conception, it is a field of study that uses mathematical and statistical models to analyze the written communication of a certain area (Vanti, 2002).

Thus, bibliometrics is applied with the objective of providing a quantitative approach to the research topic, so that with the statistical treatment of the data it is possible to map the construction of knowledge related to the research themes. It is worth mentioning that the elaboration of a bibliographic research strategy is extremely useful and important in an exploratory research in underdeveloped and studied areas.

It is worth mentioning, according to Moretti et Campanário (2009), that bibliometrics is also currently used in business management, seeking to identify advances in the technology of products, processes and services, starting to be incorporated into the field of Competitive Intelligence.

Organizations from all fields of activity are naturally aware of the need to achieve and perform at least satisfactory performance in human capital management as a way to remain competitive in the market. The endless quest for better organizational performance results mainly from the growing demands of society, from the transformations in the capital versus work relationship, and also from the organizations’ need to gain the confidence of the community by showing competence in the management of their processes.

The bibliographic research is the first action to be carried out in any scientific research (Araújo *et al.*, 2011, Mattos *et al.*, 2004), since it identifies and selects previous knowledge/information about a problem that was studied by other authors, enabling the researcher to obtain and analyze research already done on a particular subject.

Corroborating with this analysis, Treinta (2015) emphasizes that, when initiating a new academic research, everything that is being discussed, published and generated in terms of knowledge about a specific theme must be mapped, filtered and selected to meet the demands of the scientific research in question, to begin the construction of related knowledge.

For the above, this article aims to propose a strategy for carrying out bibliographical research in order to deepen studies on culture and climate in organizations, reinforcing the understanding of organizational behavior for the development of the theoretical foundation of a doctoral thesis.



In addition to this introduction, this article is organized in three other sections: section 2 describes the strategy used to carry out the bibliographic research; section 3 presents the analysis of the results obtained; and section 4 informs the main conclusions of the study.

**2. RESEARCH STRATEGY**

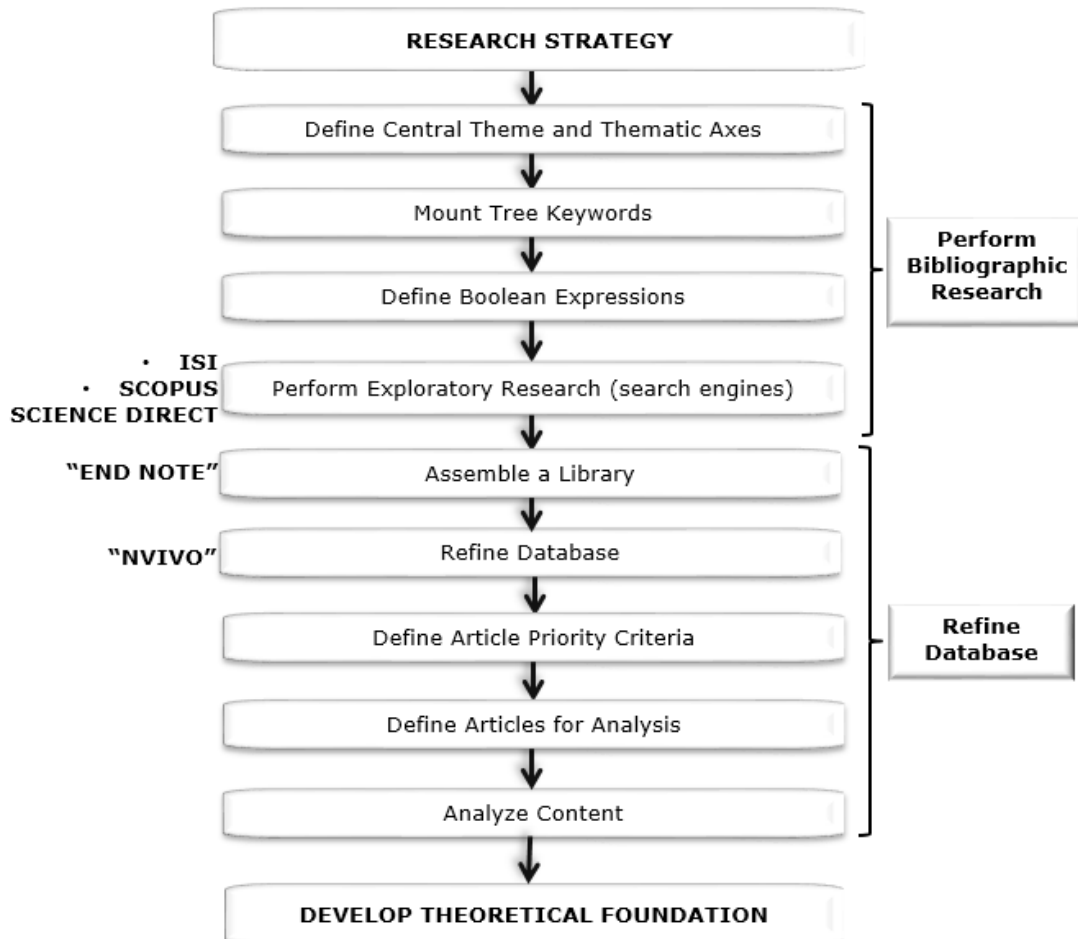
The aim was to establish a strategy for conducting the research and to select in a judicious and structured manner the best and most relevant articles related to culture, climate and organizational behavior, as shown in Figure 1.

The research strategy used is structured in two work blocks, whose objectives are, respectively: to carry out bibliographic research; and refine the database to filter the findings of the research to carefully select the best and most significant articles identified. Each of these steps will be detailed throughout this article.

**A. Carry out bibliographic research**

The bibliographic research carried out in this study is anchored in the Treinta (2011) model, which uses as a starting point the structuring of a keyword tree, with the definition of the central theme and the thematic axes to be researched. We sought to identify key words, both vertically and horizontally, established from a general reading on the subject in question and by previous knowledge of the researchers on the subject. In the vertical sense, the objective is to establish distinct and complementary thematic axes that allow comprehensiveness to the research. In the horizontal sense, the thematic axes are branched, thus guaranteeing the depth and the specialization of the research in relation to the theme (Farias Filho, 2013). Figure 2 shows the structure for constructing the keyword tree.

Organizational behavior and thematic axes were defined as the central theme: organizational climate, organizational culture, attitude and outcome. From each thematic axis, thematic sub-axes, also titled as keywords



**Figure 1.** Research Strategy  
 Source: Authors' elaboration

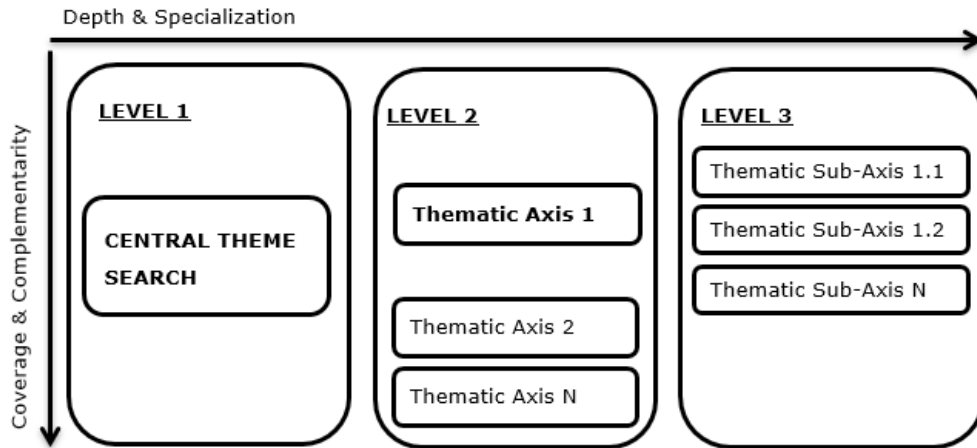


Figure 2. Structure of the keyword tree  
 Source: Farias Filho (2013)

in the tree, were defined as: value/management/leadership, trust/satisfaction, behavior and productivity/business, and commitment/health, as shown in Figure 3.

After setting up the keyword tree, the Boolean search expressions were established and the search strategy was defined in the existing engines whose axes and keywords were connected to the connectors “AND” and “OR” with the aim of maximizing the research. The use of the connectors is extremely important to explain and justify the existence of many or few articles found. When

using “AND”, the scope of the search is restricted because only the articles that have all the search terms used are retrieved. The “OR”, in turn, widens the scope of the search, as it retrieves all articles that have at least one of the terms used.

Thus, for the exploratory search in existing engines, the strategy used was to place the “AND” connector between the central theme and each of the four thematic axes in the keyword tree, in the vertical direction; and, in the horizontal sense, the “OR” connector between the

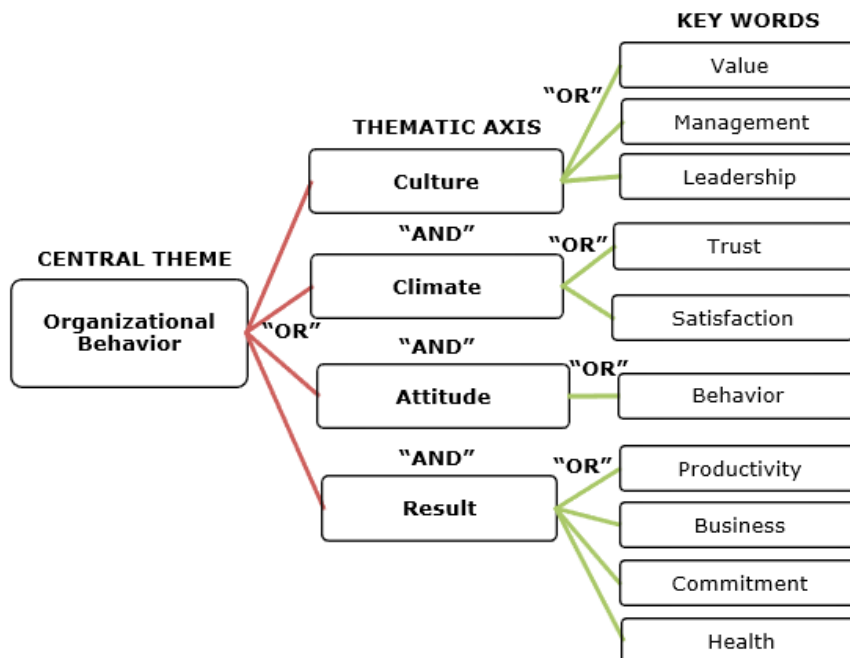


Figure 3. Keywords tree with definition of Boolean expressions  
 Source: Authors’ elaboration



Key Words	Culture	Climate	Attitude	Result
<b>Search Engine</b>	<b>Science Direct / Scopus</b>			
Boolean Expressions	{{Organizational Behavior}} AND (culture) AND (value OR management OR lead)	{{Organizational Behavior}} AND (climate) AND (confidence OR satisfaction)	{{Organizational Behavior}} AND (attitude) AND (behavior)	{{Organizational Behavior}} AND (result) AND (productivity OR business OR commitment OR health)
<b>Search Engine</b>	<b>Emerald</b>			
Boolean Expressions	("Organizational Behavior") (culture) (value OR management OR lead)	("Organizational Behavior") (climate) (confidence OR satisfaction)	("Organizational Behavior") (attitude) (behavior)	("Organizational Behavior") (result) (productivity OR business OR commitment OR health)
<b>Search Engine</b>	<b>Web of Science (ISI)</b>			
Boolean Expressions	TS=({"Organizational Behavior"}) AND (culture) AND (value OR management OR lead)	TS=({"Organizational Behavior"}) AND (climate) AND (confidence OR satisfaction)	TS=({"Organizational Behavior"}) AND (attitude) AND (behavior)	TS=({"Organizational Behavior"}) AND (result) AND (productivity OR business OR commitment OR health)

**Figure 4.** Bibliographic research according to search engines

Source: Authors' elaboration

keywords defined for each thematic axis, as can be seen in Figure 3.

The construction of the keyword tree supported the definition of the Boolean expressions used in the three search engines, *Science Direct/Scopus*, *Emerald*, *Web of Science (ISI)* and which were accessed through the Journal Portal of the Coordination of Personnel Development Capes, according to Figure 4.

With the results of each engine, a library was created for each of the four thematic axes aligned with the central theme of the research. They are: culture, climate, attitude and result. From the exploratory search process, 8,826 documents were found in the four databases used and consolidated, which were selected and cataloged through the EndNotes™ software to assemble the library. The following is the methodology used to refine the database obtained from the bibliographic research.

#### B. Refine the database

To refine the database, four steps were structured to analyze the results of the bibliographic research. The aim of this study was to filter the research findings in order to carefully select the best and most significant articles.

To structure these steps, the gold mining process was used as metaphor, symbol of transforming a crude product into something valuable. This process is composed of four steps: extraction, refinement, lapidation and polishing, as shown in Figure 5.

**1<sup>st</sup> Stage – Extraction:** with the intention of saturating the research, simultaneous searches were carried out on three complementary search engines – *Science Direct/Scopus*, *Emerald e Web of Science (ISI)* –, selected due to their relevance and ease of obtaining and processing the data. This process resulted in 8,826 documents, which were selected and cataloged through the Endnotes™ software, enabling the formation of an initial database, in which all information regarding publications could be viewed.

**2<sup>nd</sup> Stage - Refinement:** with the documents cataloged, an initial filter was made to remove duplicate documents and with insufficient information, resulting in 6,178 exclusions, leaving 2,648 publications remaining. Subsequently, a second filtering was applied, through the analysis of the titles, in order to remove the documents that were further from the central theme of the research. In this analysis, the context of the research and each thematic axis were considered, reducing the sample to 927 articles. Finally, a third filter was used to remove books and/or part of books, in order to compose a sample of articles exclusively. This filtering resulted in a sample of 368 articles.

**3<sup>rd</sup> Stage – Lapidation:** after the composition of the database with the 368 documents selected, it was necessary to define the criteria of prioritization of the articles, in order to organize the most relevant ones. The articles were ranked according to the importance of the four criteria: H-index of the main author of the article; number of citations of the article; value of the SJR (SCImago Jour-

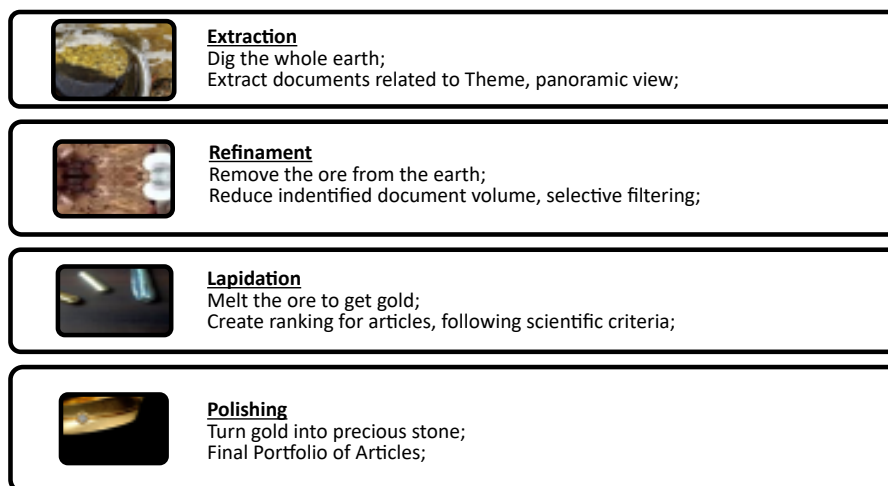


Figure 5. Bibliographical research described from the metaphor of the gold mining process

Source: Authors' elaboration

CRITERIA	DEFINITIONS	INDICATORS
Author	It analyzes how much the author is productive and representative in terms of academic production.	Value of H index of the main author of the article
Quotes Article	Analyzes the citations received by the article for the basis of other authors and publications.	Number of citations received by article
Periodic	Identifies the academic prestige of the journal in which the article was published, evaluating productivity.	SJR Index value (Scimago Journal Rank) Weighted value citations per document.
Thematic Alignment	Evaluate abstracts and keywords with the goals of this academic research.	Note applied from the article alignment analysis with the research

Figure 6. Priority criteria for selected articles

Source: Elaborated from Treinta (2011)

nal Rank) of the journal in which the article was published; and thematic alignment of the article (Figure 6).

According to Treinta (2011), the calculation for prioritization of articles took into account the four criteria with the respective indicators, together, since individually they could present evaluation failures. For example, if one considers only the number of citations of the article, one can evaluate the number of citations of a given document, but one is not able to measure the quality of citations.

The indicators of the first three criteria were based on the Scopus academic search engine, since it is a reference source and one of the largest multidisciplinary databases with a representative number of indexed articles.

The note on theoretical alignment, in turn, was determined by the authors of this study according to the score presented in Figure 7.

THEMATIC ALIGNMENT	1 TO 9
Not aligned	1
Little aligned	3
Medium Alignment	5
Aligned	7
With relevance	9

Figure 7. AT criterion score

Source: Elaborated from Treinta (2011)

For each of the four criteria a weight was assigned, as shown in Figure 8.



CRITERION	WEIGHT
Citations received by article	0,23
Impact Factor of the periodical in which the article was published (SJR)	0,22
H-index of the article's main author	0,13
Alignment of the article with the research topic	0,42

**Figure 8.** Weights assigned to criteria  
Source: Elaborated from Treinta (2011)

With the definition of the established criteria and the determination of the notes for each indicator, the process of ranking of the articles began, thus structuring a more consistent process. Thereafter, it was applied to weighting represented by the formula (F) with their respective elements: thematic alignment (AT), citations (C), impact factor (FI), h-index main author (HAP).

$$F = (0,42 \times AT) + (0,23 \times C) + (0,22 \times FI) + (0,13 \times HAP)$$

To standardize the different values of each of the indicators and place them in the same parameters, the notes were matched according to established ranges. Thus, the received scores became 1, 3, 5, 7 or 9. Table 1 presents each of the criteria, the minimum and maximum values found, the established ranges and the corresponding scores.

**Table 1.** Minimum and maximum values, established ranges and corresponding scores, according to the evaluation criteria

CRITERION	MINIMUM VALUE	MAXIMUM VALUE	RANGE	SCORE
Citations	0	1760	Until 10	1
			11 – 30	3
			31 – 50	5
			51 – 70	7
			Above 70	9
H index	0	58	Until 10	1
			11 – 20	3
			21 – 30	5
			31 – 40	7
			Above 41	9
SJR	0	11,522	Until 1	1
			1,1 – 3	3
			3,1 – 5	5
			5,1 – 7	7
			Above 7,1	9
Alignment to research	1	9	Not aligned	1
			Little aligned	3
			Aligned	5
			Very aligned	7
			Extremely aligned	9

Source: Elaborated from Treinta (2011)

For each score a relative degree of importance was assigned, according to the scale of measurement presented in Figure 9:

Verbal Scale for Values Judgment	
1	Equal Importance
3	Moderate Importance
5	Strong Importance
7	Very Strong Importance
9	Extreme Importance

**Figure 9.** Verbal scale for judgment of values  
Source: Authors' elaboration

In this way, the definition of the prioritization criteria and the ranking of the selected articles became more focused, contributing strongly to the research development (Table 2).

At the beginning of this lapidation phase the database contained 368 documents; therefore, it was necessary to define the criteria of prioritization of the articles. After calculating the final notes, it was possible to generate a ranking of the 152 articles in the database, ranked according to the criteria: H-index of the main author of the article; number of citations of the article; value of the SJR (SCImago Journal Rank) index. The article that ranks first in the ranking, entitled "The affective underpinnings of job perceptions and attitudes: the meta-analytic review and integration", obtained the score 8,22.

The objective of the next and last step of the filtering was to define which of the 152 ranked articles would be studied. This step was based on a qualitative analysis with calculations based on descriptive statistics, in order to select the most relevant articles related to the central theme of the research - organizational behavior.

**4<sup>th</sup> Stage – Polishing:** with the structuring of the ranking of the 152 articles in the database, the 3<sup>rd</sup> quartile of the sample can be calculated as follows:

$$3^{\text{rd}} \text{ portfolio quartile} = (0,75 * N) + 1$$

$$N = 152 \text{ articles}$$

$$3^{\text{rd}} \text{ quartile} = 115 \rightarrow 115^{\text{th}} \text{ position}$$

$$\text{Research Bank: } 152 - 115 = 37 \text{ articles (best rated)}$$

The 37 articles (from the first quartile) of greatest relevance to the research were established (Treinta, 2011), thus finalizing the final portfolio of the bibliographic study. The other database articles served as a reference for consultations.



Table 2. Rankings part 152 articles

	TÍTULO	ÍNDICE	CITAÇÕES	SJR	ALINHAMENTO	RANQUEAMENTO
1	The Affective Underpinnings of Job Perceptions and Attitudes: A Meta-Analytic Review and Integration	3	9	9	9	8,22
2	The job satisfaction-job performance relationship: A qualitative and quantitative review	9	9	9	7	8,16
3	What is the difference between organizational culture and organizational climate? A native's point of view on a decade of paradigm wars	1	9	9	9	7,96
4	Team effectiveness 1997-2007: A review of recent advancements and a glimpse into the future	7	9	9	7	7,90
5	Behavioral ethics in organizations: A review	7	9	9	7	7,90

Source: Authors' elaboration. \*Table header, in this order: Title; Index; Citations; SJR; Alignment; Ranking.

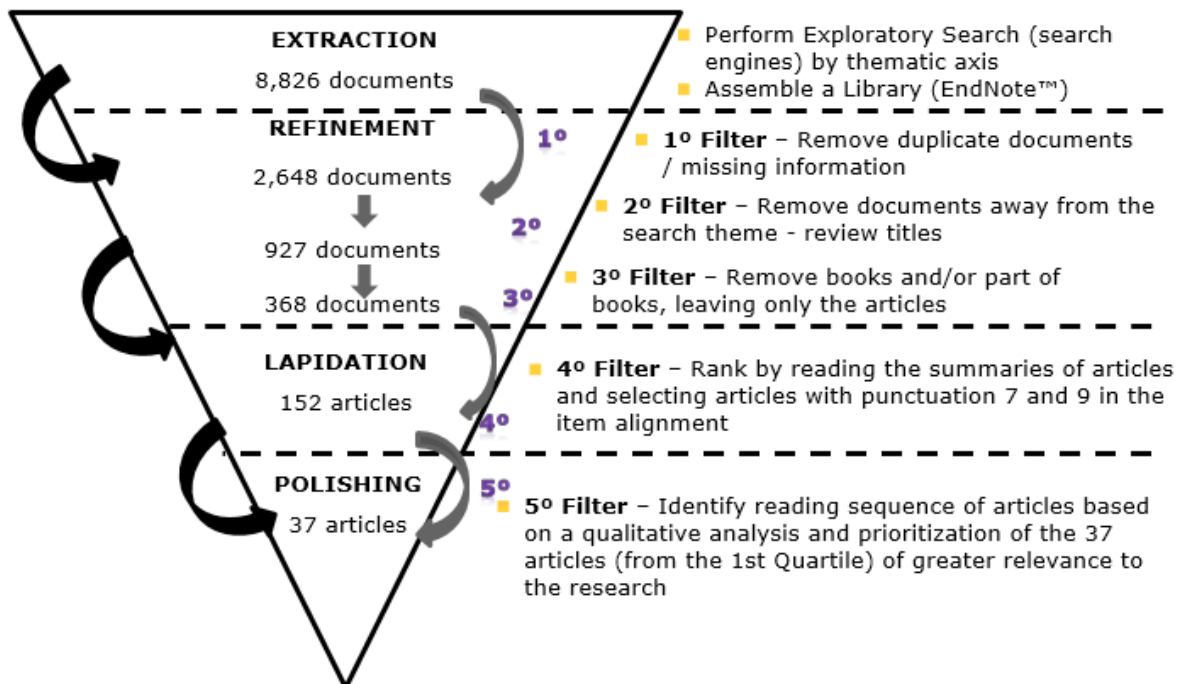


Figure 10. Filtering process of bibliographic research

Source: Authors' elaboration



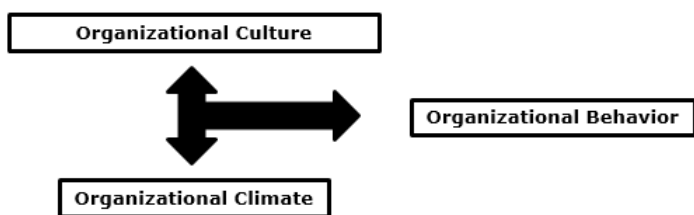


Figure 10 shows all the filters used throughout the research, starting from a set of 8,826 documents found initially until reaching the 37 articles that compose the final portfolio.

After the development of the whole process of prioritization and selection of articles described, a final, more thorough and rigorous textual evaluation of all the articles present in the first quartile was carried out to ensure that they were in fact aligned with the research. It is worth mentioning that even after the prioritization process of the articles for reading, occasional searches were necessary to deepen topics.

### 3. ANALYSIS OF RESULTS

Faced with the results of the last stage, the keyword tree was restructured, grouping the prioritized articles into three main blocks: organizational culture, organizational climate and organizational behavior. From this action, the development of the theoretical foundation was organized, which allowed advancing in the concepts presented in the tree of keywords, thus defining the reference model of the research, as shown in Figure 11.



**Figure 11.** Reference Model  
Source: Authors' elaboration

The reference model establishes the relationships between organizational culture, organizational climate and organizational behavior, which directly impacts productivity and, consequently, organizational effectiveness. In developing this model, the researchers realized that the existing variables in organizations, regardless of their type or size, should be analyzed judiciously by studying their impact on organizational behavior.

According to the researched literature on the themes in question (Schein, 2010; Hofstede, 2010), organizational culture is described as "deeper" than climate, when the definition includes the values and premises that direct behaviors, that is, the "invisible" part of culture. The organizational climate is defined as a cultural artifact resulting from shared tacit values and presuppositions (Schein, 2000).

Climate offers an approach to tangible values in which managers can focus efforts to generate the behaviors they seek to achieve effectiveness. Culture is the intangible values that probably accumulate to produce the expected behavior of people in an environment. The importance of knowledge of culture, its relation with organizational climate and the impacts on the behavior of employees and, consequently, the organization are verified as a key element in the management process of any company (Askanasy *et al.*, 2000; Schneider *et al.*, 2013).

The strategy used to carry out the bibliographic research was an important medium for the search of information on studies on the tripod culture, climate and organizational behavior to create a line of reasoning on the subject. From there, the best and most significant publications were analyzed in a judicious way, making it possible to identify the research gaps that allowed defining the research problem.

### 4. FINAL CONSIDERATIONS

This work was started in order to deepen studies on culture and climate in organizations, reinforcing the understanding of organizational behavior. From then on, two dimensions were gradually formed in the study of these concepts: the rational and the emotional dimension.

In carrying out the bibliographical research to raise the state of the art of publications on culture, climate and organizational behavior, it was noticed that for decades the studies on these concepts were based only on the rational/cognitive aspect, generally analyzing how employees think and behave at work. However, it is now perceived that workers' productivity and behavior are directly related to the emotional state of the members of the organization and that the emotions present in organizational practices cannot be neglected. It is up to senior management to boost the emotional culture within organizations, since rationality and emotionality are always present in the organizational daily life independent of the desire of the leaderships.

There is no denying the importance of these studies for the analysis of behavior within organizations; however, there is an emotional pulse present in the day-to-day life of all the companies that need more studies by the researchers.

Since the last decade, some researchers have been working to fill this gap, thus broadening the approach to studies on culture, climate and organizational behavior through the emotional aspect, in order to understand



characteristics, consequences and what kind of relationships can exist between these two dimensions in the organizational context.

The present research identified, from the analysis of bibliographical research, the relevance of the cognitive and emotional dimensions in the tripod culture, climate and organizational behavior in business performance. Faced with this issue, the importance of understanding the set of practices, policies and procedures related to culture and climate, which trigger perceptions followed by emotional reactions and behavior among the members of an organization should be highlighted.

According to Denison (1996), the research on the concepts of culture and organizational climate in the academic world is found in several bibliographic records, the distinction between the organizational climate and the organizational culture may seem very clear: the climate refers to situation and is connected to the thoughts, feelings and behavior of organizational members. Culture, by contrast, refers to an evolved context (by which a situation can be incorporated). The two perspectives have generated different theories, methods and epistemologies with different understandings of the subject by the researchers reflected in a diversity of approaches in the process of identifying the constructs that make up each subject and respective management of the subject. On the other hand, when analyzing the study of the subject in the business environment, it is noticed that there is still dissociation between the identification/pragmatism of the culture in the day to day of the organizations and the understanding/management of the organizational climate as part of the strategy of the company. Some research shows that, in the vision of leadership, corporate culture and the climate are the big business challenges today. It is concluded, therefore, that this field deserves to be more researched, explored and understood in practice, both by the researchers and by the leaderships of the organizations.

Finally, it is worth mentioning that the proposed model was based on the Brazilian context and was generated based on a review of the literature for a Doctoral Thesis. The strategy used requires dedication and considerable time to carry out each step of the bibliographic research; however, the result guarantees a strong research and safety foundation for the researcher to defend it.

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