What has been study about corporate universities?

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Objetivo do estudo

O objetivo deste estudo de análise bibliométrica é trazer resultados significativos ao conhecimento e à ciência da UC, não apenas por elucidar o que vem sendo estudado no campo da pesquisa sobre o assunto, mas por provocar propostas para novas pesquisas.

Relevância/originalidade

Trabalhos com métodos bibliométricos avançados como este permitem aos autores delinear as fronteiras de pesquisa de um determinado campo, buscando responder às percepções que possam surgir sobre a estrutura de pesquisa desse campo, as redes de conexões dessas pesquisas e pesquisadores e os temas que emergem desses trabalhos com mais frequência (Ramos-Rodríguez, & Ruíz-Navarro, 2004; Vogel, & Güttel, 2013).

Metodologia/abordagem

Realizamos um estudo de técnicas de análise bibliométrica de citação, cocitação e acoplamento bibliográfico. O objetivo de um estudo de análise bibliométrica é que, através da análise estatística, possamos coletar grandes quantidades de dados bibliográficos (referentes a artigos que abordam o tema deste trabalho) que também tenham maior complexidade do que outras análises quantitativas exclusivas (Vogel, & Güttel, 2013; Zupic e ?ater, 2015).

Principais resultados

Foram encontrados 5 fatores na análise de cocitação e 4 fatores no acoplamento bibliográfico para garantir os resultados desta pesquisa.

Contribuições teóricas/metodológicas

Trabalhos com métodos bibliométricos avançados como este permitem aos autores delinear as fronteiras de pesquisa de um determinado campo, buscando responder às percepções que possam surgir sobre a estrutura de pesquisa desse campo, as redes de conexões dessas pesquisas e pesquisadores e os temas que emergem desses trabalhos com mais frequência (Ramos-Rodríguez, & Ruíz-Navarro, 2004; Vogel, & Güttel, 2013).

Contribuições sociais/para a gestão

Essa pesquisa sobre UC vem crescendo novamente nos últimos anos e, podemos dizer, dadas as conclusões deste artigo, que há muito a ser estudado sobre o papel estratégico da UC nos negócios das empresas em que atua.

Palavras-chave: Corporate University, Bibliometry, Cocitation, Coauthorship, Bibliographic Coupling

What has been studied about corporate universities?

Study purpose

The objective of this bibliometric analysis study is to bring significant results to UC knowledge and science, not only for elucidating what has been studied in the field of research on the subject, but for provoking proposals for new research.

Relevance / originality

Works with advanced bibliometric methods such as this allow the authors to delineate the research frontiers of a given field, seeking to respond to the perceptions that may arise about the research structure of this field, the networks of connections of these researches and researchers and the themes that emerge of these works more frequently (Ramos-Rodríguez, & Ruíz-Navarro, 2004; Vogel, & Güttel, 2013).

Methodology / approach

We performed a study of bibliometric analysis techniques of citation, cocitation and bibliographic coupling. The purpose of a bibliometric analysis study is that, through statistical analysis, we can collect large amounts of bibliographic data (referring to articles that cover the theme of this work) that also have greater complexity than other exclusive quantitative analyzes (Vogel, & Güttel , 2013; Zupic, & ?ater, 2015).

Main results

We found 5 factors in cocitation analysis and 4 factors in bibliographic coupling to ensure results from this research.

Theoretical / methodological contributions

Works with advanced bibliometric methods such as this allow the authors to delineate the research frontiers of a given field, seeking to respond to the perceptions that may arise about the research structure of this field, the networks of connections of these researches and researchers and the themes that emerge of these works more frequently (Ramos-Rodríguez, & Ruíz-Navarro, 2004; Vogel, & Güttel, 2013).

Social / management contributions

This research on CU has been growing again in recent years and we can say, given the findings in this paper, that there is much to study about the strategic role of CU in the business of the companies in which it operates.

Keywords: Corporate University, Bibliometry, Cocitation, Coauthorship, Bibliographic Coupling

1. INTRODUCTION

Corporate Universities (CU) are a source of creativity, innovation, human development and support for strategic business planning (Rademakers, 2005) and business development (Shaw, 2005). For Allen (2002, p. 9), a corporate university is "an educational entity that is a strategic tool designed to help its parent organization achieve its mission by carrying out activities that cultivate individual and organizational learning, knowledge and wisdom". In Brazil, in particular, Castro & Eboli (2013) point out that UCs have an even greater role in training employees of a company that is, in addition to developing new skills for this audience, filling gaps left by the country's weak educational system. In this paper we intend to present what has been studied about CU around the world and to discover relevant gaps that may arise from the findings of this work.

We performed a study of bibliometric analysis techniques of citation, cocitation and bibliographic coupling. The purpose of a bibliometric analysis study is that, through statistical analysis, we can collect large amounts of bibliographic data (referring to articles that cover the theme of this work) that also have greater complexity than other exclusive quantitative analyzes (Vogel, & Güttel , 2013; Zupic, & Čater, 2015). Works with advanced bibliometric methods such as this allow the authors to delineate the research frontiers of a given field, seeking to respond to the perceptions that may arise about the research structure of this field, the networks of connections of these researches and researchers and the themes that emerge. of these works more frequently (Ramos-Rodríguez, & Ruíz-Navarro, 2004; Vogel, & Güttel, 2013). At this point, we understand that it is important to elucidate the scarcity of methodological rigor when it comes to bibliographic reviews that often involve the subjectivity of the authors when choosing the base of articles that will serve for the analysis of the theme and construction of the theoretical framework of a work (Paré, Trudel, Jaana, & Kitsiou, 2015). Thus, the methodology used in bibliometric studies reduces this problem by using more objective criteria in the literature review process (Zupic, & Čater, 2015; Vogel & Güttel, 2013).

In the analysis of citations, we sought to present a view of activity indicators, ie the impact force or research influence of a work. We have noted the number of times a paper is cited by other researchers in their research. We assumed that researchers seek to cite articles of greater relevance to their own research, which leads me to consider that the most cited authors observed in this citation analysis tend to have the most influence on the topic, according to Culnan. Reilly & Chatman (1990). In the analysis of cocitation, we observed the relationship indicators in the volume of references to a given research tracking the number of links and interactions between different researchers and different research fields (Ramos-Rodríguez & Ruiz-Navarro, 2004). What this technique seeks is to measure the frequency in which a pair of articles are cited together in the same sample (McCain, 1990) and how this cohort can lead to a representation of the conceptual foundations of a field (Zupic , & Čater, 2015) and the description of the content and evolution of research on the proposed theme (Ferreira, Pinto & Serra, 2014). Thus, it is possible to obtain a complete description of a research and its development. In the technique of bibliographic coupling, we present the bibliographic reference overlay, whose objective was to measure the frequency in which two works of the same sample end up citing in common in at least one reference (Kessler, 1963; Zupic, & Čater, 2015) and the representation of the research trends of this analyzed sample (Vogel, & Güttel, 2013).

The bibliometric analysis proposed in this paper allows us to start from the premise that the research that emerges in the bibliographic references using this technique is a strong

indication of relevant works due to their influence. However, although it is possible to observe the most influential works, this research brings the result of identification and analysis of these works with their relationship links with each other. This relationship is the main contribution of a bibliometric research, specifically in the case of CU: pointing out the changes that have emerged in research on the topic of CU and its impacts on business performance in recent years. We believe that this work brings significant results to the knowledge and science of CU, not only for elucidating what has been studied in the field of research on the subject, but for provoking proposals for new research.

We present the work in five sections, being (1) this introduction; (2) a literature review; (3) the methodology; (4) the presentation of the results and (5) the discussion from these findings with data from the work that were used to explore the research.

2. DEFINING CORPORATE UNIVERSITIES

With regard to companies and the applicability of a CU, there are strands that see them as a conventional training department where the scope of operation of the CU is traditionally focused on the development of organizational, collective and individual skills or expanded when looking at nature. proactive training (Abel and Li, 2012). Many companies make use of training and development (T&D) departments focused on delivering guidance and technical content, usually with a reaction assessment based on what was absorbed in those training moments. CUs, however, are premised on a capacity-building proposal at all levels of the business for all employees at any scale, always guided by objective goals and long-term strategic plans (Wang, Li, Qiao & Sun, 2010).

CU is one of the key drivers of corporate change and organizational change, in addition to employee development (Morin & Renaud, 2004) and ends up being a company-driven initiative capable of integrating personal, collective and organizational development processes in support of a strategic vision and enables the corporation to gain competitive advantage through better workforce performance and productivity (Meister, 2006; Sham, 2007). Some studies note that CU is a source of knowledge and superior competencies of employees that contribute to competitive advantage, and may influence the performance of their strategic results and financial performance for companies (Murray & Efendioglu, 2003) and it can play an important role in human knowledge development and dissemination to improve learning and individual and organizational performance (Anderson, V. 2009; Swanson & Holton, 2001).

The number of UCs has grown considerably, coupled with growing employee learning investments that have been undeniable over the past two decades (Aguinis & Kraiger, 2009; Friga, Bettis and Sullivan, 2003; Jarvis, 2001; Montesino, 2002; Paradise, 2009). In the work by McAteer & Pino (2011), the authors show a staggering growth in the number of CUs in the US, for example, with an increase of over 100% between the 1990s - when there were about 4,000 UCs in that country - and 2010. In Brazil, this growth has also been quite considerable, although there are no absolute numbers to verify the amount of CU in Brazilian companies.

3. RESEARCH METHOD AND TECHNIQUES

In proposing this work of bibliometric analysis of the field of study on Corporate Universities, we chose to consider exclusively scientific articles for the construction of research. This choice is common in bibliometric works and its justification can be found in many works because this criterion presents greater methodological rigor when it comes to scientific knowledge. We assume that scientific articles go through critical reviews by fellow researchers

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at congresses and scientific journals, for example, which gives me confidence to assume that the scientific articles used in this paper have been approved by reviewers before being accepted for publication and, consequently, published. and made available on scientific bases like the one we used in this research, Scopus.

We have tried to understand what has been researched about the phenomenon of the emergence and growth of CU around the world and how these UCs have been relevant to business results and also how this phenomenon that impacts the real world. However, we have not found much work with this proposal, nor what has been researched about the relationship between CU and its relationship with business performance. Thus, in order to understand the emergence of this phenomenon and its evolution in recent years, it was necessary to study what has been researched on the subject so that it was possible to understand and verify the trends of studies (co-habitation) and future studies (bibliographic coupling) (Ferreira, Pinto & Serra, 2014).

This study was carried out in three separate steps. In the first, we conducted the Impact Indicators stage, a survey of scientific articles for the bibliographic study in the Scopus database (www.scopus.org) with temporal cut-out in the last 30 years of publication (between 1989 and 2018), seeking only articles in English. We opted for the Scopus database because it has a larger number of journals indexed on the subject of CU compared to other databases, such as Web of Knowledge. In the second stage, we conducted the Relationship Indicators stage, that is, the cocitation analysis stage to measure the frequency of joint citations of the same article in the same sample. In the third stage, of Publishing Activity Indicators, we worked on the bibliographic coupling presenting the frequency in which two works are cited by the same reference.

4. Data Collection and Sample

The initial sample collected from this research was 278 articles. Of these works, 18 were discarded for not presenting basic data such as identification of authors, journals and year of publication, for example. Thus, the final sample we used in this study was 260 articles.

Table 1
Most Relevant Journals and Sample

Journal	H Index[b]	ISSN[c]	Sample[d]
Journal of Workplace Learning	40	1366-5626	45
Industrial and Commercial Training	25	0019-7858	12
Industry and Higher Education	19	0950-4222	9
Journal of Management Development	47	0262-1711	8
Career Development International	48	1362-0436	7
T and D	23	1535-7740	7
Performance Improvement Quarterly	14	0898-5952	6
Human Resource Development Quarterly	52	1532-1096	5
Journal of Knowledge Management	90	1367-3270	5
Other 96 journals	-	-	156
Total of Initial Articles			**278**
Articles with no author ID			18
Total of Articlesin this research			**260**

Note. (a) main sample journals; (b) H Index of the journal; (c) ISSN of the journal; (d) number of journal articles

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In this sample it was observed that Bradford's Law is easily explained, since few journals concentrate a large part of the relevant published articles within the researched area. Of the journals used in this work, five of them stand out in the evolution of the number of publications of articles over the years used as a reference for temporal research. Most notably, the Journal of Workplace Learning experienced a staggering growth between 1999 and 2018 (Figure 2), the final year of this research's cut. Alone, this journal represents the same number of publications as the next five major research journals. Of the total sample of 260 articles used in this research, 45 of them came from this journal, or 17.7% of the final sample. However, there is a relevant point to note that, although this growth of the journal occurred from the late 1990s, where Raelin's (1998) article was published, most of the articles in this sample that were published In this journal, they are from the same author (Richard Dealtry) who also has a high number of citations from other authors (63 citations in the sample of this research).

Although there was an increase in publications on CU in the second decade of the sample of this research followed by a decline in the third decade, publications never exceeded 20 articles per year and began to 'move sideways' in last decade. And although in 2018, the last year of this sample's time frame, there is a strong increase compared to previous years, there is an equal volume of publications with 2004, that is, 14 years later, still published the same number of articles on CU. The only article published in the initial year of this research (Davis, Bagozzi, Warshaw, 1989) was not responsible for being a watershed in the other publications in this sample, as it does not appear in any citation in the years following its publication.

5. Analysis Procedures

In this work we used, initially, the Bibexcel software to identify the most representative works of the selected sample in the journal base that was used to compose this work. Bibexcel was responsible for generating the citation matrices and also the co-occurrence matrices: cocitation and pairing. Using the R psych package, it was possible to analyze the main factors of both the cocitation matrix and the bibliographic coupling. For both cocitation and bibliographic coupling matrices we used a principal factor analysis (PCA) with varimax rotation. The varimax rotation aims to maximize the shared variation between items, thus reaching the maximum load potential that each item carries in its respective factor. Varimax rotation is an orthogonal rotation in the sense that it does not allow factors (or factors) to correlate with each other (the latter being the proposition of oblique rotations).

One of the criteria of the PCA is the amount of factors to be extracted. In a PCA, the author is expected to know how many factors he or she wants to extract or to indicate a criteria determining the number of factors. Although there are several criteria in the literature (DeVellis, 2017) most of them are arbitrary and difficult to justify. However, there is a criterion for deciding the number of factors that contrasts the data with a random representation of the data. This approach is called parallel analysis (PA) (Hayton, JC, Allen, DG, & Scarpello, V. (2004, April). Factor Retention Decisions in Exploratory Factor Analysis: A Tutorial on Parallel Analysis. https://doi.org/10.1177/1094428104263675). PA generates n random matrices of the same dimensions (columns x rows) as the matrix of a dataset and calculates the eigenvalues (EVs) for each factor / factor of these n matrices. The comparison is made when BP uses the average of each of the factors / factors of the n random matrices and compares with the actual value of EVs of the data. When the real value of EVs becomes smaller than the computed random values of the average of n matrices with the same dimensions as the data under analysis, it means that the EV of such factors has less explanatory power than mere random data.

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Therefore when this inversion occurs, there is also a definition of how many factors / factors should be extracted. This simulation of random data with the same dimensions as the real data and seeing how much variance the EVs explain is the BP guideline. For all PCAs conducted in this study, we used the BP with 10,000 randomized matrices and compared them with both the citation and bibliographic matching matrix to determine the amount of factor numbers to be extracted.

Co-occurrence matrices (citation and bibliographic matching) were also used to generate social networks when approached as adjacency matrices. The proposition of using co-occurrence matrices as adjacency matrices for social network analysis is widely used in bibliometric works such as Ramos-Rodríguez, & Ruíz-Navarro (2004) and Lin, & Cheng (2010). In social network analysis, the main measures are density and cohesion. Density refers to the distinction of a subgroup within the entire network; It is therefore an attribute of a partial network. Density is calculated as the ratio of links made to all possible links within a subgroup. A maximum density is obtained when all nodes in a subgroup are linked to all other nodes in that group. As a bibliometric indicator, density reflects the extent to which various streams within a research subfield follow their agendas on a common basis (Vogel & Güttel, 2012).

A related network measure is cohesion, which is also an attribute of a partial network. Cohesion measures relate the density of a subgroup to its interconnectivity with other groups. A subgroup is highly cohesive if its members are densely interconnected but only weakly linked to non-members of the subgroup. In bibliometric applications, cohesion indicates the extent to which a research subfield follows an agenda independent of other discourses of other subfields (Vogel & Güttel, 2012). The use of principal factor analysis in conjunction with social network analysis is a robust way to analyze bibliometric data, as it enables the researcher to relate findings from one approach to another (McCain, KW (1990). A technical overview Journal of the American Society for Information Science, 41 (6), 433-443, doi: 10.1002 / (SICI) 1097-4571 (199009) 41: 6433 :: AID-ASI113.0.CO; -Q).

6. RESULTS

The results section is comprised of citation analysis, cocitation analysis, cocitation social network analysis, bibliographic coupling analysis, and bibliographic coupling social network analysis. Bibliographic cocitation and coupling analyzes are PCAs of the square and symmetric co-occurrence matrices extracted from Bibexcel and the number of factors to be extracted were determined by BP.

6.1 Citation Analysis

Using Bibexcel, we found the most cited works and their respective authors (complete reference), in addition to the percentage representativeness of each article in relation to the total sample. This view presents the frequency with which the works of each featured author were cited in other works (Vogel & Güttel, 2013). We highlight 41 works with more than 5 (five) citations. This number is not random. We drew on Lotka's bibliometrics law, which points out that about 5% of articles in a sample would already be a field representation (Nath & Jackson, 1991). Thus, we present in Table 4 the 41 works that total 346 citations if summed or, more than 5% of the entire base of citations used in this work which is 5,586 citations in total.

The main highlight of the most cited works sample is the book by Meister (1998) that deals with expressive themes to conceptualize CU in the other analyzed works of this sample. Among the main themes that the author addresses, we highlight her vision on the expansion of

organizational learning from the increment of CU in companies, besides presenting the main foundations of what she understands to be the best CU model. The author also highlights some topics such as CU programs, their curricula and the transformation of CU into learning laboratories.

Given the representativeness of the number of citations of the sample, we assume that works and authors most cited tend to contribute more to a theme will be more cited in other works on that theme as suggested by McCain (1990) and Ghio, Guerini, Lehmann, & Rossi-Lamastra (2014). From that point, we started to build the database to perform the statistical steps with which we performed this work and we present the methodology we used in the next paragraphs.

6.2 Cocitation Analysis (Cocitation - Coc)

In the following, we will present the analysis of citation of this work pointing out the main foundations of each of the factors found in order to highlight the main characteristics of the works that compose the factors of this citation and explore their points and counterpoints within the factors analyzed (if any). For the elaboration of the cocitation matrix we used documents that had at least 4 citations, totaling a total of 52 documents. However, 3 were removed because they are documents referenced by methodological issues and not relevant to the theoretical content of the analysis: Patton (1990), Nunnally (1978) and Eisenhardt (1989). Totaling a sample of 49 cocited documents. In Table 4, we tried to group more objectively and prominently the factors of cocitation. We present the factors in the form of the first author and year of work and also the respective loads of these works related to each of the factors. In this phase of cocitation, in PCA 49 articles appear to compose the five distinct factors to which we assign denominations that could facilitate the understanding of what each factor is about. For better reading, we highlight these names in this text rather than including them in table 4.

Table 4
Cocitation Network Legend - Analysis of Key Factors and Network Metrics

Factor	Articles	Density	Cohesion	Total	% Variance Explained	% Variance Acumulated	KMO	Bartlett
CC1	18			19,05	33,3	22,4		
CC2	16			4,179	27,9	41,2		
CC3	6			3,638	14,2	50,8		
CC4	4			3,215	13,0	59,5		
CC5	5			3,014	11,6	67,3		
Total	49	0,5280612	4				>0,5	$p<0,05$

The 5 factors of cocitation as a whole explain 67.3% of the variance in the data, and the first two factors are more prominent due to the amount of studies that integrate them. This phase of the research explores what has been studied about the theme of CU from works that form the intellectual basis of this theme. The purpose of this phase is to build a foundation that could help in understanding the field and allow a better understanding of the subfields to explore the research (Vogel & Güttel, 2013). The purpose of this stage was not to exhaust all knowledge about the field studied.

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Table 5

Main Factor Analysis – Cocitation

Article	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
CC63	0,860	0,103	0,013	-0,122	-0,003
CC3	0,843	0,104	-0,003	-0,107	0,111
CC14	0,814	-0,062	-0,142	0,069	-0,051
CC32	0,793	0,074	-0,197	-0,234	0,153
CC46	0,731	-0,012	-0,306	0,079	0,145
CC60	0,729	0,211	0,235	-0,020	-0,142
CC59	0,725	0,078	0,300	0,236	-0,067
CC40	0,721	0,412	0,201	-0,116	-0,066
CC67	0,689	0,536	0,129	-0,019	-0,061
CC21	0,667	0,141	0,243	0,208	-0,035
CC37	0,638	0,452	0,312	0,177	-0,116
CC71	0,631	0,417	0,322	0,272	-0,046
CC42	0,609	-0,029	-0,009	0,023	0,608
CC39	0,607	0,382	0,363	0,280	-0,110
CC12	0,534	0,352	0,384	0,221	-0,046
CC65	0,527	0,139	0,241	-0,498	-0,208
CC61	0,520	0,034	0,369	0,438	-0,197
CC13	0,508	0,409	-0,051	-0,090	0,080
CC58	0,505	0,486	-0,112	-0,139	0,132
CC48	0,494	0,384	0,061	-0,176	0,058
CC10	0,001	0,901	0,037	-0,043	0,030
CC11	0,161	0,888	0,062	-0,032	-0,115
CC1	0,156	0,818	0,151	0,053	-0,047
CC22	-0,020	0,808	0,007	-0,052	0,379
CC50	0,247	0,761	0,358	0,246	0,014
CC19	0,385	0,694	-0,090	0,262	-0,107
CC6	0,315	0,680	0,011	0,338	-0,164
CC68	0,601	0,669	-0,012	-0,048	0,049
CC51	-0,270	0,651	-0,138	-0,029	0,077
CC56	0,483	0,650	0,164	-0,067	-0,075
CC33	0,192	0,624	0,379	0,316	0,255
CC25	0,503	0,592	0,367	0,202	-0,122
CC70	0,243	0,540	0,309	-0,270	0,079
CC38	0,517	0,530	0,373	0,217	-0,144
CC7	0,274	0,505	0,418	0,212	0,252
CC4	0,054	0,092	-0,808	0,070	0,141
CC69	0,009	-0,079	-0,767	0,206	-0,044
CC43	-0,012	-0,129	-0,678	0,187	-0,068
CC47	-0,067	-0,168	-0,629	0,194	-0,126
CC66	0,267	0,102	0,523	0,489	0,238
CC35	0,086	-0,014	-0,035	-0,787	-0,050
CC62	0,041	-0,050	0,127	-0,776	-0,003
CC64	-0,007	-0,036	0,179	-0,746	-0,092
CC17	-0,052	-0,090	0,176	-0,733	-0,127
CC20	-0,193	0,004	0,143	0,116	0,844
CC45	-0,199	-0,021	0,097	0,041	0,827
CC57	-0,124	-0,005	-0,190	0,115	0,771
CC29	0,337	0,090	0,035	-0,033	0,681
CC55	0,268	0,108	0,414	0,260	0,505

In factor 1, called Emergence and Ascension of CU, 19 articles were presented. In general, the works of this factor highlight concepts and analyzes about PA and their roles in

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companies and society. Meister (1998) is the author who presents the most conceptual work among the other authors of the factor. It highlights the concept of CU as the strategic umbrella for developing and educating employees, customers and suppliers to meet an organization's business strategies. In a sequential line from conceptual to practical thinking, other authors deal with the concept and emergence of CU, such as Blass (2000), who draws a comparison between the conventional and the corporate university. For him, there are issues that should be better explored when considering the appropriation of the term 'university' within a company. Later, in his 2005 paper, Blass clarifies his inquiries from the previous work we presented and points out that UCs can be a threat and confront traditional universities in the future. Along the same line of questioning the differences between traditional and corporate universities, Walton (2005) raises a question in his work about the fact that traditional universities bring little entrepreneurial insight into their everyday lives, although they cannot either. highlight the more intellectual side in corporate universities.

Renaud-Colon (2008) divides her work into three parts, the first of which deals exclusively with the responsibility of companies that the author understands to be one of the primary roles in global governance; the author then deals with the emergence and concepts of CU and suggests that they can be used as true political tools forging the soul and identity of a company, implementing business strategies, under conditions linked to certain principles of action; finally, it presents a case study for making a CU call as a lever for corporate responsibility.

Authors such as Bober (2004) discuss the evolution of training programs for CU. Allen (2002) point out that UCs are key strategic partners for the companies that own them, while Rademakers (2005) stresses that the rapid emergence of UCs on a global scale has served as powerful weapons in what they call the competitive battle between companies, countries and countries. economic blocks. Shaw (2004) questions that the CU is a local or global phenomenon and presents his findings indicating that the CU is a global phenomenon that transcends the national borders of the companies to which they belong and can be mediated by the political, cultural and economic characteristics of the companies. Jarvis (2001) follows Shaw's line to discuss the relationship between global learning and the business world.

One group of authors highlight CU in the pursuit of productive knowledge (Jansink, 2005), the strategic role of human resource development (Holland, 2006), and how CU can be configured to achieve success (Dealtry, 2001). In the latter, we highlight the author's description of an approach to making intellectual relationships more productive and manageable in the context of achieving strategic fit by combining a dynamic strategic learning approach with the resource capabilities offered by the growing CU portfolio. In Rhéaume (2015), there is a concern of the authors about how CU can deal with open innovation and criticize companies emphasizing that, to create competitive advantages through a CU, senior management must devote significant resources and have a plan to build the corporate curriculum in order to deal with innovation management.

Kolb (1984), Swanson (2001) and Macpherson (2005) were works that stood out with subjects added to UC's Emergence and Ascension factor 1, but which were not the cut-off identified for the denomination of this factor. The first one points to the question of having people with different learning styles that need important attention to be able to be reached by different methodologies capable of meeting their learning needs. The second one deals with e-learning, which is a teaching-learning modality and discusses the use and rise of this method much promoted in CU programs, as highlighted by the work of Macpherson (2005) through the argument about the implementation and the use of e-learning in CU. The work of Friga (2003)

deals with business schools and was not highlighted in this factor because it is a work that did not add to the results presented.

The theme Human Capital Development and Organizational Learning takes center stage in the second factor of this citation. This is because the work, in general, deals with investments in training, human capital and the vision of continuous learning within companies. Becker's work (1962; 1964) is central when it comes to addressing human capital as the main point of this factor 2. In all three papers there is a strong inclination to look at the return on investment of general skill training of business professionals for both these companies and society in general. For Becker (1964), investing in human capital allows us to observe a link between many social indicators, such as the birth rate of babies, family influence on children's human capital, economic progress, and more. Acemoglu and Pischke (1999) address investment in human capital within companies, especially when there is a need for development in cases of companies operating in highly regulated markets. For Prince (2003), the growth of CU tends to make their number higher than traditional universities and argue that part of this growth can be attributed to a growing recognition by top management in the positive impact that CU can bring their companies. Likewise, Moore (1997) sees that CU is capable of completely transforming the way to educate companies.

In Dealtry's three works (2000a; 2000b and 2003), in addition to Andresen's (2007) work, there is a strong inclination of the authors to question the ways in which CU exploits the development of human capital and business (through the development of people). Career-inspired and leadership-oriented, seeking to reach people development both academically and professionally. In Andresen's (2007) work, there is still a representation of a business model of a learning alliance as a potential solution to the main challenges that the corporate universities that were the object of research face.

Fulmer (1998) highlights the importance of lifelong learning that helps companies fuse the development of human capital with corporate development, especially through the combination of different forms of education, such as workplace practice, the development of people-oriented skills. and to business. Drawing a parallel with these different ways and combined education, Homan (2005) highlights the importance of e-learning in seeking to establish a broader range of knowledge (either geographic or temporal). However, there is a signal of concern for companies about the ability of e-learning to be able to contribute to CU learning processes and outcomes.

Prince and Beaver (1999) fits with Factor 2, as it reinforces the authors' view on the need to look at a more sophisticated and principles-oriented way of learning. discussing the redefinition of the role of PAs. Nixon and Helms (2002) highlight the growth of CU and suggest that they will outperform traditional colleges and universities in the coming years.

In Factor 3, about Training Effectiveness, the centrality is in the discussion about how to measure the results of training within companies to seek greater effectiveness in the purpose of their initial intentions. Alliger et al (1997) dealt with the theme of effectiveness from the perspective of the reactions of affectivity and usefulness of the trainings and the learning measures after the trainings and pointed out results full confidence in the studied trainings regarding the usefulness of these trainings. Kontoghiorghes (2001) sought to analyze the external and internal factors of the training context that may affect the results of these programs, highlighting the main variables found in the paper to justify their research, which were the measurement of student knowledge before and immediately after training; supervisory support and encouragement of the application of new skills and knowledge; intrinsic rewards for applying new skills and knowledge learned. For Tracey (1995), the environment is one of the factors responsible for the effectiveness of training. The author points out that climate and

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culture have direct and moderating effects on participants' behaviors after training programs. Mathieu (1992) supports the idea that training really improves the performance of professionals, from the generation of leadership skills to the reactions and motivations for work (Mathieu, 1992).

The works of Factor 4, called Corporate Knowledge Management, deal in general with how learning organizations (universities, schools, CU and others) work with knowledge building and management (Gibbons, 1994; Davenport, 1998; Senge, 1990). The three authors address the importance of managing the knowledge produced within companies, from their generation, through coding and coordination, transfer, their roles and intrinsic skills, to technologies for knowledge management and their management in practice. In Stewart (1999) there is a clear inclination to study the development of resources.

In the last factor of this citation, the CU Model Redefining Factor 5, there are works that deal with the discussion about the CU model, its methodologies, portfolio and how to compare them to traditional universities. The works from this factor will serve as guidelines for Study 4 that compose this thesis.

In Dealtry (2000c), the author explores the potential and organizational implications of integrated business learning so that the company can achieve the best of its strategic capabilities. He calls strategic learning fit a model that he considers to be critical in tying CU policies and purposes between learning (and its relationships) and the competitive business environment. In this model there is a constant exchange of contributions to seek the best outcome of CU in response to the competitive changes of the company and its business environment. Prince and Stewart (2003) explores in his work a number of factors that organizations must take into account when considering the accreditation of their corporate training and development activities. In this paper the author proposes a more specific look at the issue of learning accreditation within organizations. In general, the paper discusses how to contrast the traditional university with the processes within companies associated with work-based learning.

In El-Tannir (2002), the author discusses what he calls the "emerging CU model" that aims at continuous learning in the corporate world. According to the author, the fact that UCs can tailor specific training makes it possible for companies to improve employee productivity and skills using the latest advances in information technology and telecommunications. In this way, the training models that can be offered can better meet corporate needs over other learning methods and thus add value to the company's business goals by helping to recruit and retain talent. Peak (1997) questions whether UCs are what she calls "old wine in a new bottle" or whether indeed UCs are bringing a new way of delivering human development aligned with business objectives and goals. In conclusion, the work of Lave and Wenger (1990) corroborates the learning environment view and the difference between the formats that contrast the CU and the traditional university, in the vast majority of cases. It involves the practical, personal and social vision of culture and learning and reinforces the need to structure resources to meet learning needs in practice through the participation, curricula and practical communities that motivate participants in a learning model. learning process.

6.3 Analysis of Social Networks of Cocitation (Cocitation - Coc)

In Table 6 we present the main indicators of the factors extracted in the co-citation analysis. By using the co-citation co-occurrence matrix as an adjacency matrix, we generated a co-citation social network. For each co-citation factor we calculated the density and cohesion, as well as calculating for the network as a whole (all factors).

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6.4 Bibliographic Coupling Analysis (BC)

In Table 6, we grouped the bibliographic coupling factors. In the PCA 48 articles emerged that composed four factors to which we gave denominations that could facilitate the understanding of what each of the factors is, just as we did in the analysis of cocitation. Given the example with the analysis of cocitation, we highlight in text the factors with their names. Factor 1 was called Strategic CU; factor 2, Strategic Knowledge Management; factor 3, T&D Case Studies by CU; factor 4, CU Strategic Potential. The factors of this bibliographic coupling present factors that correspond to 68.9% of the variance of the whole sample, as can be observed in Table 7. At this point, this bibliographic coupling research seeks to present the works that present ongoing discussions on the theme of CU. As in item 2.4.2, of cocitation, we emphasize that the works that make up each of the factors are presented in the Appendix of this paper in order to facilitate the arrangement of the contents of Table 7 and also facilitate the reading and interpretation of the data presented in this item.

Table 6
Cocitation Factor Analysis - Bibliographic Coupling - R Studio

Artigo	Fator 1	Fator 2	Fator 3	Fator 4
BC113	0,890	0,152	0,072	-0,031
BC20	0,858	0,114	0,014	-0,104
BC66	0,799	0,203	-0,058	-0,095
BC171	0,798	0,088	-0,017	-0,098
BC56	0,777	0,275	0,011	-0,017
BC152	0,767	0,126	-0,086	-0,021
BC95	0,762	0,266	0,124	-0,066
BC78	0,759	0,165	-0,021	-0,183
BC17	0,753	0,187	-0,113	-0,110
BC29	0,744	-0,029	-0,136	-0,109
BC38	0,740	0,214	-0,038	-0,155
BC158	0,729	-0,203	-0,034	-0,015
BC138	0,689	0,245	0,329	0,034
BC37	0,630	-0,038	-0,106	-0,198
BC9	0,597	0,509	-0,113	0,013
BC21	0,566	0,129	0,475	-0,170
BC213	0,560	-0,116	-0,019	-0,053
BC219	0,560	-0,116	-0,019	-0,053
BC153	0,466	0,089	-0,155	-0,058
BC194	0,354	0,060	-0,211	-0,110
BC244	0,016	0,910	-0,097	0,047
BC240	0,076	0,896	-0,084	-0,034
BC203	0,196	0,893	-0,085	0,008
BC53	-0,005	0,888	-0,115	-0,071
BC90	0,051	0,832	-0,130	-0,004
BC36	0,290	0,824	-0,126	-0,047
BC198	0,530	0,745	-0,027	0,051
BC86	0,409	0,716	0,019	-0,077
BC184	-0,121	0,715	-0,081	0,512
BC210	-0,121	0,715	-0,081	0,512
BC148	0,531	0,625	0,079	-0,078
BC246	-0,103	0,606	0,126	0,417
BC157	-0,128	-0,119	0,938	-0,032
BC267	-0,128	-0,119	0,938	-0,032

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BC1	-0,128	-0,119	0,938	-0,032
BC67	0,018	-0,040	0,902	0,039
BC204	-0,141	-0,136	0,895	-0,056
BC245	-0,106	-0,103	0,869	-0,096
BC74	-0,145	0,068	0,699	0,168
BC132	0,405	-0,202	0,641	-0,131
BC121	0,347	0,429	0,501	-0,137
BC142	-0,216	-0,001	-0,009	0,908
BC223	-0,216	-0,001	-0,009	0,908
BC241	-0,216	-0,001	-0,009	0,908
BC216	-0,245	0,040	-0,038	0,857
BC137	-0,209	-0,056	-0,051	0,856
BC163	0,289	0,198	-0,046	0,795

The analysis of the bibliographic coupling of this work begins with the approach of the first factor of this item, which highlights the Strategic CU. Form this factor, 18 works that treat the CU as being strategic for the companies that own them. Authors such as Wang (2010) and Holland (2006) and Alagaraja & Li (2015) highlight the evolution of CU as strategic for companies. The authors point out that these changes illustrate such evolution and the transformation of traditional T&D departments into new institutional forms and that there should be a closer look at this.

Walton (2005) sees that CU is different from the traditional university in many ways and expresses his view of the little evidence that both can converge to deliver a corporate and intellectual mindset. Related to this, Rhéaume and Gardoni (2015) worry about senior management not investing heavily in CU and its concerns, so there will be considerable difficulty in dealing with the innovation management much needed to create such competitive advantages for the company. Dealtry (2008) points out that in order to succeed in the intensive management of new learning, as he calls it, there must be a continuous commitment to generate diffusion of innovation both in managing the strategic learning process and in the tactical inspiration that will make Let the company take a serious look at the creative nature of the leadership role in learning and the style of its management to achieve better results.

Cappiello & Pedrini (2013) already point to the CU phenomenon from the perspective of evaluating their performance, suggesting that CU Corporate universities have a hybrid nature that can be referred to as a business unit and as a higher education institution. In this regard, Parshakov and Shakina (2018) point out that CU is an intangible capital investment that should create competitive advantages for companies that needs to reflect higher business performance (central theme of this thesis). In Qiao (2009), work was carried out to explore processes and practices in Chinese UCs that highlighted three fundamental aspects of their existence: (1) strategies to support learning initiatives and business goals, (2) support of senior management and (3) leaders as teachers in management training programs. What needs to be improved is the lack of a training evaluation mechanism that is already addressed in the work of Bober and Barlett (2004) that points out that the results of internal evaluations are being used for various purposes, from means to improve internal programs from corporate training to the use of data as a justification and accountability mechanism for CU - which can corroborate to justify the company's own investments in CU and/or draw parallels with business results and CU development.

Patrucco (2017) define the CU design process around the company's strategy and suggest that there is an ideal way to be able to link the CU structure to a development and management process to pursue these. strategic results that CU can offer and that can be aligned with the work of Scarso (2017) finally, which highlights the fundamental role of CU as a

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knowledge management holder, as well as Antonelli (2013) points out that CU can indeed , represent a consistent choice in the vision of a strategy that aims to diversify and expand a company's services in increasingly deregulated and contestable markets. At the same time, CU maintains a close relationship between business strategies and the company's knowledge management and links the first factor of this work item with the second, presented in the next factor. Alajoutsijärvi's (2016) work, despite contributing to the vision of the context in which the CU emerged (response to the growing corporatization of higher education, fragmented into three contexts identified as (1) the traditional research university, (2) the university academic capitalist and (3) university corporate - CU), the work does not add to factor 1 of this work and we did not consider to explore the theme of the Strategic CU factor.

Factor 2, Strategic Knowledge Management, brings the work of Ryan (2015) arguing about the importance of CU evolution as a knowledge transfer mechanism that seeks to facilitate enterprise renewal and transformation in an increasingly disruptive digital age. more global and unpredictable, becoming the learning laboratory of the organization and, consequently, being the center of the strategic management of all company knowledge. For Cinton (2009), companies are implementing CU to help in knowledge transfer and that this transfer, which goes through the strategic management of existing knowledge in the company, determines the most beneficial generation of CU to help the company gain competitive advantage. Farias et al (2009) highlight the organizational performance based on the benefits and influences of the CU in the organizational knowledge management view through a model that they created to provide three strategic views from the organizational knowledge management (reason view, model view). and at the moment).

Carayannis's (1998) paper discusses the strategic role of T&D programs and suggests that the corporation of the future will be technology-oriented, which revolves around three mutually reinforcing levels of technology learning: (1) operational learning, (2) tactical learning or learning how to learn from experience; and (3) strategic learning or learning to learn how to learn from experience. At all levels, it is clear that knowledge management is strategic so that T&D programs can reinforce their strategic role for companies. Webster (2003) criticizes the European view on higher education of adopting a free market or business discourse. The main argument of the paper is the critical reinforcement that academy is increasingly being spoken of in terms of a "knowledge industry" or "revenue generator" where intellectual resources are "leveraged" and knowledge is a "corroborating the view of this factor of seeing knowledge management as strategic for companies".

In Prince and Stewart (2003) the authors state that "there is increasing recognition by senior managers in many large organizations of the strategic impact that corporate universities are having on their companies that can be seen as a consequence of many organizations recognizing the power of learning and knowledge as key drivers of strategic change" (p. 247). Clarke's (2001) paper discusses whether e-learning has the potential to propagate knowledge through interactive communities or whether it would fit only as a technology borrowed primarily from routine skill training. Blass (2005) disagrees with this factor from my point of view by addressing a specific case of what is being discussed in the United Kingdom (at that time) about the transformation of the scope of CU from the idea that these could offer undergraduate courses at any moment. As it does not add to the central theme of this factor, we discarded its contribution to such a discussion.

Factor 3 on CU T&D Case Studies, while bringing relevant and incremental issues to the first two factors, did not allow me to delve into the authors' discussions because they deal exclusively with very specific case studies. However, we want to highlight the main themes discussed by the factor authors, such as the evaluation process and key success factors of T&D

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and CU programs (Rogers, 2005; Joia 2012; Kessels, 1998; Sham, 2007). The other works by Sletti (2018), Leidner (1993), Charles (2002) and Basterretxea (2010) dealt with case studies on different topics that used CU (training of managers of a cooperative in a CU; discussion of the era). accounting x education and training in a CU), and therefore appeared in this factor.

The Strategic Potential of CU is highlighted in factor 4. The work of Nevins (1998) deals with the absence of CU in management consulting companies. Fundamentally, the paper seeks to establish a framework for understanding what a CU in this context can be. The authors see CU as a strategic potential for business consulting firms because they consider the particular dynamics of these management consulting firms and challenges.

Table 7
Bibliographic Coupling Network Legend - Analysis of Network Key Factors and Metrics

Fator	Artigos	Densidade	Coesão	Total	% Variância Explicada	% Variância Acumulada	KMO	Bartlett
BC1	15			11,483	35,5	24,4		
BC2	12			8,556	26,4	42,6		
BC3	9			6,764	20,9	57,0		
BC4	6			5,586	17,2	68,9		
Total	48	0,3672525	5				>0,5	$p<0,05$

7. DISCUSSION AND FINAL CONSIDERATIONS

As we pointed out at the beginning of this paper, my intention was to present what has been studied about Corporate Universities and find gaps that may be relevant from the findings of this work. My main objective with this bibliometric analysis work was to find studies on Corporate Universities that could contribute to a future study that will seek to answer a question that emerged from the findings in this study that aims to understand if companies that have Corporate Universities perform better in relation to companies that they do not have such organizational human development structures.

This study examined the last 30 years of research on corporate universities seeking to understand the field and what has been studied around the world on this subject. The final sample of 260 articles used in this work allowed us to notice a peak in research on this theme in the second part of the 1990s and some peaks of publications in the following decade. However, for about nine years there has been a decrease in research on corporate universities in general.

The method used in this work was the bibliometric analysis of citation, cocitation and bibliographic coupling together with the analysis of main factors and relationship networks of the findings of each phase of this work. As pointed out during this paper, the purpose of the citation and cocitation analysis is to map what was studied on the subject (intellectual basis) from references that emerged from the publications on this subject during the timeframe of the research (Vogel and Güttel, 2013). From this stage it is possible to observe and analyze the entire field of study and direct the analysis to build a historical theoretical framework on corporate universities. On the other hand, there was a bibliographic coupling work, which sought to present the ongoing research on corporate universities starting from the principle of the relationship between two works pointing to the same reference. This method determines that it is possible to understand what has been studied and to observe current research on corporate universities in this case.

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Although we have reviewed 30 years of publications on corporate universities, from the late 1980s to the present period of this research, we could not find any work that sought to analyze the state of the art on corporate universities and current and ongoing research on the subject. from here. Perhaps the work of Abel & Li (2012) may bring some of this insight, but many observations are lacking to unravel the findings about corporate universities. There are even works that corroborate the central motivation of this Thesis work, which involves understanding the relationship of corporate performance with and without corporate universities (Parshakov and Shakina 2018; Holland 2006; Qiao, 2009). However, little is observed about study trends in corporate universities in general.

In sum, research on CU has been growing again in recent years and we can say, given the findings in this paper, that there is much to study about the strategic role of CU in the business of the companies in which it operates.

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