FOUR DECADES OF INSTITUTIONAL THEORY IN PROJECT MANAGEMENT RESEARCH: A BIBLIOMETRIC STUDY

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Resumo

A partir da publicação do artigo seminal de Meyer e Rowan em 1977, observou-se uma grande difusão da teoria institucional no campo da pesquisa em administração, em especial das influências do ambiente institucional nas organizações. Considerando projetos como organizações temporárias, qual a contribuição da teoria institucional na pesquisa em gestão de projetos? Com objetivo de mapear como a pesquisa em gestão de projetos foi influenciada pelo avanço e crescimento da teoria institucional, este estudo utiliza-se da bibliometria para analisar uma amostra de 300 artigos publicados entre os anos de 1977 e 2016. Através da análise lexical, de cocitação e fatorial identificou-se que os estudos neste campo estão agrupados em três temas. O primeiro trata das teorias organizacionais em projetos como organização temporária, o segundo agrupa os estudos sobre a profissionalização do setor, visto como uma forma de isomorfismo normativo, e o terceiro da influência do ambiente institucional e sucesso em projetos. Constatou-se que a teoria institucional ainda pode contribuir para o entendimento das influências externas nos projetos como organizações temporárias.

Palavras-chave: Gestão de Projetos, Instituições, Teoria institucional.

Abstract

From the publication of the seminal article by Meyer and Rowan in 1977, there was a great diffusion of the institutional theory in the business administration research, especially the influences of the institutional environment in the organizations. Considering projects as temporary organizations, what is the contribution of institutional theory in project management research? With the objective of mapping how research in project management was influenced by the advance and growth of institutional theory, this study uses bibliometric to analyze a sample of 300 articles published between 1977 and 2016. Through lexical analysis, co-citation and factorial it was identified that the studies in this field are grouped in three themes. The first deals with organizational theories in projects as a temporary organization, the second groups the studies on the professionalization of the sector, seen as a form of normative isomorphism, and the third brings the influence of the institutional environment and success in projects. It was found that institutional theory could still contribute to the understanding of external influences in projects as temporary organizations.

Keywords: Project Management, Institutions, Institutional Theory.

I. INTRODUCTION

Over the years, there has been a growing relevance of institutional theory in the field of socio-economic sciences (Weerakkody, Dwivedi, & Irani, 2009). This theory investigates the effects of institutions, defined as rules, constraints, and incentives within an economic sector or industry (North, 1990). This effect has been studied for many decades, however, since the publication of the seminal article by Meyer and Rowan (Meyer & Rowan, 1977), this theory widened its diffusion among the researchers, therefore seeking to understand its influences in one of the areas of applied social sciences, in this case project management, contributes to the progress of both.

Seeking to understand the effects of institutions on organizations has come together with interest in environmental influences on efficiency. The emergence of contingency theory, resource-based view, ecology among others, each in its form, has led to an increase in interest in how successful organizations, being open systems, interacted with the changes in a rational way (Greenwood, Oliver, Sahlin, & Suddaby, 2008).

The diffusion of bureaucratic structures in organizations served as the central point in research regarding the isomorphic effect of institutions in organizations (DiMaggio & Powell, 1983; Meyer & Rowan, 1977). However, because of the need to develop non-routine activities, the adhocracy structures or more commonly called projects have emerged (Scott, Levitt, & Orr, 2011). Projects are defined as temporary endeavours aimed at producing a unique result. Thus, the importance of this field was strengthened also by the new view on the organizations as more flexible, in search of innovation and a greater customization of their products (Rabechini Jr., Carvalho, Rodrigues, & Sbragia, 2011).

Despite its simultaneous development, the relationship between projects and institutional theory has not yet been extensively studied (Dille & Söderlund, 2011). This paper aims to contribute to a better understanding of how institutional theory focusing on the effects of institutions on organizational structures, especially under the optics of their efficiency, has contributed to the behavior understanding of project management practices.

For that, a bibliometric study was carried out on a basis of 300 publications, between 1977 and 2016, which cover in their content the institution themes, their variations and project management. These were acquired through a search in indexing base ISI - Web of Science. Through the analysis of co-citation, factorial, lexical and other metrics commonly used in this type of research, it was verified that institutional theory has influenced research in project management, especially in the field of professionalization of the sector. It is discussed how this theoretical lens can still contribute to the advancement of studies in projects as temporary organizations (Packendorff, 1995).

The structure of this article, in addition to this introduction, is composed of a brief review of the literature on the central themes of this study, institutional theory and project management, followed by the methodological procedures, then the results analysis and finally, the concluding remarks.

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International Symposium on Project Management, Innovation and Sustainability
ISSN: 2317-8302

II.   LITERATURE REVIEW

A. Institutional Theory

Organizational theories appear as a way of translating into concepts what is observed in practice by researchers. Among these theoretical approaches, there are those that seek to understand the influences of the environment on the systems that form the organization, which are open, and its ability to adapt to maintain its access to resources that guarantee its survival (Morgan, 2006). The influence of institutions in organizations has drawn the attention of scholars since the second half of the nineteenth century. From economic to political and social sciences, all contributed to the idea that neither individuals nor organizations act solely based on rationality, but also as a reflection of an interaction with the institutional environment in which they were inserted (Scott, 1995).

However, these ideas remained relatively marginalized until the mid-twentieth century. In this period, organizational theories emerged that focused on the interaction of organizations with the environment, including the resource-based, contingency view and ecological theories. All, in their distinct form, argue that thriving organizations are open systems that change as a rational response to the environment they belong to (Greenwood et al., 2008; Scott, 1995).

Based on Max Weber's work on bureaucracy and its diffusion, Meyer and Rowan (Meyer & Rowan, 1977) published one seminal work on what would be called the new institutionalism (Peng, Sun, Pinkham, & Chen, 2009). This article laid the groundwork for the development of institutional theory, challenging the view of current organizational theories, which asserted that organizational structures derived from the need to increase efficiency by proposing that rules, products, services, policies, techniques, and programs are considered powerful myths, to which organizations shape themselves.

This process is called isomorphism and is desired by organizations, because it brings legitimacy, even if this implies a loss in the efficiency of their structures, since legitimacy leads to a greater availability of resources that guarantee their survival. The concept of isomorphism is carried out DiMaggio and Powell (DiMaggio & Powell, 1983). These authors were based on a counterpoint to why bureaucracy and other forms of change in organizational structures were widely adopted. In some situations, it is not the efficiency, but the homogenization in a sector of organizations that is the reason for the adoption of bureaucratic practices.

Legitimacy can be defined as a "generalized perception or assumption that the actions of an entity are desirable, proper or appropriate in some socially constructed system of norms, values, beliefs, and definitions" (Suchman, 1995, p. 574). Legitimacy can be classified in strategic and institutional. Respectively, the first deals with the active actions of the organization to manipulate the institutions to obtain support and the other deals with how institutional pressure are formed, transcending the purposive control of a single organization (Suchman, 1995). Institutions provide rules, constraints, and incentives that foster the exchange relationships of economic actors that in a context apply to all (Peng, Wang, & Jiang, 2008). These institutions can be structured in formal and informal (North, 1990), depending on how the rules are explicit or implicit (Zenger, Lazzarini, & Poppo, 2002).

Tolbert and Zucker (Tolbert & Zucker, 1996) add to institutional theory the perception that organizations are not only based on increasing efficiency as a decisive factor in the creation or change of their structures. However, there is still a relation of how much value this structure will add to the organization because the very process of institutionalization depends on the

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International Symposium on Project Management, Innovation and Sustainability

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organization's limited resources. Therefore, the process of institutionalization occurs in stages, identified by the authors as habitualization, objectification, and sedimentation.

B. Project Management

Organizations depend on activities to meet their goals. These activities may be routine, related to day-to-day operations, or may be temporary with a single expected result. These activities are commonly called projects (Kerzner, 2009; PMI, 2013; Söderlund, 2004).

Projects are commonly used in all types of organizations as a method to better exploit enterprise resources by integrating it horizontally and thus linking the many departments of the organization toward a common goal (Kerzner, 2009). Projects can also be labeled as temporary organizations, linking them to the applicability of organizational theories in general (Lundin & Söderholm, 1995; Packendorff, 1995; Sydow & Braun, 2017).

Managing these temporary efforts is a demanding and challenging task, especially since most companies have a vertical hierarchical structure that makes horizontal cooperation unnatural. In addition, when projects are launched, they face constraints of time, financial, human, and other resources. All these unique features require qualified personnel to manage every effort to achieve the desired goal, and the project manager is primarily responsible for all that orchestration (Kerzner, 2009).

Although the project management approach is relatively new to many organizations, projects are activities that have been part of human society for a long time. Project management techniques, languages, tools and concepts are widely publicized, however it is recent, dating back to the early 1950s (Morris & Geraldi, 2011).

Beginning with government agencies and construction enterprises, where the first basic techniques were developed, project management gained attention from other organizations, leading to the emergence of the earliest associations of the area in the 1960s, which facilitated the dispersion of this knowledge. The associations then enhanced the process of aggregating knowledge so that best practices could be identified, and then published in their knowledge guides (Carvalho & Rabechini Jr., 2011).

Today the knowledge field in project management is widely recognized and has a high degree of legitimacy with organizations and the market. Most organizations today understand that to compete in a rapidly changing environment, where innovation is key to success, project management is indispensable. This certainty is the result of the knowledge from high management of the tools that this knowledge field provides, or by observing this methodology being used by other organizations (Padalkar & Gopinath, 2016; Rabechini Jr. & Carvalho, 2013).

III. RESEARCH METHOD

To achieve the objectives of this work, bibliometric analysis was used. The first time the use of the term bibliometric was known occurred in 1969 in the Journal of Documentation. From this point onwards, there was an increase in the use of this approach, which can be defined as the quantitative study of physically published units or bibliographic units or substitutes of both (Broadus, 1987).

The survey of the publications was done by consultation in indexing base ISI - Web of Science, in this one the search was done restricting to the publications in the English language, and to "articles" or "reviews" types. Entries that contained the terms "education * Institution *" within

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the title, abstract, or keywords were deleted. These filters aim not to obtain work with a focus on educational institutions that did not address the institutional theory. The sample was restricted from the publication of the seminal article on institutional theory in the field of administration, so only articles published between 1977 and 2016 were collected.

The filters were applied using the broad search approach to reach the largest number of publications, so the terms used were "institut *" and "Project Management", asterisks after the terms allow to generalize the search reaching all variations thereof. As a result, we obtained a list of 300 publications that were exported in an appropriate format, and reviewed by the authors, for analysis using Bibexcel software. With this software, metrics were verified as the most cited references and co-citation matrix. This was used to generate the covariance network, utilizing the Vosviewer software, and the factorial analysis, using the SPSS tool (Field, 2009; Persson, Danell, & Schneider, 2009).

The analysis of co-citation is one of the most used techniques in bibliometric studies since it allows to visualize how the body of knowledge in the aimed field study is constructed, which works play a role of greater influence and the clusters that are formed, allowing to identify the thematic studied. Thus, it is possible to identify opportunities for further studies and to understand the development of the research field (McCain, 1990; Zitt & Bassecoulard, 1996).

Finally, all the abstracts of the 300 works were extracted and analyzed through the Iramuteq tool. Using the lexical analysis it was possible to obtain the descending hierarchical classification (DHC) by the Reinert method (Reinert, 1990), generating a dendrogram partitioned into classes that are composed of units or segments of text with similar vocabulary, allowing the understanding of the themes of the publications (Camargo & Justo, 2016).

IV. RESULTS OF THE STUDY

The first result of the analyzes made in the set of 300 articles identified was identification of the publications most cited by the authors of the articles. Table 1 presents the results obtained. The most relevant publication for this set of 300 articles is the PMBoK (Project Management Body of Knowledge) with 37 citations. Various editions of PMBoK were aggregated into a single one (PMI, 2013) because it was not in the scope of this work evaluates the differences between them. The second most cited publication was the book by Morris (Morris, 1997) entitled The Management of Projects being quoted in 14 publications. The third most cited reference is the work of Eisenhardt (Eisenhardt, 1989) which was quoted 12 times, revealing a preference from qualitative methods.

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Table 1:
Publications with the highest number of citations

#	Cited	Author	Year	Title
1	37	PMI	2013	A Guide to The Project Management Body of Knowledge (Pmbok® Guide)
2	14	Morris	1997	The Management of Projects
3	12	Eisenhardt	1989	Building Theories from Case Study Research
4	9	Hodgson	2002	Disciplining the Professional: The Case of Project Management
5	8	DiMaggio	1983	The Iron Cage Revisited: Institutional Isomorphism and Collective Rationality in Organizational Fields
6	8	Shenhar	2001	One Size Does Not Fit All Projects: Exploring Classical Contingency Domains
7	8	Thompson	1967	Organizations in Action: Social Science Bases of Administrative Theory
8	7	Engwall	2003	No Project Is an Island: Linking Projects to History and Context
9	7	Packendorff	1995	Inquiring into The Temporary Organization: New Directions for Project Management Research
10	7	Morris	2000	Research into Revising the APM Project Management Body of Knowledge
11	7	Söderlund	2004	Building Theories of Project Management: Past Research, Questions for The Future
12	6	Cooke-Davies	2002	The ''Real'' Success Factors on Projects
13	6	Johnson	1972	Professions and Power
14	6	Abbott	1988	The System of Professions: An Essay on The Division of Expert Labor.
15	6	Greenwood	2002	Theorizing Change: The Role of Professional Associations in The Transformation of Institutionalized Fields
16	6	Meyer	1977	Institutionalized Organizations: Formal Structure as Myth and Ceremony
17	6	Hobday	2000	The Project-Based Organisation: An Ideal Form for Managing Complex Products and Systems?
18	5	Larson	1977	The Rise of Professionalism
19	5	Fournier	1999	The Appeal of 'Professionalism' As A Disciplinary Mechanism
20	5	Choudhury	2003	Portfolios of Control in Outsourced Software Development Projects

Note. Source: Authors using Bibexcel, 2017.

It was possible to notice that although the set of articles resulting from the research in the base of publications contains 300 works, the most cited references did not obtain expressive numbers. The PMBoK (PMI, 2013) was cited in only 12.30% of these, the second reference was cited in only 4.65% number close to 3.99% of the third reference. Among the 20, most cited references are important texts in both project management (Engwall, 2003; Hodgson, 2002; Packendorff, 1995; Shenhar, 2001) and institutional theory (DiMaggio & Powell, 1983; Meyer & Rowan, 1977).

To gain a better understanding of the content, we used the descending hierarchical classification (DHC) method, which resulted in a dendrogram (figure 1). When needing to examine the groups of words extracted from the summaries of the 300 publications, one sees the division into four distinct classes. Classes 1, 2 and 3 are related to a group comprising 79% of words. The fourth class with approximately 21% is another category.
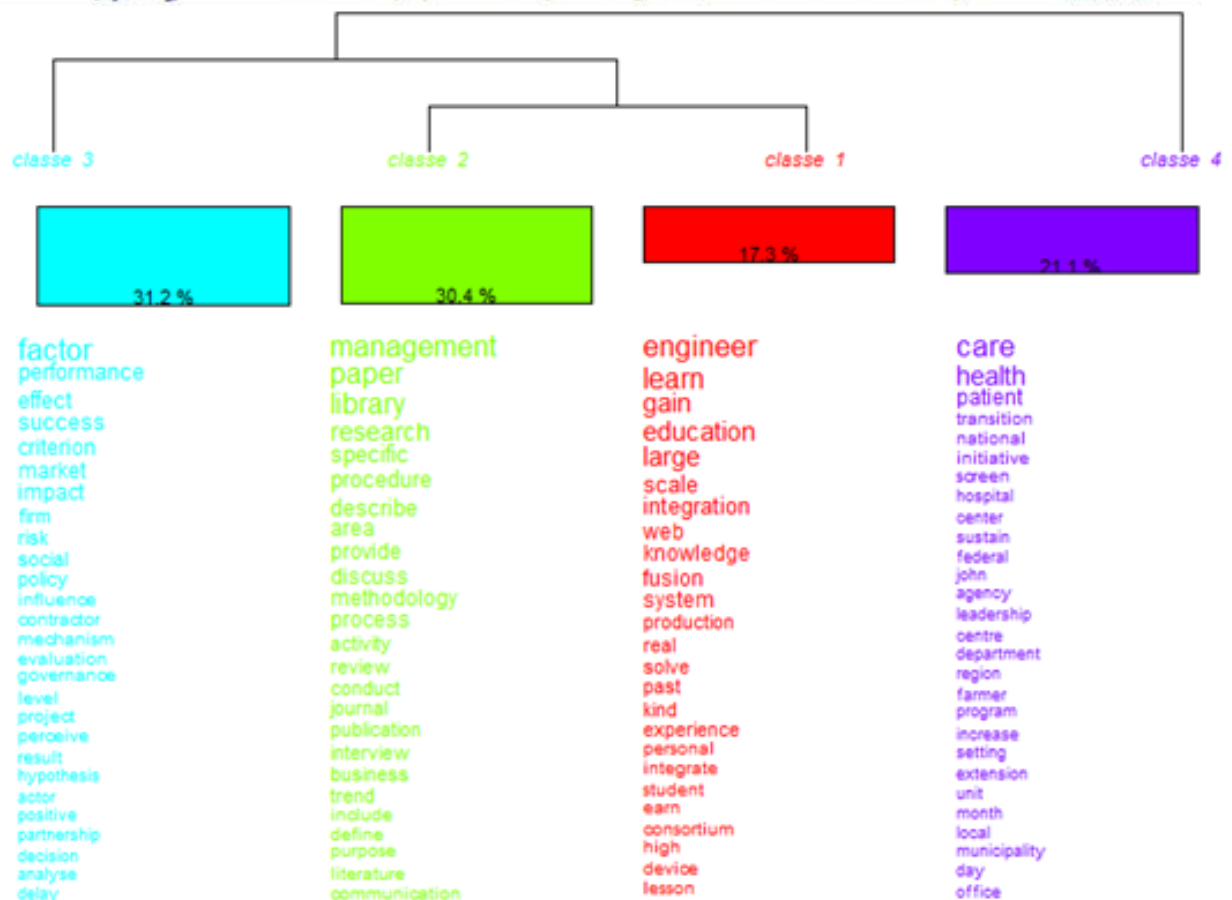
Figure 1. Dendrogram of 300 publications' abstracts
Source: Authors using Iramuteq, 2017.

The DHC, through analysis of segments of text and their vocabulary provided results that allow to describe each class by its characteristic vocabulary and by the variables that in this work are the articles of the group of 300 (Camargo & Justo, 2016). This representation enables us to understand that class 4 is related to health studies and correlates. The software also performs a factorial matching analysis, allowing the visualization of which articles make up each class (figure 2). Article 189 in the figure is the work of Wilson (Wilson, 2009) entitled Implementation of releasing time to care - the productive Ward published in the JOURNAL OF NURSING MANAGEMENT. This is the core article of class 4 that looks into the issue of project management in health institutions.

Classes 1, 2, 3 by factorial analysis and DHC are related to each other, with classes 1 and 2 being a closer relative; however, each one addresses a central theme of its own. The core articles of class 1, 249 (Christodoulou, 2004), 190 (Chauvin, Koppe, & Cardella, 2009), 102 (de Graaff, 2014) address aspects of professionalism and norms. In the class 2, the papers present similar highlights, being slightly stronger for those of number 80 (McGowan & Namachchivaya, 2012) and 84 (Wong, Caplan, Chan, Fung, & Lam, 2015), these deal with academic research themes also addressing management of projects in educational institutions. In class 3, two articles stand out 9 (Chou, Hsu, Lin, & Chang, 2016) and 148 (Cheng & Carrillo, 2012), being the class that deals with project management as the dominant theme.
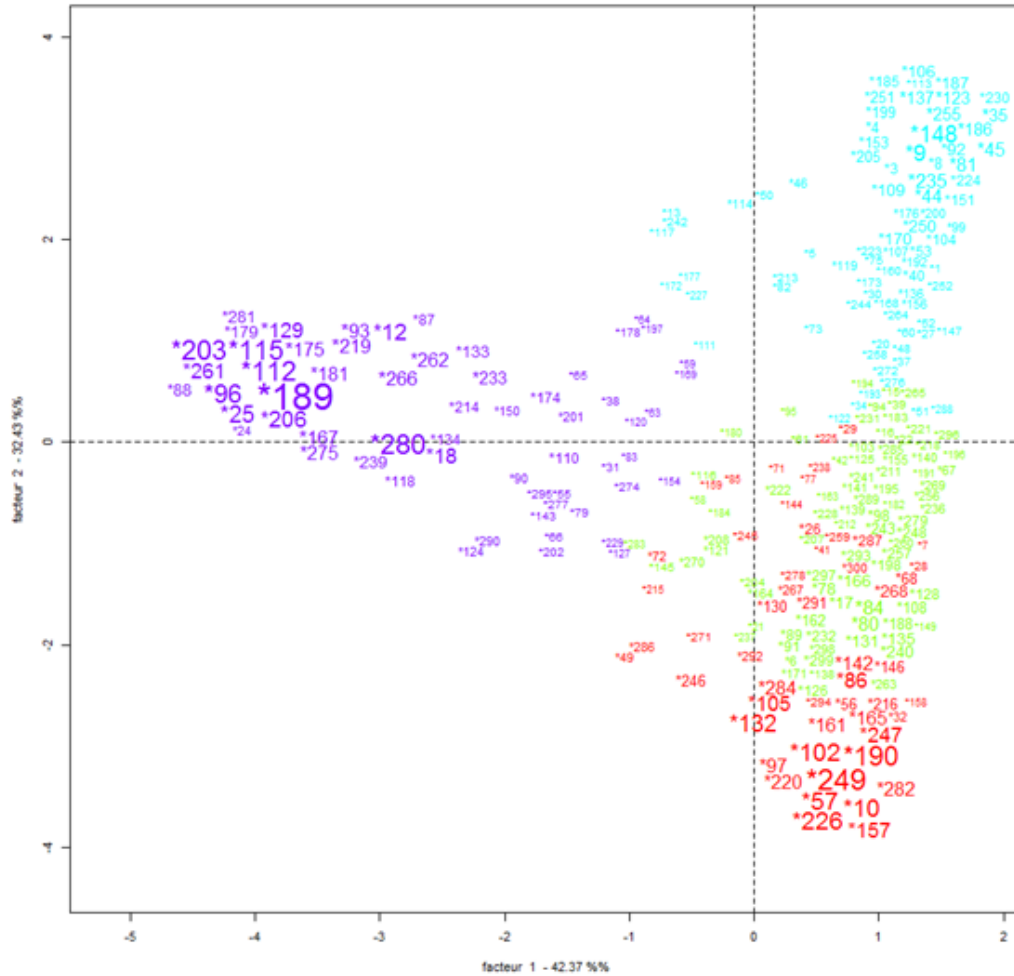
Figure 2. Classes of articles classified by factors
Source: Authors using Iramuteq, 2017.

Aiming to understand the disposition of the literature that approaches the influences of the institutional environment in projects, the map of the co-citation network was analyzed (figure 3). This allows to graphically visualizing how the most cited references are related and their influence through their central position in the network. The network is presented in three separate groups.

It can be observed the importance of the most cited publications PMBoK (PMI, 2013) and The Management of Projects (Morris, 1997) present the greatest relevance in the network, a result in agreement with the fact that they are the most cited works. Highly relevant publications for institutional theory in the social sciences (DiMaggio & Powell, 1983; Meyer & Rowan, 1977) appear prominently within the first grouping (green). The classic work that deals with the theme of projects as temporary organizations (Lundin & Söderholm, 1995; Packendorff, 1995) and the influence of the environment on them (Engwall, 2003; Shenhar, 2001) are also highlighted in the second group (red). In the third group (blue), we highlight studies that deal with professionalization, or also normalization of the sector (Abbott, 1988; Hodgson, 2002; Morris, Patel, & Wearne, 2000).

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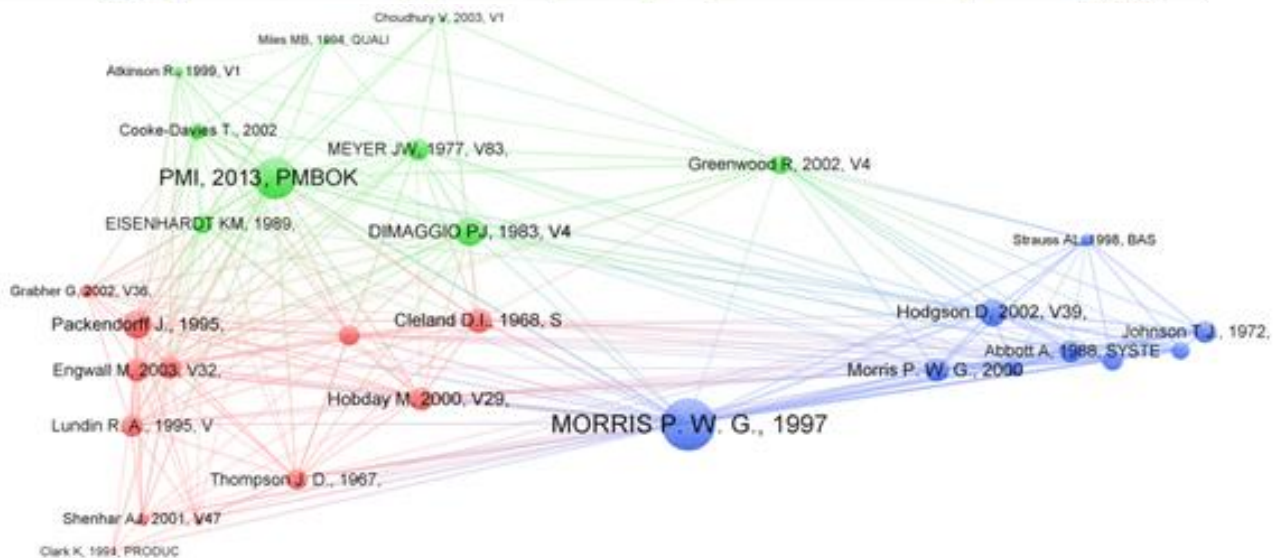
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Figure 3. Co-Citation Network
Source: Authors using VosViewer, 2017.

As a way of obtaining a greater understanding of how the knowledge structure of the themes researched in this work relates, we analyzed the results of the factorial analysis obtained through the co-citation matrix (table 2). We found three factors; these are considered subsections of the research field (McCain, 1990).

Table 2:
Factor analysis: 1977-2016

Theory in Project Management	Normative Isomorphism	Institutional Environment
Cleland (1968) (0,84)	Blackler (1995) (0,89)	Choudhury (2003) (0,86)
Hobday (2000) (0,83)	Fournier (1999) (0,88)	Atkinson (1999) (0,83)
Morris (1987) (0,78)	Abbott (1988) (0,88)	Meyer (1977) (0,68)
Grabher (2002) (0,76)	Larson (1977) (0,88)	Cooke-Davies (2002) (0,62)
Thompson (1967) (0,75)	Johnson (1972) (0,84)	Greenwood (2002) (0,52)
Engwall (2003) (0,74)	Hodgson (2002) (0,8)	DiMaggio (1983) (0,48)
Lundin (1995) (0,73)	Morris (2000) (0,66)	
Shenhar (2001) (0,71)	Greenwood (2002) (0,54)	
Packendorff (1995) (0,71)	Morris (1997) (0,51)	
Söderlund (2004) (0,69)	PMI (2013) (-0,51)	
Winter (2006) (0,62)		
Clark (1991) (0,60)		
Cooke-Davies (2002) (0,44)		

Note. Source: Authors using SPSS, 2017.

The first factor was called project management theory because it contains papers that deal with project topics such as temporary organizations, advances in field research, and external influences under projects. The second factor brings work on professionalization and establishment of norms and standards, being tied to the normative isomorphism of the sector.

In the third factor, we find the classics of institutional theory together with work on success in projects, being the factor that contributes to the understanding of the effect of the institutional environment of the results of the projects.

A correlation between the results of the lexical analysis and the map of co-citation with the identified factors is observed. DHC classes 1 and 2 are related to the blue zone of the co-citation network and to the normative isomorphism factor. The red zone of the co-citation network relates to the theory factor in project management, and to class 3 of DHC. The institutional environment factor is related to the green zone of the co-citation network, being not related to one of the DHC classes, it is understood that the contribution is dispersed among the 300 articles, with a greater relevance of class 3.

V.   DISCUSSION

The results show that the effect of institutions in project management is still little explored by the high-level literature that is published in the main periodicals of the project management area, which are all indexed in the Web of Science database. This result contributes with what is reported in the literature (Aaltonen & Sivonen, 2009; Gemünden & Aubry, 2017; Miterev, Engwall, & Jerbrant, 2017; Morris & Geraldi, 2011). This is due in part to the fact that project research has seen it as entity apart other than the environment in which they are inserted (Hanisch & Wald, 2012).

With the advance of the researches in project management, the interest in understanding the external influences began to grow (Morris & Geraldi, 2011). This interest is currently ranked as the third level in project management research, linking projects as temporary organizations under the influence of the environment, with the search for management factors that contribute to the success of the project (Geraldi & Söderlund, 2017).

This paper presents how the field of research is when it comes to the study of institutional theory in projects as temporary organizations, contributing to the most relevant authors regarding the effects of the external environment on the project. The relevance of the book by Peter W. G. Morris (Morris, 1997) for discussion of this theme is noticeable. In addition, central works in the construction of a theory in the field are revealed in the Theory in Project Management factor (table 2). This explains the main authors that a researcher should refer to when trying to understand the external influence on projects. More specifically from the institutions, the Institutional Environment factor reveals the importance of the seminal papers by Meyer and Rowan (Meyer & Rowan, 1977), which is the main pillar of this article, and also DiMaggio and Powell (DiMaggio & Powell, 1983), which classifies institutional factors into coercive, mimetic and normative, deepening the concept of isomorphism in an industry.

VI.   CONCLUSIONS

Bibliometric aim to contribute to the understanding of how a theme was studied in the past. Its results may contribute to more experienced researchers to find gaps in the field of knowledge, and seek to fill them, thus advancing knowledge in this field. Yet less experienced researchers can use the results to gain understanding of the topic and identify the seminal authors, and important references.

The main result of this work is to identify what has been discussed in the literature about the effects of external factors into projects, especially the institutions, portrayed as rules of the game (North, 1990), which all actors participating in the sector are subject to. It is also noticed

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that the use of lexical analysis through the software Iramuteq made it possible to identify among the 300 articles surveyed that a selection of them deals with project management as the dominant theme, and they were grouped into a class denominated 3. These articles may be the subject of a systematic review of the literature in future researches, thus deepening the understanding of how institutional theory has been applied in project management research.

   One limitation of this work is the fact of the key words chosen, especially when we sought to capture the literature that brings the theme of institutions. Aiming to obtain the maximum number of works that deal with institutional theory, together we captured many works that simply addressed the management of projects in an institution (e.g. library, hospitals), not necessarily dealing with institutional theory. This limitation is revealed by the low citation index of the paper by Meyer and Rowan (Meyer & Rowan, 1977) that inaugurates the period of study in this article. Nevertheless, the results were still adherent to the research theme.

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