



The contribution of project management offices (PMO) to the strategy implementation in Project-Based Businesses: systematic literature review and proposal of a model

A contribuição dos escritórios de gerenciamento de projetos para a implementação da estratégia em Negócios Baseados em Projetos: revisão sistemática da literatura e proposição de um modelo

Jéssica Vivianne da Cunha Silva de Brito¹

Josué Vitor de Medeiros Junior²

Abstract

This paper seeks to propose a theoretical model capable of guiding investigations dedicated to the contributions of Project Management Offices (PMO) to the organizational strategy in Project-based businesses (PBB). A systematic review of the literature was conducted in the databases *Web of Science* and *Scopus* in order to identify the papers that went over the topic. The gathered sample was made of 19 articles, which were explored through the content analysis technique based on Saldaña's coding cycles (2016). The results identified that PMO contribute to strategies through actions aimed at project integrity, monitoring activities, integrating and communicating between projects and people, standardizing instruments and methods, aligning strategic objectives, and portfolio management. It is understood that by developing those activities, the PMO are supporting the strategies, linking them to the projects, and creating a favorable environment for their realization. This study contributes to the literature by generating an understanding of how to integrate projects into organizational strategies in the context of PBB and offer a more specific view of how PMO support the process of implementation of strategies in PBB. Its originality is based on the role of the PMO in the context of PBB.

Keywords: Project management offices. PMO. Strategy implementation. Project-based businesses. Systematic review.

¹ Mestranda em Administração pelo Programa de Pós-graduação em Administração da Universidade Federal do Rio Grande do Norte (UFRN).

² Doutor em Administração, Docente no Programa de Pós-graduação em Administração da UFRN.

Resumo

Este trabalho busca propor um modelo teórico capaz de nortear investigações que se dediquem às contribuições dos PMO para a estratégia organizacional no contexto dos Negócios Baseados em Projetos (NBPs). Para tanto, foi realizada uma revisão sistematizada da literatura, nas bases Web of Science e Scopus, para identificação dos trabalhos que tratassem do tema. A amostra obtida foi constituída por 19 artigos, os quais foram explorados por meio de técnica de análise de conteúdo baseada nos ciclos de codificação de Saldaña (2016). Os resultados alcançados permitiram identificar que os PMO contribuem com as estratégias por meio de ações voltadas à integridade dos projetos, ao monitoramento das atividades, à integração e à comunicação entre projetos e pessoas, à padronização dos métodos e instrumentos, ao alinhamento dos objetivos estratégicos e à gestão do portfólio. Entende-se que ao desenvolver tais atividades, os escritórios estão apoiando as estratégias, vinculando-as aos projetos e criando um ambiente favorável à sua realização. Este estudo contribui com a literatura ao gerar uma compreensão sobre como integrar os projetos às estratégias organizacionais no contexto dos NBPs e oferecer uma visão mais específica sobre como os PMO apoiam o processo de desdobramento das estratégias em projetos. A originalidade dele se fundamenta no papel dos PMO para o contexto dos NBPs.

Palavras-chave: Escritório de gerenciamento de projetos. PMO. Implementação da estratégia. Negócios baseados em projetos. Revisão sistemática.

Introduction

When investigating the existent relationship between organizational strategies and project management in the field of project-based businesses (PBB), an understanding predominates: both of them influence each other. While the first guides the organizations to the execution of projects aligned with corporative goals, the second allows the strategies to be implemented timely (Ansari, Shakeri & Raddadi, 2015; Srivannaboon & Milosevic, 2006; Young, Young, Jordan & O'Connor, 2012).

Analyzing the literature over the topic, it is possible to identify a large number of perspectives over such relationship, from the understanding of projects as means of strategy implementation until the comprehension that they are relevant to the organizational context in such way that they influence even the manager's strategic decisions (Löwstedt, Leiringer & Rääänen, 2018). In the context of PBB, it is known that projects take a much more important role concerning institutional goals than what had been identified so far in research (Thiry & Deguire, 2007).

Generally speaking, no matter the exerted role, studies show project management contributing to the realization of the strategies through a series of models, roles, and structures that compose its theoretical body. These mechanisms support strategic goals in various ways and degrees, there being no agreement in which tools are more important or how they should be adopted. The comprehension verified in literature is that the employed project management practices should be appropriate and compatible with the interests and characteristics of each organization. (Thiry & Deguire, 2007).

This way, project management offices (PMO) come as one of those competent initiatives to help organizations in the implementation of their strategy. As they are structures whose responsibilities go from supporting the management of several projects to their direct management in some cases, PMO are seen as part of a complex network of relationships in which the strategy, the organizational structure projects are linked to (Aubry, Hobbs & Thuillier, 2007). Besides, they usually are seen as the focus of investigations that holistically comprehend how projects relate to the other institutional activities (ibid).

While previous studies had identified that they promote the achievement of the strategy, stimulate the development of a proper environment for said action and that, in many organizations, are the responsible for their alignment with the projects (Aubry *et al.*, 2007; Sandhu, Al Ameri & Wikström, 2019), there are few papers present how these roles are exerted. The literature over the topic lacks research dedicated to showing PMO contributions to the strategy and, more importantly, the peculiarities of this relationship in the field of PBB.

About PBB, it is noted that the concept adopted in this article deals with businesses formulated and executed based on the realization of projects (Veras, 2017; Artto & Wikstrom, 2005). When exploring the databases, it is possible to verify a limited number of articles that specifically address this concept. Among the studies found, most use "project-based organizations" (PBO) as a synonym for PBB, even the two are conceptually different. For these reasons in this research, these terms were adopted as synonyms only in automatic searches. In the results, it is sought of the analytic approximation of both considering the existing conceptual differences.

In face of this contextualization, and considering the aspects inherent to the approached concepts, it was sought to, with this research, propose a theoretical model capable of guiding investigations dedicated to the contributions of PMO to the organizational strategy in PBB. To do so, a systematic literature review was carried out to survey studies that address roles by which PMO can contribute to the implementation of strategy in the context of PBB. The searches were conducted in the databases Web of Science and Scopus through the keywords

"project management office", "project-based business" and "strategy", with their respective synonyms. Results were filtered based on research areas and document types. The papers obtained were analyzed qualitatively based on content analysis technique according to the orientations of Saldaña (2016).

It is believed that with this research it is possible to obtain a greater comprehension over how to integrate the projects to the organizational strategies in the context PBB and offer a more specific view on how PMO support the process of translating the strategies in projects. It also offers a wider view of the role of PMO in the organizational context.

Through this perspective, the study is made of four other sections beyond this introduction. The next section introduces the concepts that guided and grounded the research. The third shows the methodological procedures that conducted this investigation. The fourth presents the inferences brought from the analysis of the relevant papers that resulted from the literature review, as well as the theoretical model proposed. The fifth presents the final considerations, which include implications to the field of study, suggestions or new studies, limiting factors for the investigation, and management contributions.

Theoretical background

One of the first understandings obtained when studying the literature on project management is a lack of standardization as to the concepts and approaches of the themes studied. For this reason, it believes that it is important, in research dealing with such subjects, to define the constructs that guide an investigation to avoid possible doubts and increase the validity of the work.

Therefore, it explains firstly the approach adopted for the concept of Project-Based Business, which concerns organizations whose strategies are based on the realization of projects (Veras, 2017). Analyzing the national literature, it appears that some monographic studies use the concept, however it was the text by Veras (2017) that defined him in the way it is approached in this research. In the international context, some studies discuss the theme, but in a non-standardized way, such as the case of Archibald (2005), that did not advocate the term "project-based business", but presented a characterization similar to that defended by Veras (2017), and Artto and Wikstrom (2005), who introduced the term "Project Business", which, according to the authors, refers to the fraction of the business that relates to projects as a means to reach their strategic interests.

Expanding the analysis, it identifies many other definitions that are used in investigating projects at the organizational level. According to Anselmo (2009), the terms found (which refer to the organizations in which the project are central elements) are diverse and plural, such as firms, companies, organizations, or businesses based, led, oriented, or dependent on projects. For Archibald (2005), many of these concepts differ in origin. However, when examining a bibliography on project management, it is possible to verify that in many papers they are adopted as synonyms.

Among the terms found in the literature, one of the most adopted is that of “Project-Based Organizations” (PBO). This concept is distinguished in the essence of applying in this search, because it refers to organizations whose functional structure is founded on projects, being the main examples of this perspective as engineering and architecture companies (Archibald, 2005). On the other hand, a definition of PBB refers to the business model in which projects are at the center of organizational strategy (Veras, 2017).

However, despite the conceptual differences, what is observed in the published studies on the subject is an overlap of approaches and perspectives, the way that it becomes necessary a specific analysis of each case. For this reason, in the searches carried out in this research, the terms PBB and PBO were used as synonyms in the first instance, whose purpose was to survey the largest possible number of studies, and after that, they were analyzed considering the definition presented by Veras (2017). In cases where such a conception was not enough to determine whether or not the organization addressed was a PBB, the criteria characterizing this business model, proposed by Huemann and Stummer (2000), were adopted: (1) Does the organization adopt management by projects as an organizational strategy? (2); Does the organization create temporary undertakings to accomplish complex processes? (3) Does an organization have a portfolio with different types of projects? (4) Does the organization apply a new project-based management paradigm? (5) Does the organization have an explicit project management culture?

Thus, it is evident that, despite the concept used, there are studies in which even though the word used is different, it is understood that it refers to PBB. As a result, it believes that the findings of the articles found generate plausible inferences to be applied to the context of PBB, as is the case with considerations developed around PMO.

Regarding the last, the bibliography on the models and functions performed by them is vast and multiple. Analyzing recent studies, it is possible to know PMO supporting the transformations of the business environment (Lavoie-Tremblay et al., 2017); integrating the product life cycle; being the key elements for knowledge management (Arbabi, Taleshi &

Ghods, 2020; Nadae & Carvalho, 2017; Pauli & Sell, 2019); connecting long-term to specific projects (Sandhu, Al Ameri & Wikstrom, 2019), among other activities.

In the scope of PBB, the performance of PMO is still a little nebulous, given the questions previously presented about the concept. For this reason and considering that the literature indicates that PMO must play roles appropriate to the demands and structures of the businesses in which they are implemented (Hill, 2004), it is believed that the model resulting from this research will contribute to the theoretical gap verified and to the visualization of a set of roles by which PMO can specifically contribute to the needs of PBB.

The subsequent section presents the methodological procedures adopted to prepare the proposed model.

Methodology

The realization of the literature review is fundamental to understanding the amplitude of the research field, develop conceptual bases for future studies, and identifying themes that lack further investigation (Paré, Trudel, Jaana & Kitsiou, 2015). The undertaking of said activity in a systematic way allows, through a structured and transparent process, that the obtained results are verified, which increases their reliability, and so their relevance (Ridley, 2012; Tranfield, Denyer & Smart, 2003).

In this study, the adopted protocol is an adaptation of the review process defended by Costa and Zoltowski (2014) as in Figure 1. Beyond this, the instructions of Felizardo, Souza and Falbo (2014) were also considered to the selection of the papers.

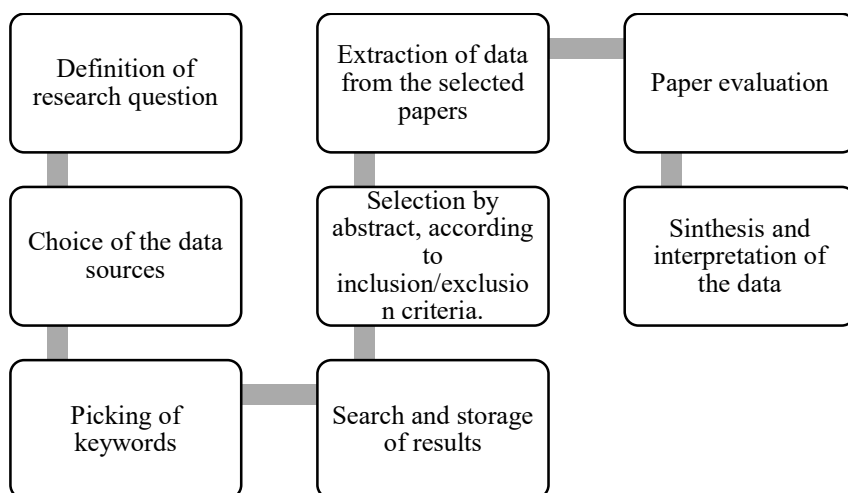


Figure 1. Building process of a systematic review

Source: Costa and Zoltowski (2014).

Considering the steps presented in Figure 1, the first activity for the review is the determination of the research question. This activity is considered the most important of any literature review as it guides all the investigation, being crucial to an adequate identification of the studies (Fabbri, Octaviano & Fernandes, 2017). That said, the question was defined as how PMO can contribute to the strategy implementation in project-based businesses?

As for the databases, the searches were conducted on the *Web of Science* and in *Scopus*, which were selected by the criteria: scope of indexed content; updating; usability; data export versatility; and quality of the search engine/results (Dieste, Grimán & Juristo, 2009).

The used keywords were defined based on the main topics approached by the research question, which were "project management office", "strategy" e "project-based business". In the search engines were used the Boolean operators AND & OR, as well as some keyword synonyms. In Table 1 is possible to verify the utilized strings and the number of papers returned from each database.

Research question: how PMO can contribute to the strategy implementation of the in project-based businesses?			
Access date: July 8, 2020.			
Filters	Description	Results	
		Web of Science	Scopus
Search string	((strategy OR strategic) AND ("project management office")); ("project-based business" AND "project management office"); ((PBB OR PBO) AND ("project management office" OR PMO)) ("PBO" AND "project management office"); (("Project-based organization" AND "project management office")); (PMO AND (strategy OR strategic))	241	404
Research areas	Business and Management	73	90
Document types	Articles	58	67
Duplicate removal in the databases		39	46
Total		85	
Duplicate removal between the databases			

Total	70
Removed after reading the abstracts	
Total	30

Table 1. Summary of the research procedure in the databases

Source: Research data (2020).

The obtained studies were filtered by research areas (business and management) and document types (articles). Besides those filters, duplicates were also removed, seeing the results in each database and comparing it. After the end of the searches, 70 articles were identified, which had their abstract read in order to identify the relationship with the topic of this investigation. The gathered information was extracted and stored in the software Zotero (v. 5.0).

It is worth to point out that the papers were analyzed directly through their abstract due to the heterogeneity verified in article titles. The 70 studies were read considering the following inclusion criteria:

- The article goes over the role of PMO in the context of PBB;
- The research goal of the research approaches PMO in some way;
- The results bring some contribution to the understanding of PMO;
- Project-based businesses were the research *locus*.

Such criteria were elaborated having in sight the multifaceted nature of PMO and the limited number of papers that specifically approach PMO in the context of PBB. It is understood that the application of those parameters allowed the obtainment of multiple perspectives over the object of study. This way, the articles in which the abstract indicated to at least two of those items were included in the sample and passed to the following steps of the review, amounting 30.

At the end of this step, due to methodological convenience, there was an alteration in the order of the steps proposed by Costa and Zoltowski (2014), considering that the quality evaluation of the articles was made before the data extraction.

The quality analysis of the selected articles was conducted considering the Brazilian evaluation of the Qualis Journals, and deleted articles published in journals with a classification lower of A4. This criterion was adopted due to the identification of national articles, whose journals lack international level evaluation. With that, 9 articles were removed from the sample. In this process, it was not possible to access two articles, which were also removed from the sample. Therefore 19 articles remained in the review, which are presented in Table 2.

ID	Year	Title	Journal evaluation
1	2004	An exploration of project management office features and their relationship to project performance	A1
2	2007	A new framework for understanding organizational project management through the PMO	A1
3	2009	The contribution of the project management office to organizational performance	A2
4	2013	Project management office a knowledge broker in project-based organizations	A1
5	2014	Governance performance in complex environment: The case of a major transformation in a university hospital	A1
6	2014	The management of project management: A conceptual framework for project governance	A1
7	2015	The conditions factors of performance of the strategic projects in a court of justice	A4
8	2016	PMO alignment to organizational management: study of the PMO elements under the strategic, tactical and operational dimensions	A4
9	2016	The contribution of project management office – PMO in the strategic management of a communitarian university	A4
10	2016	The project management in a court of law: analysis of the deadlines for the strategic projects 2010-2014	A4
11	2017	Project offices and the federal universities: a study on project management in the context of higher education institutions	A4
12	2017	The influence of the project management office and the organizational projectized structure in the alignment of information technology projects to business models	A2
13	2018	Exploring the dynamics of project management office and portfolio management co-evolution: A routine lens	A1
14	2018	Management of public projects in the State Government of Rio Grande do Norte: analysis of project management offices and management contracts	A4
15	2018	Why and how do project management offices change? A structural analysis approach	A1
16	2019	Benchmarking the strategic roles of the project management office (PMO) when developing business ecosystems	A2
17	2019	Dimensions of knowledge governance in a multi-PMO project context	A2

18	2019	The role of the Project Management Office (PMO) in product lifecycle management: A case study in the defence industry	A1
19	2020	Performance of project management office: comparison between Brazil and abroad	A4

Table 2. Articles resulted from the systematic search in the databases, after the qualification criteria

Source: Research data (2020).

At this moment, the data extraction of the articles took place as in the extraction card, laid out in Table 3, which is the adaptation of the protocol made by Kitchenham and Charters (2007). It is possible to find the data extracted from the papers at <https://bit.ly/fichasrsl2>. After this step, the last activity of the systematic review was dedicated to the study of the data, which was made through content analysis, following the coding cycles proposed by Saldaña (2016).

Article ID		
Item	Extracted information	
1	Title	
2	Authors	
3	Year	
4	Objective	
5	Theoretical basis	
6	Methodology	
7	Main results	

Table 3. Data extraction of the articles

Source: Elaborated by the authors (2020).

It was decided for the adoption of the content analysis because this technique allows examining text materials through systematic procedures and objectives (Flick, 2015). The approach adopted in this research was composed of two coding cycles (Saldaña, 2016), analyzing the abstracts, results, and final considerations of all articles that made the research corpus.

In the first cycle, the coding occurred in an exploratory way, with an inductive perspective (Miles, Huberman, & Saldaña, 2014). The segments that were codified were those whose contents presented any contribution to the understanding of the role PMO takes in organizational scope. At the end of the process, 43 codes were created, covering 236 segments.

The second cycle was made to identify patterns in the segments of the first cycle. Besides, the codes obtained in the initial analysis were reviewed, reorganized, and compared to eliminate redundancies and those that were not directly related to the research aim. Figure 2 lists the 23 remaining codes.

	Nome			Grupos
◇	○ AIM-Knowledge sharing		8	PMOs promoting the development of an ecosystem
◇	○ AIM-Performance and PMO		4	PMO linked to the strategy and to the projects
◇	○ AIM-PMO promoting alignment		13	PMO linked to the strategy and to the projects
◇	○ AIM-PMO promoting communication		6	PMOs promoting the development of an ecosystem
◇	○ AIM-PMO supporting strategic projects		9	PMO supporting the realization of the strategy
◇	○ AIM-Portfolio management		12	PMO linked to the strategy and to the projects
◇	○ AIM-Role as part of the strategy		5	PMO linked to the strategy and to the projects
◇	○ AIM-Role of PMOs		32	PMO linked to the strategy and to the projects, PMO
◇	○ AIM-Social interactions		10	PMOs promoting the development of an ecosystem
◇	○ AIM-Trainings by PMOs		2	PMOs promoting the development of an ecosystem
◇	○ INST-Contribution of the PMO		5	
◇	○ INST-Differences in PMOs		4	
◇	○ INST-Difficulties to PMOs		7	
◇	○ INST-Evolution/Transformation of the P...		7	
◇	○ INST-Perspectives over PMOs		9	
◇	○ INST-PMO as a network		10	
◇	○ INST-PMO in the organizational environ...		8	
◇	○ INST-Points to be improved in PMOS		14	
◇	○ INST-Project management culture		2	
◇	○ INST-Relationship between project ma...		8	
◇	○ INST-The value of PMOs		4	
◇	○ INST-Thematic areas that help to comp...		4	1
◇	○ INST-Theoretical approach		3	1

Figure 2. List of codes that remained after the second coding cycle

Source: Research data (2020).

During the second cycle, it was verified that some codes brought understandings that did not go over the roles of PMO but helped to comprehend aspects related to the office's existence in the organizational scope. This way, comprehending their relevance to the purpose of this research, they were kept in the analysis seeking to justify the theoretical model to be proposed. In this sense, the codes received mnemonics that oriented the analytical process. The tag "AIM" was attributed to the beginning of the code of those that contribute to the aim of the research straightly and "INST" (instrumental) to those whose contents could substantiate the inferences made in the research.

Still in the second cycle, as a way to advance the data analysis, the codes tagged "AIM" were grouped in three previously established categories. This categorization method, named by Auerbach and Silverstein (2003) as "elaborate coding", is based on the theoretical constructs of

a previous study, while a related study is currently in development (Auerbach & Silverstein, 2003; Saldaña, 2016). In the case of this research, three PMO related propositions, based on previous scientific investigation, were chosen as categories, those being:

- The PMO supports the realization of the strategy.
- The PMO promotes the development of an ecosystem to the realization of the strategy.
- The PMO links strategy to projects.

Concerning their meaning, it is pointed that the first has an instrumental purpose, referring to how the PMO supports the realization of the strategy; the second covers the PMO's role to the creation of a favorable organizational environment to the development of the strategy, being an approach more oriented to the governance; and the third concerns the actions of the PMO related to the alignment of the projects and strategic goals.

It is pointed out that the codes tagged "INST" were not categorized because of their explanatory and instrumental nature to the analysis. The functions of those codes are the building of a theoretical basis capable of helping the construction of the comprehension that seeks with this study.

This coding process and the data analysis were made using the qualitative data analysis software Atlas.ti (v. 8.4.4). It is comprehended that the adoption of those kinds of programs provides greater quality and credibility (Souza, Dias, Silva & Ramos, 2019).

Figure 3 shows the methodological procedures executed during this investigation.

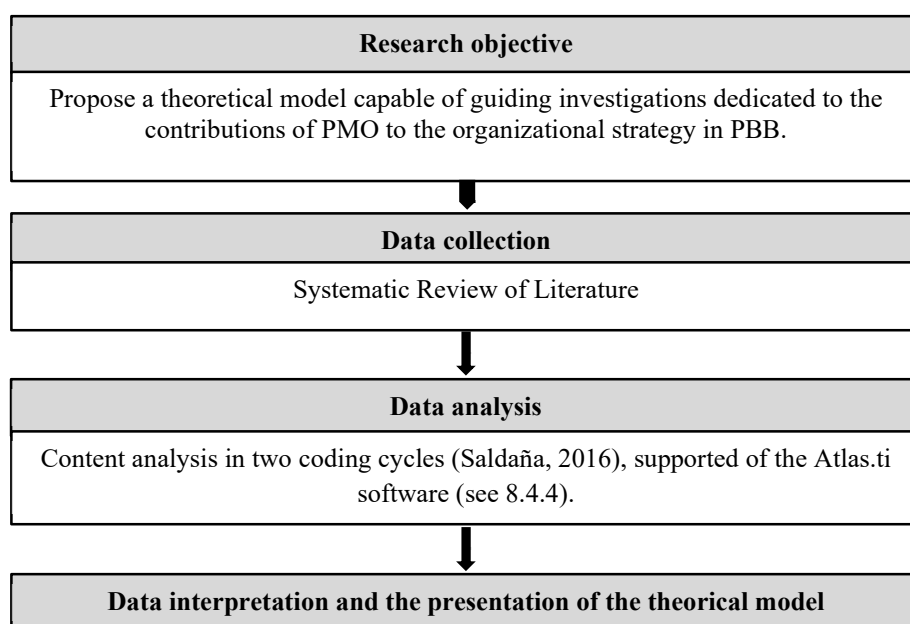


Figure 3. Methodological procedures of the research

Source: Elaborated by the authors (2020).

It is understood that this methodological design was adequate for this research, given that it allowed the obtainment of relevant and adequate data and the realization of factual analysis. In the following sections, the obtained results are indicated as in the adopted categories and codes and, in the end, the model constructed from the interpretation of the findings of this study is presented.

Results

The results are structured as follows: first, the inferences made from the codes marked as instrumentals (“INST”) are presented and, in the sequence, those developed from the codes attributed to each of the three categories adopted in the analysis are shown too. In the end, the model resulting of the investigation is presented.

4.1 Analysis of the perspectives found in the literature PMO

Analyzing the results of the papers that make up the corpus of this research, it is seen that some papers bring understandings over project management offices that do not contribute to the focus of the investigation straightly, that is, they do not explicitly point out how PMO collaborates with the strategy implementation in the field of project-based businesses. However, it is understood that knowledge coming from those articles are relevant to the holistic comprehension of PMO as objects of scientific study, therefore making their consideration interesting, seeing their capacity of basing the theoretical constructions that originate from this study.

Between the perspectives found in the papers, some have scientific character and contribute to the research on PMO. Between such, the theoretical approach proposed by Aubry, Hobbs and Thuillier (2009; 2007) is highlighted, as they point out that the constructivist paradigm is the most suitable for investigation over PMO given the complexity over project management in the organizational scope and the need to consider the role that social relationships exert over those structures. Besides this understanding, it was also possible to see the inexistence of a standard theoretical framework that guides the studies over the theme, an example of that is when Aubry *et al.* (2007) use elements of three theoretical fields, which are: innovation, sociology, and organizational theory, while Bredillet, Tywoniak and Tootoonchy (2018a) explore PMO only through the lens of change theories.

With regards to the contributions of PMO to the organizational scope, we can identify a multitude of expectations: provision of internal advice, sharing of knowledge in project management, work standardization, improvement of planning activities and monitoring, dissemination of project management culture (Siedschlag, Silva & Alves, 2016; Too & Weaver, 2014; Oliveira, Martins & Zivian, 2020; Oliveira, Jurach, Pinto, Rodrigo & Kerchirne, 2017), etc. According to Aubry *et al.* (2009), the contribution of PMO to institutional performance is the result of multiple factors that coexist inside an organization.

In general, about the contributions of PMO to the organizational context, the papers approach the offices as instruments to improving project management and increase success rates (Pontes, Oliveira & Vasconcelos, 2015). Beyond that, an expectative can be verified as to the structuring of the project's environment as a whole in the organization, since the alignment with senior management, passing through integration and prioritization of the projects, to their monitoring and control (Sandhu *et al.*, 2019; Siedschlag *et al.*, 2016). Furthermore, note that some studies highlight points in which PMO can perfect their activities, which point out: the form in which offices prioritize projects, the training promoted, the monitoring activities, and the mentoring initiatives made with project managers (Pontes *et al.*, 2015).

Seeing this, it infers that PMO need to be flexible and continuously alert to changes and demands from the organizational environment, so that the dynamics of the institutional context do not hurt their capacity to answer the corporative interests, but rather foster the evolution of their value delivery (Bredillet, Tywoniak & Tootoonchy, 2018b; Aubry *et al.*, 2009; Aubry, Richer & Tremblay, 2014).

Table 4 resumes and synthesizes the main inferences through the analysis of the 13 instrumental codes created during the exploration of the articles that make up the corpus of this research.

Codes-Instrumentals	Sources	Inferences
Theoretical approach	Aubry <i>et al.</i> (2007); Aubry <i>et al.</i> (2009).	The constructivist paradigm is the most suitable for investigation over PMO.
Thematic areas that help to comprehend the PMO	Bredillet <i>et al.</i> (2018a); Aubry <i>et al.</i> (2007).	There is no standard theoretical framework to guide research over PMO.
Contribution of the PMO	Aubry <i>et al.</i> (2007); Aubry <i>et al.</i> (2009); Too and Weaver (2014); Siedschlag <i>et al.</i> (2016); Moura, Nobre and Nogueira (2018).	The PMO's contributions to organizational performance are multiple and characterize according to the structures and demands of the organizations in which they are implemented.
Project management culture	Oliveira <i>et al.</i> (2017); Oliveira <i>et al.</i> (2020).	PMO are presented as a tool to disseminate the project management culture.

Differences in PMO (Brazil X Exterior)	Oliveira <i>et al.</i> (2020).	While in Brazil PMO often focus on interpersonal skills and human aspects, in other countries the focus lies in objective and prescriptive tools of project management.
Difficulties to PMO	Oliveira <i>et al.</i> (2020); Pemsel and Wiewiora (2013).	Divergences between the PMO's and project managers expectancies can, over time, threaten the performance of the organizational strategy.
Evolution/Transformation of the PMO	Bredillet <i>et al.</i> (2018b); Aubry <i>et al.</i> (2009); Aubry <i>et al.</i> (2014).	The development of PMO occurs in parallel to the evolution of the organizational dynamics, considering tensions and diversities of the context.
Relationship between project managers and PMO	Pemsel and Wiewiora (2013).	PMO need to manage, monitor, and, more importantly, engage project managers in the institutional goals and demands.
Perspectives over PMO	Cruz and Scur (2016); Paton and Andrew (2019); Aubry <i>et al.</i> (2009); Dai and Wells (2004).	The PMO is an organizational innovation that requires a flexible structure to answer environmental demands.
PMO as a network	Oliveira <i>et al.</i> (2020); Aubry <i>et al.</i> (2007); Aubry <i>et al.</i> (2009).	The PMO is part of a complex network of relationships, which he influences and is influenced, structuring and restructuring projects having in sight the increase in organizational performance.
Points to be improved in PMO	Pontes <i>et al.</i> (2015).	PMO need to improve how projects are prioritized, the capacities to project managers, project supervising, and mentoring activities.
Presence of the PMO in the organizational environment	Pontes <i>et al.</i> (2015); Siedschlag <i>et al.</i> (2016); Oliveira <i>et al.</i> (2020); Sandhu <i>et al.</i> (2019).	The PMO structures the project environment, prioritizing, controlling, and integrating them into the business ecosystem.
The value of PMO	Bredillet <i>et al.</i> (2018a); Sandhu <i>et al.</i> (2019).	The PMO's value is based on its capacity to influence positive and consistently the delivery of strategic projects in the organization.

Table 4. Summary of the inferences over PMO found in literature

Source: Research data (2020).

In the following subsections, the results of the analysis in the three categories that guided the investigation are presented.

4.2 PMO supporting the strategy implementation

By analyzing the codes created in this category, it is possible to see a series of attitudes that show PMO supporting the organizational strategy. Next are presented those believed to be the most relevant to the objective of this subsection.

Initially, it is verified that PMO support the project teams, acting as consultants and training centers (Pemsel & Wiewiora, 2013; Pontes *et al.*, 2015). Beyond that, they also intermediate the communication between such teams and the governance, ensuring the alignment of the processes, deadlines, and expected costs to the projects (Siedschlag *et al.*, 2016).

Another observed point is that the PMO benefit the strategies by acting in the monitoring role. According to a study by Paton e Andrew (2019), by managing information on the projects, PMO can guarantee that their integrity will be kept and transmitted coherently, mitigating problems originated from changes in personnel or focus deviations. The findings made by Pemsel and Wiewiora (2013) contemplate this view, adding that the PMO also function as sources of information related to risks and learned lessons.

Besides, note that the PMO are the ones responsible for promoting tools that enhance the project's capability to reach the expected results and for coordinating of the projects, making them more adequate to the management's desires (Moura *et al.*, 2018; Sandhu *et al.*, 2019).

Generally speaking, the analyzed articles show that the main contributions of the PMO to the support of the organizational strategy reside in their capability to foster the continuous development of the strategic agenda of an organization, providing continuity to the phases of the projects and ensuring their integrity, that is, assuring their goals, resources, and deadlines remain unaltered during their execution. Besides, the steady monitoring of the projects is another key activity of the PMO that help to improve the organizational performance and to stimulate the strategic potential of the initiatives (Moura *et al.*, 2018; Paton & Andrew, 2019).

From the understanding of the observable factors when it comes to the support that the PMO provide to the realization of the strategy, we go to the analysis of how these structures promote the development of a favorable environment to the development of the strategy.

4.3 PMO promoting the development of an ecosystem to the strategy implementation

Between the many pointed reasons to the implementation of PMO, the paper by Dai and Wells (2004) highlights the office's capacity of structuring and promoting an environment in which project management processes, methods, and tools can be employed and continuously improved to increase the range of the strategic goals. According to these authors, PMO are capable of defending, implementing, and standardizing the project management skills at the same time that they prioritize and disseminate the business interests.

In this sense, from the analyzed articles it was possible to verify that, to promote a better ecosystem to the realization of the strategy, PMO act primarily with focus: communication, prioritization, monitoring, standardization and integration (Dai & Wells, 2004; Moura *et al.*, 2018; Pemsel & Wiewiora, 2013; Siedschlag *et al.*, 2016; Siqueira, Crispim & Gaspar, 2014). It is understood that those actions are made both horizontally and vertically - that being, between teams with the same hierarchy and between the teams and the senior management - and both inside and between the projects (Meneses, Oliveira & Vasconcelos, 2016).

Particularizing the analysis, it is seen that the communications promoted by the PMO are used to, between other purposes, disseminate the organizational goals, promote interaction among the stakeholders and the projects, raise awareness and involve the team, and disseminate knowledge and information (Cruz & Scur, 2016; Meneses *et al.*, 2016; Pemsel & Wiewiora, 2013; Siedschlag *et al.*, 2016).

As to the prioritization of the processes, PMO are understood as the organizational unit most suited to this activity (Siqueira *et al.*, 2014). It is comprehended that the prioritization covers in this case not just the selection of the projects suited to the organizational interests, but also to the continuous monitoring of the initiatives as to ensure that the strategic agenda will be followed.

The standardization of practices, principles, and processes of project management is one of the main functions of PMO. Examining the studies, it is noted that by standardizing project management activities, the PMO creates an agile and efficient context that benefits the range of the strategic goals (Dai & Wells, 2004).

As to the integration, the importance of both social interactions and relationships between projects was verified. The actions of the PMO in this sense are made to ensure the sharing of information, establish corporative links, and resolving conflict (Pemsel & Wiewiora, 2013), which mitigates problems and diminishes barriers that make it difficult to realize institutional interests.

After identifying the PMO as a support to the realization of the strategy and as a tool capable of offering the best environment to its development, it remains to be seen which aspects give the PMO the link premise that binds the organizational strategy to the projects realized by the institution.

4.4 PMO linked to the strategy and to the projects

In this last category, two aspects were highlighted: the actions pointed to portfolio management and the initiatives to promote the alignment between strategy and projects made by the PMO.

As to portfolio management, Siedschlag *et al.*, (2016) stimulate the implementation of PMO to make this activity. According to the authors, the role of an office that focuses on the execution of the strategy goes directly through prioritization, control and project management, attributions inherent to portfolio management, which increase the organization's capacity of achieving the expected results.

In other papers, it was possible to identify that linking the strategy to the projects goes through the adoption of instruments capable of monitoring the institutional performance concerning the strategic results. According to the study by Cruz and Scur (2016), it is through performance indicators that the PMO accompany the development of projects and aligns them with the organizational strategic interests. The research made by Pontes *et al* (2015), shows, in turn, that by crossing historical information and results metrics, the PMO is capable of contributing to the prioritization of the projects and their fitness to the institutional interests.

About the alignment, it is seen that the PMO exert this function by seeking to approach the executed projects with the goals defined in the strategic planning (Siedschlag *et al.*, 2016). Based on the analyzed studies, it is understood that the PMO act in different fronts to ensure this alignment, such as communication, monitoring, and prioritization (Pontes *et al.*, 2015; Siedschlag *et al.*, 2016; Siqueira *et al.*, 2014). Moreover, it was also identified that PMO play supporting roles the governance, allowing to the senior management access to precise information over the performances and perspectives of the projects (Too & Weaver, 2014).

This way, the importance of PMO to the organizational strategy can be verified, considering the relevant contributions that were identified, which make the logical basis of a model that focuses on is in helping to understand this relationship in PBB context.

4.5 Proposition of a model

Based on the presented questions, the observations made by Aubry *et al.* (2007) are reaffirmed: the PMO finds itself in an important position inside a complex network, in which

its action can highlight a trajectory that aggregates value to the institution and conducts to the success of the strategic planning.

About PBB, the set of articles obtained in this systematic review point to a lack of papers relating them to the PMO. In this sense, it was sought through, in this research, to make an approximation of the findings in literature over the contributions of the PMO to the strategies in the context of PBB. It is understood that such approach is adequate considering that all functions and activities identified are also applicable to the structures of PBB.

That said, such contributions were analyzed over two lenses: the context of PBB and the demands of the strategy implementation. After this analytical effort, it is understood that the observed elements can be applied to PBB, including like form to solve difficulties common to these models of business. For example: organizing the knowledge and the organizational development; linking the projects to the institutional strategic processes; balancing the demands of different stakeholders; and be accepted by other functional units (Hobday, 2000; Thiry & Deguire, 2007).

Concerning the strategy implementation in the organizational context, it is understood that the PMO can offer a significant collaboration to this initiative through all of those activities approach in the three previous subsections.

In this sense, based on the presented elements, as well as in the structural aspects of PBB, a model (Figure 4) is proposed to systematize the findings of this research and guide further investigation over the contributions of PMO to the strategy implementation in those organizations.

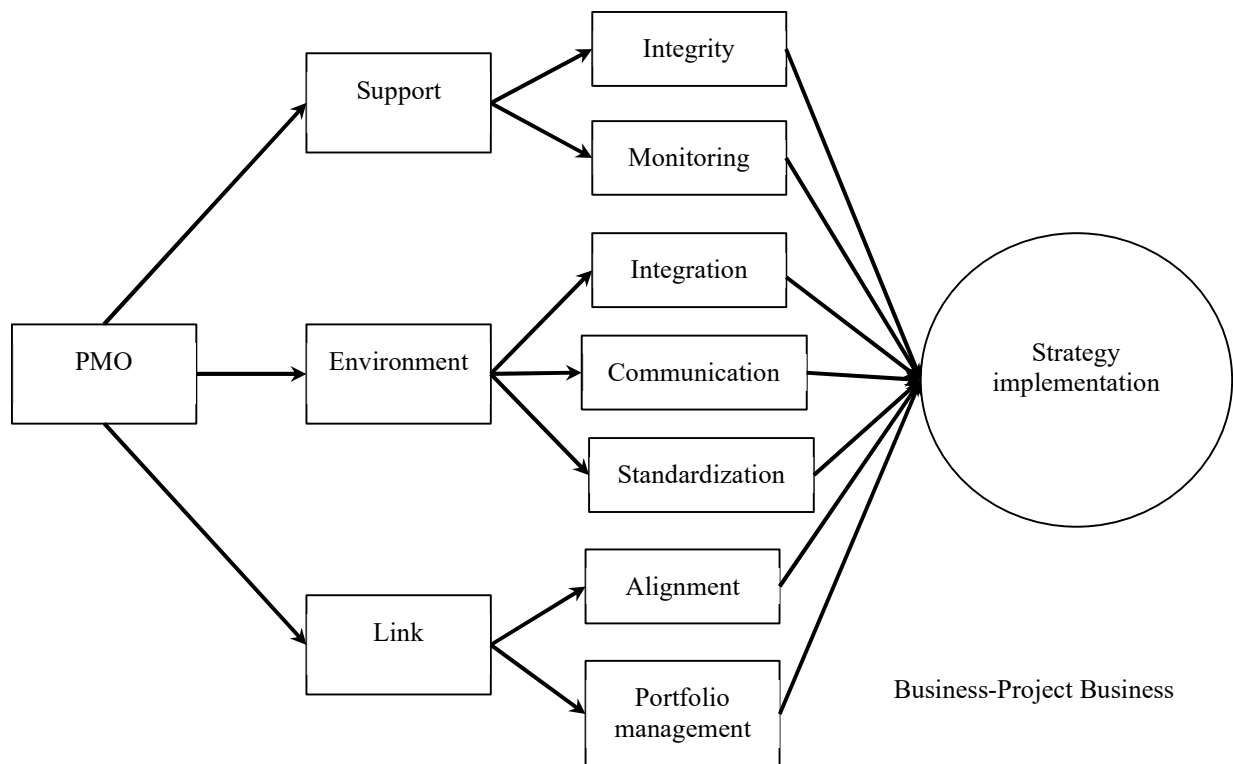


Figure 4. Proposed Model

Source: Research data (2020).

Among the contributions of the analyzed papers, seven actions are highlighted considering the context of PBB and the demands of the strategy implementation. Their distribution in the proposed model, as well as the interpretation given to each of them, follows the logic:

- **Support:** Among the actions carried out by the PMO to support the realization of strategies, it is understood that the integrity and monitoring of the projects, in terms of goals and resources, throughout their life cycle, are relevant aspects that benefit the strategy and enhance the capacity of the expected results to be achieved. Therefore, it is understood that integrity concerns the actions of PMO with a focus on maintaining projects within the scope for which they were designed, and monitoring refers to activities that observe the progress of projects, checking whether they are meeting the related indicators.
- **Environment:** to promote a proper space for the strategy implementation, it is understood that the main roles performed by the PMO are the integration of personnel, projects and different organizational units; the establishment of more effective communication, that aims to disseminate information and promote

interaction between the project teams and stakeholders; and the standardization of tools, methodologies, and processes adopted in the projects. The idea is that through these three roles, PMO contribute to the development of an organizational environment favorable to the strategy implementation.

- Link: as a way to ensure the fitness of the projects to the institutional interests, the PMO make plenty of actions seeking the alignment of initiatives as well as activities of portfolio management, such as selection, prioritization, and control of the projects. These roles would have the purpose of linking the projects carried out in the organizational scope to that established for the organizational strategy, with the alignment aimed at the comparison between the institutional objectives and those of the projects and the portfolio management aimed at identifying the aligned projects, its prioritization, and control.

Understanding that models are built to exemplify relationships and allow the comprehension of the aspects involved in complex structures (Pagani, Zammar, Kovaleski & Resende, 2016). The developed model is a proposal to the delimitation of the roles performed by the PMO that can collaborate with the strategy implementation in PBB. This way, it is evident that the model presents itself as a theoretical abstraction that can guide further research dedicated to the empirical investigation of such topics.

Final considerations

PMO benefit organizational strategies through the performance of various roles. In this research, a systematic review of the literature was carried out to identify the functions by which the PMO can contribute to the strategy implementation within the PBB context and from that propose a theoretical model capable of guiding investigations dedicated to the contributions of PMO to the organizational strategy in PBB.

The obtained results allowed the comprehension of the PMO as a flexible structure, whose many competences having the capability to influence positively in the range of the strategic goals of an organization. Among the identified initiatives, were highlighted the actions aimed at integrity, monitoring, integration, communication, standardization, alignment, and portfolio management. It is understood that, by developing such activities, the offices are supporting the strategies, linking them to the realized projects, and created a favorable environment to their realization.

It is believed that this paper cooperates with the literature by proposing a model capable of guiding future investigations that deal with PMO in the context of PBB. Such systematization simplifies and subsidizes the development of new papers. In this sense, recommends the realization of empirical studies that validate the proposed model with quantitative approaches, seeking to identify the impacts of each one of these actions, and qualitative, to know in-depth about how the activities are made and how they contribute to the research topic.

The main difficulties recognized during the development of this paper were related to the characteristics of the concepts adopted, which do not have standardization nor theoretical foundation capable of supporting with greater robustness the inferences made, so that the results obtained require, as stated, further investigations to give greater validity and support to the findings presented here.

It is considered that the goal of this study was reached, regarding the effort to comprehend which actions could be done by the PMO to collaborate with the strategy implementation in PBB.

Finally, it is pointed that, from this work, managers can reformulate roles performed by PMO - or even identify new areas of activity in which offices can operate - and project managers can better understand the performance of these structures, so that they can adjust their expectations and demand from PMO only what the offices can offer. In general, it is believed that the systematization of roles and actions of functional structures, as is the case with PMO, can be useful for organizations, because it generates the possibility to rethink them and, why not, to improve them.

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Submetido em: 27.08.2020

Aceito em: 30.11.2020