MAPPING THE HIGH AND LOW CHURCHES: THE EVOLUTION OF THE RESOURCE BASED VIEW

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Abstract

In this paper, it is intended to present and empirically investigate the evolution of the Resource Based View of the firm (RBV). More specifically, drawing on the contributions of Gavetti and Levinthal (2004) and Foss and Stieglitz (2010); we perform a bibliometric analysis in order to demonstrate the segregation of the RBV scholars into the "high church", known as hard RBV and the "low church", soft view.

Differently from previous studies that verify this relation through a descriptive survey of the literature, we develop a more analytical approach, using bibliometric principles. Different from traditional approaches, bibliometrics will be used as an empirical research tool, as of the following description. First, we collect data on the Institute for Scientific Information (ISI) Web of Knowledge platform. We take care to solely select papers that address the RBV and that have been published on the Strategic Management Journal (SMJ), since its launch until 2013; given the prominence of this journal on the Strategy field.

After carefully eliminating irrelevant data from our sample, as well as, correcting bibliographic data errors, we upload the final data matrix to the Citespace platform. This software allows for a visual examination of the cross-interactions among the bibliographic references in several papers (CHEN, 2004, 2006). By analyzing these cross-citations, it is possible to determine the similarities and differences between the bibliographic references used by each author, and consequently segment them into different groups (named "clusters"). Its text analysis tool provides us with the terms/words that characterize each cluster.

Moreover, by counting the number of times each reference is cited, CiteSpace enables us to identify the most central authors (i.e., those that have been most cited in papers belonging to different groups). The premise behind this analysis is that a paper that is widely cited by a significant number of authors tends to be the most relevant and influential in the research field (RUBIN, 2010; FOREST, 1990; CULNAN, 1987; TAHAI; MEYER, 1999).

We also verify the number of citations received by the main authors belonging to each of the "churches" over time, in order to determine whether or not the RBV is advancing toward the in between approach described by Foss and Stieglitz (2010).

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Our results are consistent with Foss and Stieglitz's (2010) argumentation in favor of the existence of two main "churches": the high church, hard RBV and the low church, soft RBV. Moreover, the authors and papers that were considered most relevant by Foss and Stieglitz (2010) are in accordance with our empirical findings. However, differently than Foss and Stieglitz's (2010) suggestion, the RBV does not seem to be moving towards an in between approach, since the evaluation of the citations received by each author over time has revealed that both churches have been strongly and concomitantly used during recent years. This means that there does not seem to be a third, in between church, but rather, a concomitant use of both approaches.

Key words: *resource based theory, high church, low church.*

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1. Introduction and Theorethical Evidence

The Resource Based View (RBV) appears as a new way to explain the strategy of firms, mainly based on assets each firm own. This theory addresses the way in which organizations, in general terms, are able to obtain sustainable competitive advantages from resources and competencies they idiosyncratic have. Born as a critical theory of Industrial Organization, whose main theoretical exponents are Michael Porter (1980, 1985) and the Chicago School (DEMSETZ, 1973), the RBV arises from the union of several studies. Initialy performed by the Austrian School, especially on the seminal work of Chamberlin (1933) and Penrose (1959). However, it was only in the late 1980/1990 that RBV appeared as is known today. One can highlight the work of Demsetz (1988), Lippman and Rumelt (1982), Barney (1986), Wernefelt (1984), Peteraf (1993), Prahalad and Hamel (1990), Nelson and Winter (1982), Dierickx and Cool (1989), Teece, Pisano and Shuen (1997), Malerba and Orsenigo (2000), among others (FOSS; STIEGLITZ, 2010; SAES, 2009).

From that time on (1980/1990), the RBV has become one of the most used theories in the area of strategic studies, growing in number of citations year-by-year. This fact was found after a survey of authors / works most cited articles discussing strategy, which were published in the Strategic Management Journal. The list includes the 30 most cited papers in the last eleven years, so the number of citations of the same work in the 22 previous years. The trend shows that from the 1990s, authors strongly linked to the propositions of RBV. Currently, over 8% of all citations, the seminal work of Barney (1991) topped the list, followed by other famous RBV papers, as highlighted in the previous paragraph (Table 1).

Table 1 - Most Cited Authors in the Period Strategic Management Journal1

ID	Cited Document	1980 - 1990		1991- 2001		2002 – 2012	
		Qty.	%	Qty.	%	Qty.	%
1	Barney (1991)	-	-	89	7,2%	112	8,4%
2	Nelson (1982)	0	0,0%	75	6,0%	78	5,8%
3	Porter (1980)	47	28,0%	139	11,2%	72	5,4%
4	Wernerfelt (1984)	0	0,0%	86	6,9%	66	4,9%
5	Teece (1997)	-	-	18	1,5%	60	4,5%
6	Penrose (1959)	0	0,0%	66	5,3%	59	4,4%
6	Dierickx (1989)	0	0,0%	49	4,0%	56	4,2%
7	Cyert (1963)	11	6,5%	36	2,9%	55	4,1%
8	March (1991)	-	-	18	1,5%	47	3,5%
9	Peteraf (1993)	-	-	35	2,8%	46	3,4%
10	Cohen (1990)	-	-	31	2,5%	46	3,4%

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[1] Research extracting all articles (articles only) published in the *Strategic Management Journal* from the database Web of Science, from term *strategy*. For more details on the research method, see Presoto (2012) Empirical Study or section of this paper.

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11	Pfeffer (1978)	13	7,7%	51	4,1%	43	3,2%
12	Dimaggio (1983)	0	0,0%	27	2,2%	41	3,1%
13	Kogut (1992)	-	-	19	1,5%	39	2,9%
14	Williamson (1985)	0	0,0%	48	3,9%	37	2,8%
15	Barney (1986)	0	0,0%	39	3,1%	36	2,7%
16	Thompson (1967)	26	15,5%	47	3,8%	35	2,6%
17	Jensen (1976)	0	0,0%	36	2,9%	33	2,5%
18	Williamson (1975)	15	8,9%	71	5,7%	32	2,4%
19	Palepu (1985)	0	0,0%	34	2,7%	30	2,2%
20	Aiken (1991)	-	-	0	0,0%	30	2,2%
21	Amit (1993)	-	-	32	2,6%	30	2,2%
22	Porter (1985)	10	6,0%	71	5,7%	29	2,2%
23	Henderson (1990)	0	0,0%	0	0,0%	29	2,2%
24	Porter (1996)	-	-	0	0,0%	29	2,2%
25	Levitt (1988)	0	0,0%	20	1,6%	28	2,1%
26	Rumelt (1991)	-	-	35	2,8%	28	2,1%
27	Rumelt (1974)	46	27,4%	68	5,5%	28	2,1%
28	Eisendhardt (2000)	-	-	0	0,0%	28	2,1%
29	Levinthal (1993)	-	-	0	0,0%	27	2,0%
30	Dyer (1998)	-	-	0	0,0%	27	2,0%
	Total	**168**	**100%**	**1240**	**100%**	**1336**	**100%**

As noted in Table 1, there are various authors that developed up the theoretical basis of RBV. However, these authors did not follow a single way. According Gavetti and Levinthal (2004), the design also advocated by other authors (FOSS; STIEGLITZ, 2010; MATTHEWS, 2006, 2010), there is, from the beginning of the RBV theory, in the 1980s, a split between two standard ways. The first one is called "High Church", linked to the design that was devoted to Barney (1991), based on a model of competitive equilibrium with heterogeneity. The second one, the "Low Church", was linked to the concept of core competences (PRAHALAD, HAMEL, 1990), capabilities (WINTER; DENRELL; FANG, 2003) and dynamic capabilites (TEECE; PISANO; SHUEN, 1997).

However, based on the ideas of Gavetti and Levinthal (2004), Foss and Stiglitz (2010) the two churches would tendend to move toward a central position. In other words, developing a synthesis of the two strands ways. More clearly, Gavetti and Levinthal (2004), Foss and Stiglitz (2010) point out that on one hand the Low Church was becoming more mathematized with more formalized quantitative reasoning. On the other hand, the High Church, was suffering exhaustion analysis by equilibrium theory and dismemberment shed with game theory

All this evidence, coupled with the lack of bibliographical studies on the question of RBV, fostered the main research problem of this study. On the following places we would intend to verify whether or not there is actually an approximation of the two churches toward a central position. Themselves and Sitglitz Foss (2010) indicate the need for further studies on the theme in the final considerations of their studies. Thus, in order to contribute to this discussion this work was proposed. To answer this question, a survey was conducted of articles published in Strategic Management Journal. We filtered the papers that have RBV as

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the main theme. The selection of the refered jornal was performed for its relevance in the field of strategy. Following the tabulation of the papers, the study was conducted in bibliometric CiteSpace software, which is specific for this purpose and therefore infer the emphatically is occurring as the evolution of the two churches.

Besides this introduction, this paper is divided into four additional sections. The second section places the empirical study. A bibliometric analysis method used in the empirical study, it is also detailed in this section. In the third section, the results from the empirical study are compared with the theoretical considerations. Finally, conclusions are presented as well as limitations and suggestions for future work.

2. Empirical Study

The theoretical propositions are evaluated by a bibliometric analysis. This method give us relevant information about the scientific production in a particular subject, such as number of publications, area of studies, and others. Bibliographic data can be organized, summarized and analyzed to identify patterns in the literature (PRASAD, TATA, 2005). It is a quantitative analysis of scientific production.

The starting point was the collection of scientific articles data available in the database ISI Web of Science, Thomson Reuters' world renowned database. It is through ISI database tool and a specific software, CiteSpace, that the bibliometric analysis is conducted. According to the literature, one of the great benefits derived from this type of research is to reduce the influence of the individual who performs it, especially with regard to the selection and exclusion of studies in the literature review. It is worth to note that there is an increase in transparency and replicability (DENYER; NEELY, 2004). The use of bibliometric analysis may have different goals: recognize emerging fields of research, identify clusters and identify the publication record of the origin and evolution of the subject, issues related to the object of interest of this work (SPINAK, 1996; CARVALHO, SARAIVA JR. ET AL., 2010).

The bibliometric analysis can be performed in various ways. It can be, for instance, based on the use of various indicators created, many being known as "laws of bibliometry" (ARAÚJO, 2006). In this work, the main approach adopted is the analysis of the citation and co-citation. According to Araújo (2006), this is the most important area of bibliometrics nowadays. Here the citation is understood as a set of one or more references that once contained in a publication, reveal relationships among individuals, institutions, fields of research, research subjects, showing therefore a link between the publications. According Foresti (1989), analysis of the citation is the study of the relationship between citing documents and cited documents.

Some scientific papers deserve special attention from researchers for being used as the basis for the production of other scientific works. The hypothesis that the frequency with which the references are cited by the scientific community is an indication of its influence. Therefore, in a set of articles, papers with a strong number of citations can be considered those that play important roles in the development of the scientific field analysis (PEREIRA, CARVALHO; ROTONDARO, 2011; NEELY, 2005; CULNAN, 1987; TAHAI; MEYER, 1999). This analysis is called Analysis of Citation, which aims to eventually identify this feature from the lifting of quotes frequently.

The analysis of the co-citation is, in turn, a variant of the analysis of the citation. Its focus is the analysis of similarity of two articles, analyzing records about the number of equal citations (PEREIRA, CARVALHO; ROTONDARO, 2011; NEELY, 2005; CULNAN, 1987).

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Its great importance is to determine groupings of works that present thematic approaches, discussions in common.

Regarding bibliometric studies on RBV, Acedo et. al. (2006) analyze underlying assumptions of the RBV, pointing, in conclusion, the connection of this theory with other theories of the Economics of Organizations. Serra et al. (2007) identify what the Brazilian contribution to the study of strategy with the use of RBV. These authors, including Lissoni, perform another similar study in 2008, establishing a 'state of the art' of RBV in Brazil, identifying research groups, and how this theory has been studied. Coelho et. al. (2009) observe the contribution of the RBV studies organizations in scientific production, concluding that there is widespread. Aragão et al. (2010) makes a descriptive survey of the scientific literature on RBV and Dynamic Capabilities in Brazil.

Supporting the bibliometric analysis, as mentioned above, a specific software is used: CiteSpace. It is a software developed at Drexel University, under the leadership of Professor Chaomei Chen, whose initial proposal was to develop an integrated and widely accessible system for the visualization and analysis of macro structures that reflect the academic literature, mainly based on standards citation and co-citation (CHEN, 2004, 2006).

CiteSpace can be seen today as a tool that allows to trace patterns of aggregation of knowledge and identify ways of processing changing paths in a particular field of knowledge (CHEN, 2010). These two characteristics are fundamental to answer the question that is raised in this paper. In the words of the creator of this tool, the CiteSpace can be compared to a camera that takes snapshots of a 'body of scientific literature' and distills the intellectual landscape of domain knowledge in a large image (CHEN, 2010). Ultimately, it is possible to obtain a clear view of clustering which hitherto may be invisible, clearly outline the growth and evolution of a discipline, a paradigm shift, definition of conflicting opinions, the role of scientific and/or technological in terms scientific research (CHEN, 2010; PRESOTO, 2012) .

The core functionality of CiteSpace is the analysis and visualization of dynamic networks constructed from a set of citation from articles. It provides an extensible framework for the analysis and synthesis of a series of complex networks. Through the introduction of important concepts such as Pivot Point, algorithms and standards-based connectivity to a network constantly evolving, CiteSpace identify and understand the network of citations, as well as their transformations (CHEN , 2010) .

Although further analyzes are possible, notably CiteSpace is used to create and analyze networks of citations in articles and other documents of a scientific nature (CHEN, 2004 , 2006). Particular feature of CiteSpace, compared to other known bibliometric analysis softwares is the ability to build clusters from the set of citation, i.e. networks where citation are connected to each other from a pre-established criteria, allowing to identify clusters of works dealing a common theme, directing research only to specific interests.

DCA is the analysis (Co-citation Document Analysis) that is used here. The logic of this analysis is shown in Figure 1. The citations present in each article are crossed with each other, identifying citations present in more than one article, for example. A link between two citation will appear when these two citations are present in the same article. The strength of this link is determined by the number of articles mentioning these two work together (the concept of co-citation is rooted in this analysis). Forming conglomerates, citation that are grouped, forming clusters. Each citation form a node of the network. Two other important information is extracted from the network co-citation:

- Pivot Nodes: is a quote that has been identified as critical in the transition from one stage to another;

- Hub Nodes: key citation, used by many authors as a basis for their work.
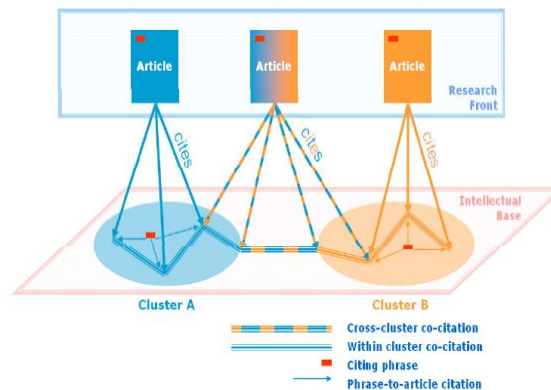

Figure 1 – DCA analysis logic. Source: Chen (2004).

Bibliometric analysis requires careful planning (COOPER; LINDAY, 1998). Cooper and Lindsay (1998) state four stages of a bibliometric analysis: choice of literature to be analyzed, the evaluation of data collection, analysis and interpretation of information and presentation of results. The specific steps related to the use of the software can be found in Chen (2004, 2006, 2010) and Presoto (2012).

All surveys of scientific literature on RBV were drawn from the ISI Web of Knowledge platform. This choice is based on the fact that this platform provides access to the database Web of Science, which, according official information, is the most comprehensive database of the world, offering in its collection approximately 8500 titles. It is possible to refine searches carried out there in different ways. For the scope of this work, it was used only two filters: Sources of works (Source Titles) and the Document Types. Only papers published in the Strategic Management Journal are analyzed. This choice was made to only work of the highest importance were incorporated in the analysis. Moreover, he wished that only works exclusively focused strategy were studied. It is noteworthy that there is no filter related to the adoption date of publication. Besides, only the works that were classified as articles were analyzed. These are "certified knowledge", which have been subjected to critical review by other researchers and obtained its approval (RODRIGUES; NAVARRO, 2004).

The choice of literature that will be discussed is one of the key points of this kind of analysis, because the validity of the results is dependent on the quality of this choice (SINGLETON; STRAITS, 1999). Thus the database and the filters should be carefully chosen, as well as the terms search keys. Six terms were chosen for the research: Resource Based View, Knowledge Based View, RBV, KBV, competences and capabilities. These terms were chosen in order to cover all possible designations for the Theory of Resource Based View, as discussed in Theoretical Study .

From an initial search with 363,520 publications, only 420 articles were selected to be analyzed. The selected articles cover three decades. The oldest data item 1983 while the most recent 2013. The distribution of the number of items depending on the year of its publication is represented by the histogram in Figure 2. The data obtained from ISI database were extractedd in a metadata file2.

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2 Presoto, Thruler and Souza (2013) point out a limitation commonly ignored in bibliometric studies: the quality of the metadata. Since most of the analyzes that are performed using statistical principles, minor errors such as
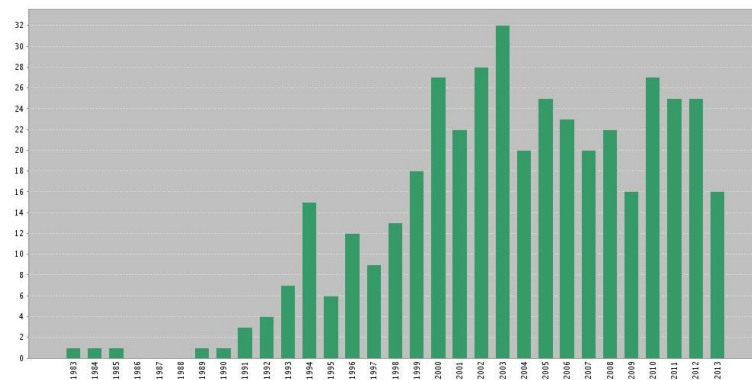
Figure 2 - Histogram of publications per year.

3. Results and Analysis

A hypothesis commonly adopted by bibliometric analysis refers to the number of times an article is cited by another scientific article. It is considered an article more influential than others, form the scientific point of view, as base of concepts and methods, when this is more often cited than the other. From this precept and using an indicator that is provided by ISI (the number of times an article is cited by other articles that make up the database) it is possible to determine a list of articles of great influence in the 420 articles found. Similarly, it is possible to identify authors who were considering the 420 most cited articles. In the first analysis, one aims to determine the number of citations to each of the 420 articles. In the second analysis, given the set of all references used by 420 articles, which are the most frequent. The results are compiled in Table 2.

Table 2 – Documents more cited and citation with high frequency3.

Documents with more citation				Citation with high frequency			
N.	Document	Qty.	%	N.	Document	Qty.	%
1	Wernerfelt (1984)	3473	15,7%	1	Barney (1991)	191	10,0%
2	Grant (1996)	2400	10,9%	2	Wernerfelt (1984)	157	8,2%
3	Einsernhard (2000)	1847	8,4%	3	Nelson (1982)	150	7,8%
4	Peteraf (1993)	1720	7,8%	4	Teece (1997)	134	7,0%
5	Szulanski (1996)	1621	7,3%	5	Dierickx (1989)	134	7,0%
6	Amit (1993)	1369	6,2%	6	Penrose (1959)	114	5,9%
7	Leonaard-Barton (1992)	1337	6,0%	7	Cohen (1990)	112	5,8%
8	Levinthal (1993)	1166	5,3%	8	Peteraf (1993)	110	5,7%
9	Hamel (1991)	771	3,5%	9	Kogut (1992)	92	4,8%
10	Gulati (2000)	734	3,3%	10	Porter (1980)	84	4,4%

the omission of a middle name of an author can lead to significant numerical errors. To prevent distortions of this nature, the authors conducted a preliminary analysis to identify all possible failures in the metadata (author names, many typos etc) in order to obtain that the analysis as realistic as possible. Such changes were made manually in the metadata file. With the same purpose, the procedure was repeated in this work.
[3] In the summary tables, only the first author of which paper is mentioned.

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11	Mowery (1996)	718	3,2%	11	Barney (1986)	83	4,3%
12	Dyer (2000)	690	3,1%	12	Amit (1993)	74	3,9%
13	Gupta (2000)	690	3,1%	13	Williasom (1975)	67	3,5%
14	Henderson (1994)	595	2,7%	14	Williasom (1985)	63	3,3%
15	Kale (2000)	595	2,7%	15	Lippman (1982)	60	3,1%
16	Baum (2000)	498	2,3%	16	Henderson (1994)	60	3,1%
17	Winter (2003)	488	2,2%	17	Cyert (1963)	59	3,1%
18	Barney (1994)	470	2,1%	18	Teece (1986)	58	3,0%
19	Helfat (2003)	465	2,1%	19	Prahalad (1990)	58	3,0%
20	Simonin (1999)	464	2,1%	20	Eisenhardt (2000)	57	3,0%
	Total	22111	100,0%		Total	1917	100,0%

A visual analysis of this table 2 shows that there are significant differences. It is reasonable to assume that these are two different analyzes, motivated by the fact that the articles themselves have different allocations of citation that are used for these articles. One could say that the articles themselves serve as a bridge to other works, basing themselves in literature Economics of Organizations to propose models/studies/trials constituting the basis for many studies. For this reason, we found many similarities between the lists. Moreover, it is worth recalling that the fact of limiting a single period at the time of data collection, made many citation with high frequency not entered as an article analyzed the universe (remaining only as citation).

It is also important to highlight the importance of deepening the analysis in terms of citations, something that is not common in bibliometric studies performed (PRESTO, 2012). The image obtained when analyzing the citation level (such as second level analysis) differs significantly from the analysis of only the items published (considered the first level analysis).

Finally, observing the citation with high frequency, one can already notice a resemblance to the set of authors/works that are usually associated with the Theory of Resource Based View, from those that are considered precursors, as well as authors of the 1990s. Furthermore, it is important to note that these results are consistent with those raised in the introduction, when a list of the most cited authors in articles dealing with strategy itself.

Identification of High Church and Low Church

The first theoretical proposition of this work specifically addresses the existence of the High Church and Low Church. The assumption behind that is the fact that there is two chains which are different approaches. To empirically test the hypothesis, the generation of clusters at CiteSpace is used. As already detailed above, since the intensity of the link that connects two cited references, it is determined whether the existence of the cluster. The analysis from cluster is consistent with the theoretical proposition because two references are strongly connected (and thus belonged to the same cluster) when, and only when, a large number of works bring together these two references. The assumption that is subsidizing this logic is that works mostly cite works that deal with the same theme, so cite papers that have something intrinsic that is common to both.

The cluster generation is a particular feature of CiteSpace compared to other known bibliometric analysis software. However, as we intend to examine only the core of the Theory

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of Resource Based View, limited only to the 25 most cited papers. This first analysis excluded the time variable (worked only with a slice of time). The generation of the network resulted in the citation image of Figure 3.
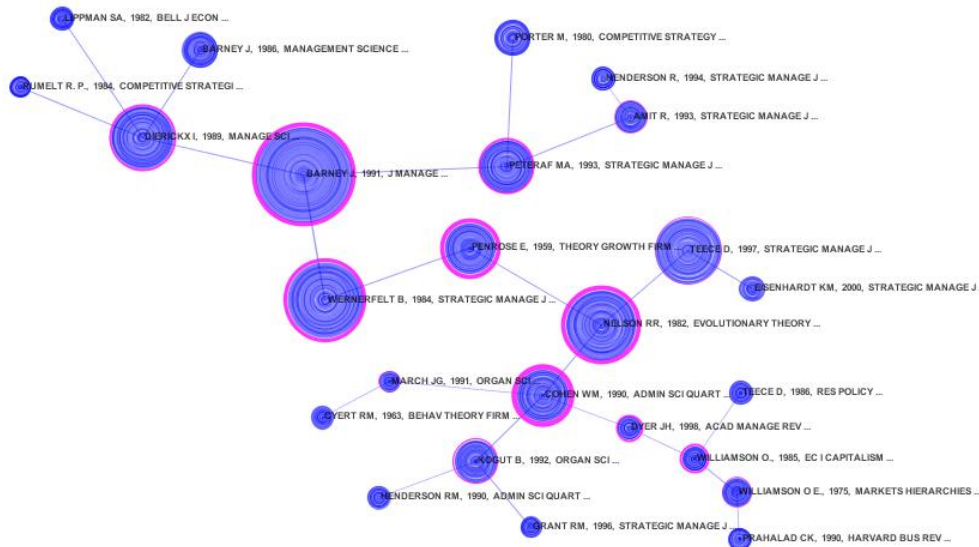

Figure 2 – Citation network for the 25 citation with highest frequency.

Visually it is possible to note the separation of the works that are associated to High Church and Low Church. In the network above, the works that are commonly associated with the High Church are at the top of the image. It can be observed in this group Peteraf (1993), Dierickx (1989), Barney (1991). While at the bottom, one stands out works associated with the Low Church. It is worth recalling here that the figures represented only the first author of each work is highlighted. Note that the graphs CiteSpace not all links between the references, only those that exceed a certain limit, in terms of intensity .

In Figure 2, it is possible to note that some references with an outer circle in pink. These references are identified by the software (through algorithms that calculate parameters such as the centrality) as the Hub Points. Again, a priori empirical results are aligned with what is discussed in the literature. Notes the importance of the work of Penrose (1959), Wernerfelt (1984), Barney (1991) and Cohen (1990). Here, it is noteworthy that the work of Penrose (1959) is actually a precursor to RBV if it considers the definition of a Hub Point. This is not an attempt to put this work as a precursor of RBV, as suggested by Foss and Stieglitz (2010). Although these authors establish very clearly that it is necessary to consider other important influences for RBV, one can not deny from the light of empirical evidence the seminal importance of Penrose (1959) .

Although visual observation already allow to draw conclusions about the theoretical propositions of the first set, the cluster was generated through CiteSpace. At first, setting the cut-off limit in standard system level. With it, two clusters are generated, as illustrated in Figure 3.

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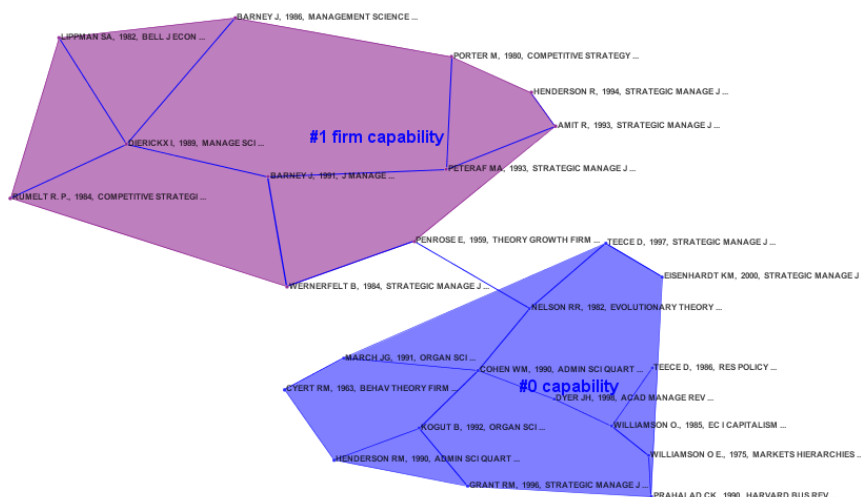Federal University)

Figure 3 – Clusters generation for the 25 highest frequency.

The generation of the clusters shows a strong evidence for the theoretical proposition. There is clearly the formation of two groups, where works that belong to each cluster are consistent with the definition proposed in the literature. Besides, it is important to note that the citation that serves as Pivot Point in this configuration is precisely the work of Penrose (1959), work that brings principles that would apply to both streams of RBV. In fact the work of Penrose (1959) was the group associated with the High Church, something that clashes predicted in the literature that associates this work commonly the Low Church. However, it should be noted again that the positioning work on citation network: it belongs to the boundary, it is a Pivot Point. Thus, it should be interpreted as a work of paradigm shifts, much transformation that characterizes the group to which it belongs. In Table 3 one can observe the members of each cluster.

Table 3 – Members of each cluster.

Cluster 0	Cluster 1
Nelson (1982)	Penrose (1959)
Teece (1997)	Barney (1991)
Cohen (1990)	Wernerfelt (1984)
Kogut (1992)	Dierickx (1989)
Williamsom (1975)	Peteraf (1993)
Williamsom (1985)	Porter (1980)
Cyert (1963)	Barney (1986)
Teece (1986)	Amit (1993)
Prahalad (1990)	Lippman (1982)
Eisenhardt (2000)	Henderson (1994)
March (1991)	Rumelt (1984)
Henderson (1990)	
Dyer (1998)	
Grant (1996)	

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The name assigned by the software is not illuminating, unlike, can even cause confusion, to associate the term capability for the group that has characteristics of High Church. However, the analysis of the terms found from the similarity analysis of the different content, one can see that the software was not able to find a consistent set of terms that reflect the nature of each cluster. This is a limitation of this research.

To overcome the above problem, the works that make up each group were revisited and consistency of approach, widely discussed during the theoretical study, can be confirmed for a significant part of these works. In fact, many works have been briefly discussed above. However, specific cases arose. These are mainly the association of Williamson (1975, 1985) in the grouping would be associated with Low Church, since this would be mainly associated with Theory of Transaction Cost Economics. However, it is worth recalling here that Williamson (1999) discusses the concept of Dynamic Capabilites, as well Foss points and Stieglitz (2010). Therefore, this result does not invalidate conclusions about the possible existence of two currents in VBR.

Convergence between High Church and Low Church

Analyzing the second set of theoretical propositions, those that deal with the existence of a convergence toward the center between the High Church and Low Church, one conducts a temporal analysis of citations. It means to see how each one of the 25 most frequent citations were employed during the past three decades. This makes it possible to identify if there is a behavior that leads to the conclusion that the centerlines of High Church and Low Church opened space for approaches that drive to the center.

This evolution is constructed as follows. For each of the 25 most important citation, one rises how they were cited over the years counting, for each year, the number of articles that cited the relevant citation. As the first article of the universe analyzed dates from 1983, is from that year that the survey is conducted. It give us effective overview of how each of RBV stream has evolved over the past three decades.

The results of this survey are summarized through Figure 4. It is important to note that in this first moment, the graph was constructed with absolute values, i.e., the number of times each citation was actually cited. From the visual analysis of the graph in Figure 4, it is not possible to infer that there is some unusual behavior, suggesting that certain approaches, among the most relevant show some change. It is not possible to observe, for example, that classical theories of pure RBV are no longer cited in recent years. Thus, it is not possible to conclude that there is a clear convergence theories. If there was a movement as characterized in the literature references may be considered a classic, it will loose space for others, that defend the emergency of central theories. This would result in a reduction in the number of citations of these works and the increases of others. It is noteworthy that any works that are critical to pre-existing works , such as may be the case, do not represent a critical mass decisive, because if they cites works to criticize them, it is natural to assume that they cite also work with new approaches, something not observed in this study.

In order to deepen this analysis, one arose in the last 14 years which were the most relevant citations, considering the number of citations, dividing these 14 years in three blocks, 2000-2004, 2005-2009 and finally 2010 to 2013. The results of this comparison are shown in Table 4. Looking the data, it is not possible to conclude that there was a significant change in number of authors over the last 14 years, remaining the main authors introduced throughout this work. There are few authors who have not yet been discussed. However, none that can

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hypothesize the emergence of a new line of convergence toward the center between the two currents discussed, High Church and Low Church.

Table 4 – Evolution of citation along the last 14 years.

N.	Document cited	2000 – 2004		2005 - 2009		2010 – 2013	
		Qty.	%	Qty.	%	Qty.	%
1	Barney (1991)	63	9,6%	44	9,3%	39	8,2%
2	Nelson (1982)	50	7,6%	31	6,5%	29	6,1%
3	Teece (1997)	51	7,8%	45	9,5%	29	6,1%
4	Wernerfelt (1984)	55	8,4%	30	6,3%	28	5,9%
5	Eisendhardt (2000)	13	2,0%	19	4,0%	25	5,3%
6	Penrose (1959)	32	4,9%	29	6,1%	24	5,0%
6	Dierickx (1989)	45	6,9%	28	5,9%	23	4,8%
7	Cohen (1990)	37	5,7%	34	7,2%	22	4,6%
8	Helfat (2003)	0	0,0%	0	0,0%	21	4,4%
9	Kogut (1992)	30	4,6%	29	6,1%	20	4,2%
10	Peteraf (1993)	42	6,4%	24	5,1%	19	4,0%
11	Cyert (1963)	19	2,9%	12	2,5%	17	3,6%
12	Amit (1993)	24	3,7%	13	2,7%	16	3,4%
13	March (1991)	15	2,3%	19	4,0%	14	2,9%
14	Grant (1996)	15	2,3%	18	3,8%	14	2,9%
15	Levinthal (1993)	15	2,3%	11	2,3%	14	2,9%
16	Helfat (2007)	0	0,0%	0	0,0%	13	2,7%
17	Helfat (1997)	12	1,8%	0	0,0%	13	2,7%
18	Teece (1986)	15	2,3%	19	4,0%	13	2,7%
19	Levit (1988)	13	2,0%	11	2,3%	12	2,5%
20	Porter (1980)	28	4,3%	15	3,2%	12	2,5%
21	Dyer (1998)	24	3,7%	16	3,4%	12	2,5%
22	Zollo (2002)	0	0,0%	0	0,0%	12	2,5%
23	Henderson (1994)	26	4,0%	12	2,5%	12	2,5%
24	Barney (1986)	30	4,6%	16	3,4%	12	2,5%
25	Kale (2000)	0	0,0%	0	0,0%	11	2,3%
	Total	**654**	**100,0%**	**475**	**100,0%**	**476**	**100,0%**

In Figure 5, the data are represented in relative basis. The goal is to be able to just make a comparison clearer. The conclusion therefore is also sharper. No trends of declining the number of works with more traditional approaches and growth of works that could be considered as work that go towards the middle. Despite the limitations of bibliometric analysis employed here and possible experimental errors, the results are consistent in this sense.

Adopting the clusters formulation obtained above, it is possible to compare the results of each group, rather than separate results for each work. The result is shown by Figure 6. One can observe a slight reduction in the number of citations of the work of the two currents.

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These works constitute the vast majority of the classics of each strand (those that are traditionally found in literary discussion about RBV). Therefore, this reduction could be interpreted as a possible indicator that the theories would be giving way to distant theories converge . However , analyzing Figure 6 in light of Figure 1, which traced the progress of research in all RBV, this statement is erroneous and shows misplaced. There was an overall reduction of academic production on the theme, so it is natural that this reduction be reflected in the number of citations to each of the areas identified, without implying that the assertion that such strands lose relevance.
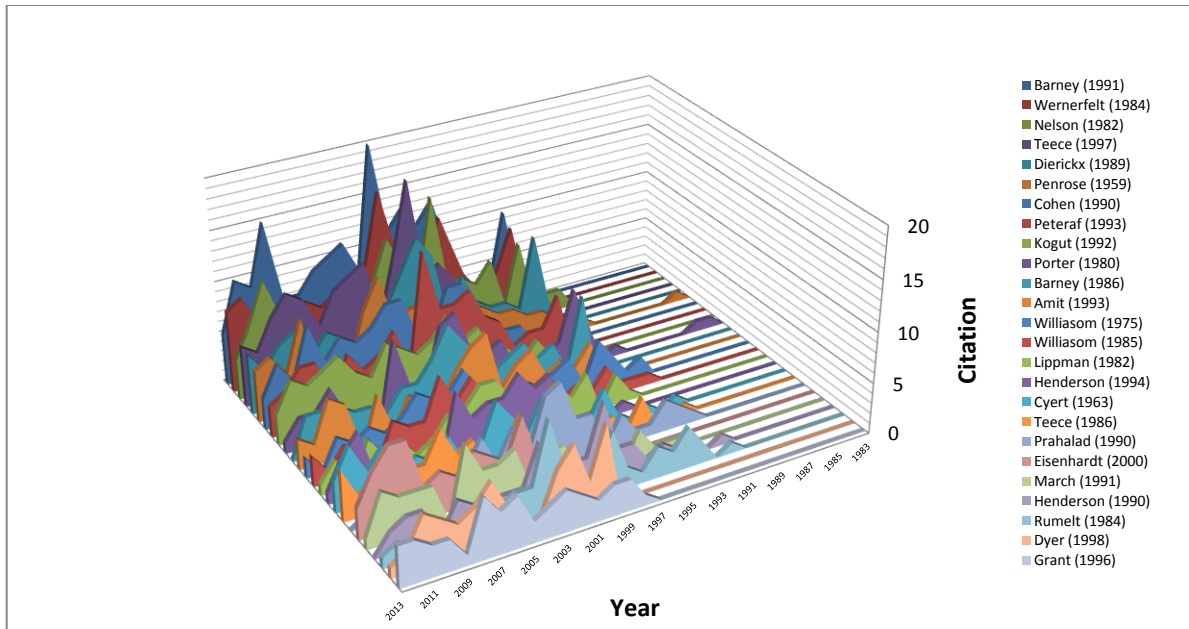
Figure 4 – Evolution of citation over the time.
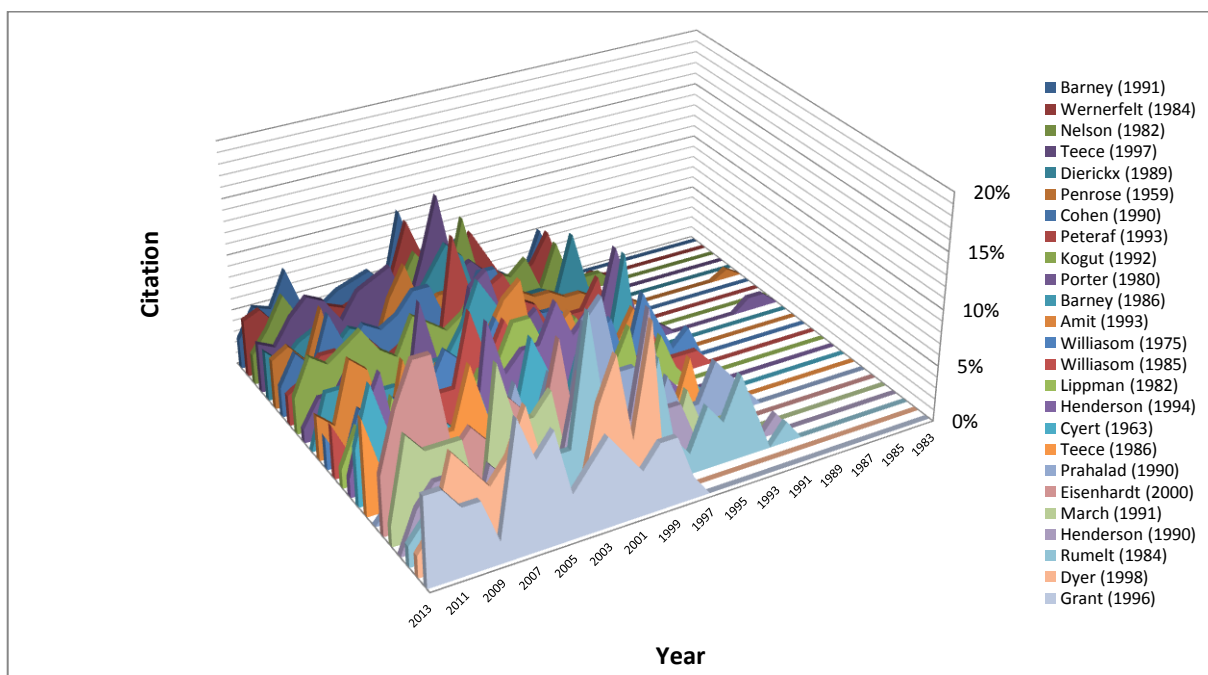
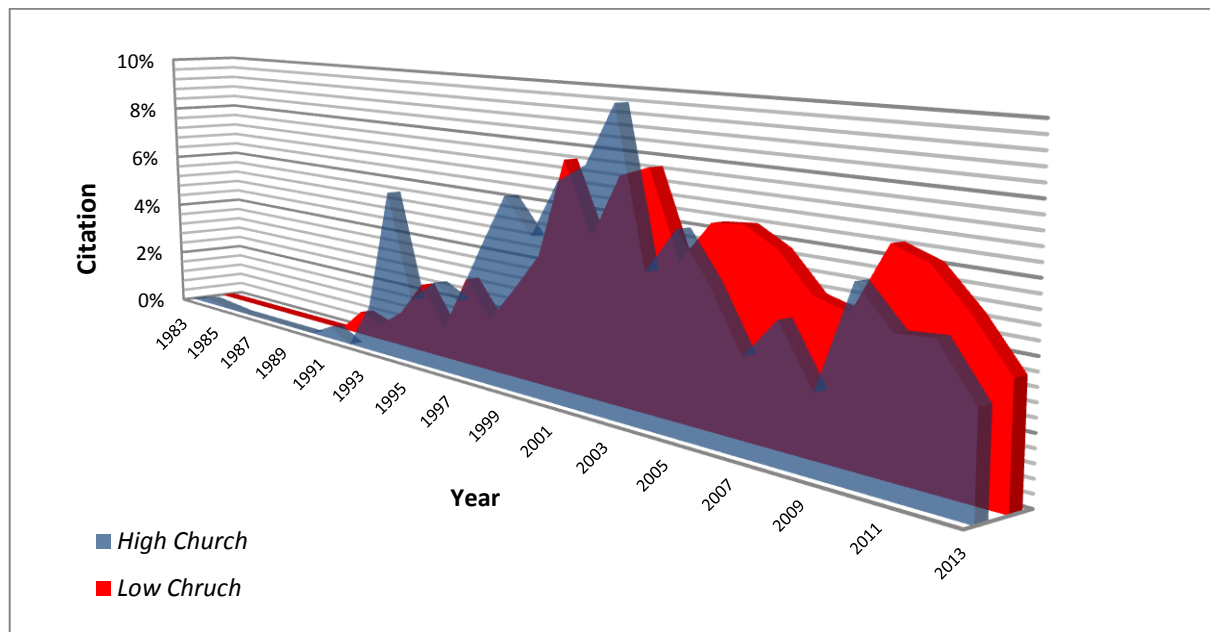Figure 5 – Relative Evolution of citation over the time.

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Figure 6 – Relative evolution of citation grouped over the time.

4. Conclusion

Regarding the proposed research questions and their theoretical propositions, It was possible to identify empirically the existence of two streams. The empirical evidence collected are robust and consistent in this sense. Cluster analysis made possible thanks to the analysis software bibliometric CiteSpace. The degree of similarity in terms of the content that is handled by each group, as well as the composition (in the direction of the main exponents theoretical) is relatively high, confirming observation from Foss and Stieglitz (2010), inspired form Gavetti and Levinthal (2004)'s ideas

Moreover, despite the many attempts, no sufficient empirical evidence to confirm the progress of the molds under RBV defined by these authors. The data collected indicate that this theory, relatively recent in the Economics of Organizations, is much more in a phase of exploration than changing direction, convergence toward a unifying center of the two streams identified. It is reasonable to assume that there are twists between two streams , something quite natural , since one can not ignore the fact that both belong to a single theory, nevertheless, this entanglement has given way to a more intense convergence.

Yet, like all scientific research, it also has its limitations. A number of considerations (assumptions, hypotheses) was adopted at the methodological foundation. A set, equally significant, choices had to be made in order the feasibility of this research. Presoto, Thurler and Souza (2013) point out emphatically that small changes can lead to significant distortions in the results. A bibliometric analysis, for leading with a significant amount of data (in this research, for example, with a universe of 420 articles, which together led to the analysis of more than 8,000 different citation) is not able to identify simple errors such as the inclusion of an end to over the author's name, including a middle name more or less, etc. This makes the results are sensitive to the quality of the data.

In relation to the subject matter dealt with in this work, the words of Arend (2006), highlighted by Foss and Stieglitz (2010) speak for themselves : " There are not statisfatory empirical tests of the RBV [...] ." Although not answer all the questions raised by Arend

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(2006), in contrast, focus on other things, this work aimed to bring the discussion of the evolution of the RBV for the empirical field.

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