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EDITORIAL



Maria José Tonelli
Editora-chefe*



Felipe Zambaldi
Editor-adjunto*

BALANCE OF 2017 AND GOVERNANCE FOR RAE 2018

***RAE* is beginning 2018 with several changes. To reinforce the journal's international presence while also maintaining its focus on the Brazilian scientific community, we are adopting a bilingual format: Portuguese-English and Spanish-English.** This model is in line with an emerging trend of the journal; more than 50% of its articles have been published in English or Spanish and more than 40% of authors have been affiliated with institutions of higher education in other countries. In recent years, various international forums have contributed to the growth of these numbers. In 2017, the highlight was a forum entitled, "Dynamic Capabilities," which was organized by Professors Adriana Roseli Wünsch Takahashi, Sergio Bulgacov, Claudia Cristina Bitencourt, and Hale Kaynak. The forum entitled "The business of eating: Entrepreneurship and cultural politics," was organized by Professors Jeffrey Pilcher, Krishnendu Ray, Eliane Brito, and Marina Heck and received 47 articles which were contributed by 19 international authors and 122 Brazilians. This forum will be published in the third edition of *RAE* in 2018.

Based on our traditional balance sheet for the previous year, *RAE* has achieved several benchmarks that warrant celebration. We maintained our credentials with the Committee on Publication Ethics (COPE) and *RAE* is included in the best-known indexers, such as Thomson Reuters (SSCI and JCR), Scientific Electronic Library Online (SciELO), Redalyc, and Scopus and Directory of Open Access Journals (DOAJ), among others. Its impact factor (IF) in the JCR 2016 is 0.408, and it is 0.345 in the FI-SciELO 2017. In both databases, *RAE* leads the rankings of Brazilian journals in its area.

It is noteworthy that *RAE* was the first business administration journal to participate in the Semana Especial do Blog SciELO em Perspectivas | Humanas (Special Week of the SciELO blog) and contributed to a 27% increase in blog hits in August, 2017.

The Perspectives section, which was inaugurated in 2017, has been a success; it has featured discussions by important figures in the Brazilian scientific community on topics that are controversial but necessary to the construction of our field of knowledge.

Using Editorial Information of those with numbers available *online,* we can confirm the submission of 895 articles in 2017. This is 5% less than in 2016 – which is a sign that the number of submissions is stabilizing. However, the rate of rejection is still high (32%), although there was an 8% decline in comparison to the previous year. The publication index remained at 5%.

The Editorial Board of RAE-Publicações (RAE-Publications) has undergone a reorganization, and as of 2018, we have a new structure. RAE-Publications, which publishes several journals (*RAE-Revista de Administração de Empresas, GV-executivo, GVcasos, CGPC-Cadernos de Gestão Pública e Cidadania* and *JOCSM-Journal of Operations and Supply Chain Management*), now has its own Editorial Board, which is separate from the Editorial Board of RAE journal. The members of the Editorial Board of RAE-publicações are Andrea Leite Rodrigues, Eduardo H. Diniz, Felipe Zambaldi, Luciana Marques Vieira, Luis Artur Ledur Brito, Maria Tereza Leme Fleury, Martin Jayo, Tales Andreassi and Thomaz Wood Jr. The committee's aim is to provide general guidelines for all journals.

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The members of the new Editorial Board of *RAE* are Adriana Roseli Wünsch Takahashi, Antonio Moreira de Carvalho Neto, Bill Cooke, Carlos Osmar Bertero, Elena Revilla, Ely Laureano Paiva, Herman Aguinis, Julio de Castro, Lucas Ayres Barreira de Campos Barros, Mauricio Serva, Paulo Roberto Barbosa Lustosa, Ricardo Ratner Rochman, Roberto Vassolo, and Vinicius Andrade Brei, all of whom are research professors and nationally and internationally known academics in the field of business administration. These researchers are active in the areas of marketing, strategy, organizational studies, entrepreneurialism, human resources, accounting, research, and teaching in business administration. The committee's aim is to provide guidelines for the journal and support the dissemination of *RAE* in the Brazilian and international academic communities.

We wish to express our thanks to the Getulio Vargas Foundation (Fundação Getulio Vargas [FGV]) and the São Paulo School of Business Administration (Escola de Administração de Empresas de São Paulo [EAESP]) for their support of RAE-Publications in the accomplishment of these changes. We would like to extend special thanks to all the scientific editors, reviewers, and readers of *RAE*. Without the generous support of these individuals, *RAE* would not have attained its position as an outstanding Brazilian journal of business administration. We would like to take this opportunity to thank the team of RAE-Publicações, which supports all journals: Aline Lilian dos Santos, Ana Paula Coelho Soares, Andréa Cerqueira Souza, Denise Francisco Cândido, Eduarda Pereira Anastacio, Eldi Soares e Ilda Fontes.

This first issue of 2018 is substantial and contains six articles which address topics pertinent to each of the areas which, together, comprise the field of business administration: Amon Barros, Rafael Alcadipani, and Carlos Osmar Bertero discuss "The creation of the Higher Education course in Administration at UFRGS in 1963: A historical analysis"; Ignacio Ramos-Vidal demonstrates the "Determinants of inter-organizational network formation in the cultural sector"; Tatyana Karla Oliveira Regis, Cláudia Fabiana Gohr, and Luciano Costa Santos discuss "Lean healthcare implementation: Experiences and lessons learned from Brazilian hospitals"; Danilo Braun Santos, Wesley Mendes-da-Silva and Lauro Gonzalez show how "Lower financial literacy induces use of informal loans"; Atila Alves Indalecio and Luiz Antonio Joia address the topic of "Process-based modelling of the information systems resistance phenomenon "; and André Luiz Maranhão de Souza-Leão and Flávia Zimmerle da Nóbrega present "Assemblaged by desire: Potterheads' productive consumption".

The Perspectives section shares a reflection by professors Moacir de Miranda Oliveira Junior and Vicente Ferreira on the role and challenges of graduate programs in business administration in Brazil. In the Book reviews section, Eduardo H. Diniz discusses the book *Saving Gotham: A billionaire mayor, activist doctors, and the fight for eight million lives*, by Tom Farley, M.D., and Dalton Tria Cusciano and Ana Maria Malik discuss *The patient will see you now: The future of medicine is in your hands*, by Eric Topol. Finally, in the Book recommendations section, Charles Kirschbaum reviews books on the analysis of social networks and Maria Tereza Leme Fleury presents bibliographies on qualitative methodology in case studies with her students Larissa Marchiori Pacheco, Karina Ribeiro Fernandes, and Pablo Leão.

The year is off to a great start and is full of hope.

Have a good read!

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THE CREATION OF THE HIGHER EDUCATION COURSE IN ADMINISTRATION AT UFRGS IN 1963: A HISTORICAL ANALYSIS

A criação do curso superior em Administração na UFRGS em 1963: Uma análise histórica

La creación del curso superior de Administración en la UFRGS en 1963: Un análisis histórico

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ABSTRACT

This paper aims to analyze how the "Americanization" of management education took place in practice in Brazil. In doing so, we focus on one of the most important management courses in Brazil that has not yet been analyzed by previous researchers. This paper focusses on documents of the communications between American academics at the Federal University of Rio Grande do Sul (Universidade Federal do Rio Grande do Sul [UFRGS]) and their supervisors, who also worked on the bilateral agreement between Brazil and the United States. This agreement aimed to expand management higher education in Brazil, and relevant progress reports were located in the archives of Michigan State University. In analyzing these documents, we demonstrate the development of UFRGS management courses between the year in which the institution signed the cooperation agreement (1959) and the course approval year by educational authorities. (1963). This period was chosen because it helps to clearly explain the reasons that led to the delay in the implementation of courses at UFRGS, as well as the actions of representatives of the institutions in this period. Our analysis describes the course's development but also reflects on the difficulties that faced the establishment of management higher education in Brazil. We found that the lack of legislation regulating the course and also the administration profession served as the justification for barring the undergraduate course at UFGRS. We also point out several difficulties that had to be overcome for the undergraduate programs to settle from 1963 onwards.

KEYWORDS | Americanization, history of Administration, history of the Brazilian courses in Administration, organizations and history, historiography.

RESUMO

O artigo aborda a história e a Administração, e apresenta elementos sobre o desenvolvimento de uma escola específica, o que permite olhar com mais minúcia para a forma como a "americanização" da Administração se desenvolveu na prática. Análises históricas foram realizadas a respeito dos cursos de Administração da FGV EAESP, UFBA e UFMG, e este texto preenche a lacuna de falta de análises de um dos cursos mais importantes do Brasil, o da UFRGS. Analisamos os documentos inéditos oriundos da comunicação entre professores estadunidenses na UFRGS e seus supervisores, que também atuavam no acordo bilateral entre Brasil e EUA, documentos que não foram objeto de análise anterior. Discutimos o desenvolvimento dos cursos de Administração da UFRGS entre 1959 e o ano em que ela, de fato, estabeleceu os cursos (1963). Assim, foi possível não apenas narrar o desenvolvimento dos cursos e refletir sobre as dificuldades encontradas para o estabelecimento do ensino superior em Administração no Brasil, mas também identificar que a ausência de legislação que regulamentasse o curso e, também, a profissão de administrador servia como justificativa para barrar a implantação da graduação na UFRGS. Ainda apontamos dificuldades que tiveram que ser superadas para os bacharelados se estabelecerem a partir de 1963.

PALAVRAS-CHAVE | *Americanização, história da Administração, história dos cursos de Administração brasileiros, organizações e história, historiografia.*

RESUMEN

El artículo se centra en la historia y en la Administración y aporta elementos sobre el desarrollo de una escuela específica, lo que permite observar con mayor detalle la forma en que la norteamericanización de la Administración se desarrolló en la práctica. Se realizaron análisis históricos sobre los cursos de Administración de la FGV EAESP, UFBA y UFMG y este texto suple la falta de análisis de uno de los cursos más importantes de Brasil -el de la UFRGS-. Se analizaron documentos inéditos -que no fueron objeto de análisis anterior-, oriundos de la comunicación entre profesores estadounidenses en la UFRGS y sus supervisores, que también trabajaban en el acuerdo bilateral Brasil-EE.UU., destinado a la expansión de la educación superior en Administración de Empresas. Se discutió el desarrollo de los cursos de Administración de la UFRGS entre 1959 y 1963, año en que de hecho se establecieron los cursos. De este modo, no sólo fue posible narrar el desarrollo de los cursos y reflexionar sobre las dificultades encontradas para el establecimiento de la enseñanza superior de Administración en Brasil:, sino también identificar que la falta de legislación que regulara el curso y también la profesión de administrador sirvió como justificación para impedir la implantación del curso de licenciatura en la UFRGS. Asimismo, se señalaron las dificultades hubo que superar para que las licenciaturas se establecieran a partir de 1963.

PALABRAS CLAVE | *Norteamericanización, historia de la administración, historia de los cursos brasileños de administración, organizaciones e historia, historiografía.*

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INTRODUCTION

The bachelor's degree in management became the higher education program with the greatest student enrollment in Brazil, about 1.3 million, according to the Higher Education Census of 2015 (Instituto Nacional de Estudos e Pesquisas Educacionais Anísio Teixeira, 2015). Recently, several studies have analyzed the origins and development of this course of study in Brazil. Management (or Administration, as it is also called) began to be taught in university courses in Brazil in the early 1950s and gained momentum in the early 1960s. These courses were greatly influenced by the United States, where the teaching of management first gained prominence before expanding to the rest of the world (Kipping, Engwall, & Üsdikem, 2008/2009).

Cooperation agreements between Brazil and the United States were signed during the government of Juscelino Kubitschek, who was president from 1956 until January 31, 1961, when Jânio Quadros took office. However, Quadros resigned in August of that year, which led to the turbulent government of João Goulart, who was deposed by a military coup in 1964. Thus, management education developed in Brazil during a period of intense political upheaval. In the international realm, this was the time of the Cold War, which strongly influenced relations between countries and also shaped the collective ethos of the era. In this context, various bilateral agreements were created between Brazil and the United States, starting with the World War II period, when a specific time period for the development of management education was designated and implemented in Brazil.

Recently, studies have investigated both the role of the Cold War and the role of the United States in the creation of three educational initiatives: 1) the São Paulo Business School by the Getulio Vargas Foundation (Escola de Administração de Empresas de São Paulo da Fundação Getulio Vargas [FGV EAESP]) (Alcadipani & Bertero, 2012, 2014), 2) the Faculty of Economic Sciences of the Federal University of Minas Gerais (Faculdade de Ciências Econômicas da Universidade Federal de Minas Gerais [FACE-UFMG]) (Barros, 2014), and 3) the Brazilian School of Public and Business Administration (Escola Brasileira de Administração Pública e de Empresas da Fundação Getulio Vargas [FGV EBAPE]) (Coelho & Nicolini, 2014). These were the first three schools in the country to offer management courses. FGV EAESP was one of the first Brazilian schools to be fully dedicated to teaching business administration and had the direct support of the U.S. government. With regard to FGV EBAPE, the public administration program was supported by the United Nations (UN). As noted by Machado (1966), these schools emerged before the profession began to be regulated in 1965 and before the establishment of the first core curriculum requirements in 1966. Thus, the three pioneer institutions functioned in an experimental manner or through special permits. For some time, the appropriateness of applying these educational programs to the realities of Brazilian society was a matter of discussion, for example, by Motta (1983), Fischer (1985), and Serva (1992). We also note studies that are critical of U.S. influence in Brazilian management education, highlighting the pro-U.S. and pro-capitalist ideological content present in the training of administrators in Brazil (Covre, 1981). This article is inserted within the field of historical analysis concerning Brazil (Costa, Barros, & Martins, 2010).

The U.S. and Brazil have been portrayed as "development partners" (Fischer, 1985). The role of the Ford Foundation and its influence on FGV EAESP (Cooke & Alcadipani, 2015) has also been analyzed. This research found that not only was the U.S. government interested in the implementation of management education in Brazil, but that U.S. foundations also participated in this process. Archived documents from Michigan State University (MSU) indicate that FGV EAESP was designed as a central disseminator of management teaching in Brazil, an aspect that was also highlighted by Coelho & Nicolini (2013). The school sought to influence the expansion of management education in southern Brazil through UFRGS, and in the northeast through UFBA at the same time, some studies indicate that the creation of management education in Brazil occurred in opposition to the influence of the U.S. and the FGV, as shown by Barros and Carrieri (2013) in the case of UFMG. However, we have been unable to find discussions about how the expansion of such teaching occurred with the support of the U.S. government through the FGV.

Thus, this article attempts to understand the relationship between the U.S. government and the FGV in creating the business management program at UFRGS. Fischer (1985) partially addressed the subject in his research, but in this article, we deepen the analysis through consideration of unpublished documents. To that end, we will focus on the period between the signing of the bilateral agreement between Brazil and the United States in 1959 and the creation of the undergraduate degree in management at the Faculty of Economic Sciences (Faculdade de Ciências Econômicas [FCE]) at UFRGS in 1963. The agreement provided for the administrative and financial support of the U.S. and the Brazilian governments for the establishment of undergraduate programs in management. The signatory universities did not yet offer this diploma at the time. The initiative also aimed at strengthening existing courses in the schools of the Getulio Vargas Foundation (Fundação Getulio Vargas [FGV]). For our analysis, we studied communications available in archives at MSU between the U.S. mission sent to the school and the

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program coordinators. These communications were hitherto unknown to the Brazilian public. This delimitation is justified insofar as, based on the documents from the American mission, we focus on discussing the plan that its members outlined for the implementation of the program, as well as their perspectives for its development. The text contributes to the study of management history by emphasizing the relationship between UFRGS and the U.S., with FGV as an intermediary (especially FGV EAESP), within the context of the expansion of management education in Brazil. It is important to emphasize that we do not argue that this relationship is fundamental or decisive in explaining the genesis of the program that we are analyzing. Certainly, other local and national factors are equally or more relevant than the actions of the U.S. government and the FGV. However, we focus on the role of the U.S. and the FGV because the expansion of management education in Brazil through an agreement with U.S. institutions (e.g., MSU) in conjunction with a local institution (e.g., FGV) has been little explored in the literature on U.S. influence on the global diffusion of management education. Thus, it is imperative to emphasize that this is one possible version of the history of the business administration program at UFRGS, based on documents to which we had access. We are aware that it is not necessarily the most true, correct, or only version of this history.

HISTORY AND ORGANIZATIONAL STUDIES AND THE MANAGEMENT COURSE

Although historical research in the area of administration and management is not new, the field came into clearer focus with Clark and Rowlinson (2004), which gave visibility to changes that emerged at the intersection between history and organizational studies. Üsdikem and Kieser (2004) also contributed to the development of the debate by mapping the field, classifying historical works in the area into supplementary, integrative, and reorienting works. The authors point out that, in the works from the first group, history was seen as a source of data in order to formulate general theories based on a rigid notion of science. Integrative studies, on the other hand, use historical elements to enrich perspectives on present-day realities. Finally, reorienting studies see history as an object of study in itself, to the extent that there will always be connections between the past and the present.

The categories created by Üsdikem and Kieser (2004) were influential for studies published throughout Brazil. Both Vizeu (2010) and Costa, Barros, and Martins (2010) used this work as a starting point to reflect on the historical research in Brazilian organizational studies. Thus, although some may criticize the effort to classify and create frameworks that may be seen as obscuring specific variations in the currents of historical research, it is also important to recognize that this classification system contributed to greater awareness and discussion of the topic.

In the area of organizational studies, important works in the literature use history to try to create narratives of the past that contribute to greater understanding of the social and political contexts that gave rise to certain paths of development rather than others. In this sense, the works of Kelley, Mills, and Cooke (2009), for example, discussed how the political and ideological environment of the Cold War influenced the development and institutionalization of administrative knowledge that was fundamentally aligned with what were considered American values (Grant & Mills, 2006; McLaren & Mills, 2008).

Subsequently, as Barros (2014); Alcadipani and Bertero (2014); Kipping et al. (2008/2009); and Kipping, Üsdikem, and Puig (2004) discuss, U.S.-style management was actively exported to other countries as a strategy for influencing a pattern of economic development in opposition to Soviet-style communism, especially after the late 1950s. Then management courses in the U.S. went through a period of consolidation in response to the publication of two reports in 1958 that discussed the state of higher education in the area. These reports proposed changes that were intended to move the field toward what is considered academic knowledge, as opposed to practical or vocational knowledge (cf. Barros, Cruz, Xavier, Carrieri, & Lima, 2011). A text prepared for the Carnegie Foundation, *The Education of American Businessmen: A Study of University-College Programs in Business Administration*, was written by Frank Pierson, and the Ford Foundation report entitled *Higher Education for Business* was authored by Robert Aaron Gordon and James Edwin Howell.

At the same time, business management practices were seen as an exportable product that could help to weaken the "communist threat" posed by the Soviet Union in the context of the Cold War. The clash between the two powers at that time influenced the debate and development of management education (Cooke & Mills, 2008; Grant & Mills, 2006; Kelley et al., 2009; McLaren & Mills, 2008), resulting in a tendency to silence the influence of the left wing in this area of knowledge (Cooke, 1999).

The establishment of new educational programs in business administration, especially in countries considered to be in play in the Cold War struggle for dominance, was seen as an instrument that could help expand U.S. influence, to the extent that the epistemology underlying this area of knowledge is marked

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by elements that reflect aspects of U.S. culture and ideology (Grant & Mills, 2006; Kelley et al., 2009). Several countries received direct and indirect U.S. support to establish or shape the courses in business management and administration, among them Brazil.

In Brazil, the first degree program in management that was established with support from the U.S. and through the UN was the EBAPE. It was linked to the FGV and created in 1952. (Machado, 1966). In the same year, a higher education degree in public administration was also created at the UFMG, which received support from an American consultant in 1953 (Barros, 2014; Barros & Carrieri, 2013). In 1954, the business administration program at the School of Business Administration of São Paulo (EAESP), also linked to the FGV (Alcadipani & Bertero, 2014), was established with strong support from MSU-Michigan State University and the Ford Foundation.

As Alcadipani and Bertero (2014) point out, this school was intended to be used as a base to propagate American-style business administration – or *managerialism*, according to Foster, Mills, and Mills (2014) – according to the terms established in the bilateral agreement between Brazil and the United States (Fischer, 1985), under the auspices of the Point Four Program begun by Harry Truman in 1949. Thus, technical support was provided to countries of the "Third World" to help them avoid the "communist threat." Under the agreement, management programs would be created at the UFRGS and the Federal University of Bahia (UFBA), which would have the support of both MSU and EAESP. Prospective faculty members to be appointed by their universities completed a training period in São Paulo as preparation for enrollment at the Michigan State MBA.

The establishment of these higher education programs was part of a wider strategy of disseminating U.S.-style management practices worldwide and particularly in Brazil. These schools were intended as hubs for the dissemination of business administration in their respective areas of influence, a role that would also have been "formally" taken by UFMG, had the school not been kept from participating in the Agreement on Special Technical Services between Brazil and the U.S. at (Barros, 2014).

Thus, it is possible, with some degree of certainty, to speculate why the UFRGS was chosen to be one of the schools to participate in the bilateral agreement between Brazil and the U.S. (Alcadipani & Bertero, 2014). They point out that the U.S. intention was to make participating schools centers for the diffusion of knowledge about business management and administration. The chosen institutions were located in the capitals of states that made large contributions to Brazil's GDP and were the largest cities in the country at the time, São Paulo, Rio de Janeiro, Recife in declining order (Instituto Brasileiro de Geografia e Estatística [IBGE], 2010).

However, the federal universities of Belo Horizonte and Recife ended up not signing the agreement, despite participating in the negotiations (Barros & Carrieri, 2013). São Paulo and Rio de Janeiro had already established participation with the schools linked to the FGV. Thus, only Salvador and Porto Alegre signed agreements (which were specific, although they fell under the same extension project. The University of Bahia opted to create a school of management, while in Porto Alegre an undergraduate course in management was created in the College of Economics, since its directors were afraid to take a more definitive step toward the creation of a full degree program as long as there was not yet a law regulating management as a profession.

THE USE OF DOCUMENTS

Interestingly, in one of the documents analyzed, there is a consideration that must be taken into account with regard to attempts to reconstruct the past (which is always problematic):

> I must say, too, that if our letters on administrative details seem to be too formal, and even harsh, it is because our official correspondence becomes part of the documents subject to review at any time by the auditors of the contract and the offices [of the International Cooperation Administration] ICA/Washington. It is not only our letters that become part of the archives, but also those that come from the agents "in the field." (Austin, 1959, n.d.)

Here, Austin explains that the content of letters must meet certain standards of formality because they will be filed serving as a basis for narratives that will be built on the topics they cover. In this sense, we are aware that the documents used to generate narratives should be viewed with some caution, in that they were based on official documents that were considered fit to serve as records of actions carried out in the middle of the last century, and which complied with certain rules of formation and discursive enunciation, as discussed by Foucault (2008). The archives, in this sense, say something directed at someone from a finite, though perhaps inexhaustible, set of possibilities (Foucault, 2008; Stoler, 2009).

This, of course, does not invalidate the effort required to interpret the data and construct the narrative itself, but it is

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an aspect that needs to be explained so that both the authors and the reader do not lose sight of the fact that this is not a definitive perspective on the development of the UFRGS program in business administration. The archives, as noted by Schwartz and Cook (2002), exert power over the potential ways of telling a story, which augments the need to inquire into not only the remaining documents but also the institutions where they were kept. In this case, we must reiterate the need for caution about the picture that emerges from the data, given their one-sidedness (all of the documents were produced by foreigners, generally Americans), and the regulations that controlled the production of the texts, as suggested by Austin (1959) in the passage quoted above.

The documents analyzed here were collected from the MSU files, including the minutes of meetings held by the American commission that headed the program in Brazil, which was based at the EAESP. After being selected from the MSU files, the documents were photocopied and grouped by theme. Subsequently, they were read three times by a different researcher than the one who collected and grouped them: an initial, superficial reading to gain knowledge of all the information provided; a second reading to mark the most important points; and a third reading to regroup them based on logical narratives that emerged, namely,

- Preparations for the arrival of the professors: the preparation questionnaire, the visa application and car permit, the curriculum of Oberg and Nordstrom, the consulting invitation extended to Oberg.
- Influencing the actors: meetings with entrepreneurs, workshops, and course programs; translation of books and dissemination of new teaching techniques; conferences with the departments of economics.
- Difficulties encountered in the establishment of the program: lack of a curriculum and the dean's concerns about establishing a program that would exist outside educational legislation; the workload of students; the language and adaptation difficulties of American professors; Brazilian professors returning from training with no assured position; criticisms of various aspects of the program in the U.S.;
- Other topics: the preparatory program at the FGV; the other schools participating in the agreement; visits to the U.S. by school directors.

As will be apparent, not all of these topics will appear in this article. All documents were in English and were translated into Portuguese. Documents with no definite authorship were attributed to the organization that produced them or are quoted based on their title. It should also be noted that, among several documents that dealt with the establishment of the program at UFRGS, some stood out due to the extent and quantity of information relevant to our work. These were the *Report on the Conference of Economics Faculties in Brazil*, the *Progress Report* (1959), the *Annual Report (July 1958 – June 1959)* submitted by Winston Oberg in November 1959, the *Semi-Annual Report (July – December 1960)*, presumably written by Oberg, and *Professor Winston Oberg End-of-Tour Report* submitted to the ICA by Winston Oberg on September 25, 1961. In the documents, the main voices are those of Winston Oberg, the first American professor to coordinate the activities of the agreement in Porto Alegre; Ruben Austin (Dean of the College of Business at MSU); and Claude McMillan, head of the mission based at EAESP. Another name often mentioned is Pery Pinto Diniz da Silva, UFRGS vice president and also dean of the College of Economics.

A NARRATIVE FROM THE DOCUMENTS

Founded as a School of Commerce in 1909, the current College of Economics at UFRGS is one of the oldest in Brazil (Fonseca & Carrion, 2006). As will be discussed later, this may have influenced economists' political power. In 1934, the institution came to be called the College of Economics and Administration, possibly due to regulation of the program of higher education in administration and finance, which it began to offer that year. When the federal government terminated the program in 1945, the college began to offer courses in economics, accounting, and actuarial sciences, in accordance with regulations established by the federal government (Barros, 2014). In 1950, on the occasion of the federalization of the university, the college assumed its present name: The College of Economic Sciences (Fonseca & Carrion, 2006). The need to establish a core required curriculum for a business administration program had already been discussed as early as 1954. The need for recognition of the career title of "administrator" as a profession was also discussed.

Thus, in 1958, when FCE-UFRGS entered the agreement providing for the establishment of a university degree in administration, the college was already considered a well-established institution. For more than ten years, it had been offering higher education programs in compliance with the most recent legislation. This is significant because it is possible that this position influenced the willingness to offer a program of higher education in business administration in the college,

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considering that – according to the sources consulted – much of the opposition to the new program came from professional associations of accountants and economists, and from professors of those fields within the school.

This differentiates the experience of FCE-UFRGS from that of other schools that already offered administration programs at the time: the schools linked to the FGV were established with an administration program from the start, whereas the programs offered by UFMG had been planned at least since 1950 (Barros, 2014). In turn, UFBA, which also signed the agreement, opted to establish a higher education program in business administration in a separate school, apart from the other schools within the institution. This school was formally established only in 1962, although the first group of students was admitted in 1960 (Barreto, 1999; Machado, 1966).

Before the first professor actually arrived in Porto Alegre, an American professor traveled to the city to speak with the dean of the college, Professor Pery Pinto Diniz, to discuss establishing an undergraduate program in administration in the city. The visitor, identified as Professor Charles Lawrence, left with a positive impression of the meeting and with great hopes for the progress of the agreement. On April 10, 1959, Claude McMillan, head of operations in Brazil, wrote to Austin stating that four UFRGS professors had been recruited and were at EAESP to initiate their master's studies. In addition, McMillan pointed out that some short courses had been designed to be taught at UFRGS. These courses, as will be seen below, took on great importance, at least before the undergraduate degree in administration was created. In this same message, McMillan (1959) asked Austin, coordinator of the cooperation project, to obtain more information about the program between the University of Chicago and the University of Santiago, which allowed the latter to establish an institute for management education, with openings for consultants. The interest of the Brazilian schools in the subject was due to the difficulties they had encountered in maintaining full-time professors.

The professors assigned to the "mission," as the bilateral cooperation program was called, underwent a selection process that involved asking many questions, with several of them referring to the preferences and political choices of the candidate, as well as their previous activities. In the case of Porto Alegre, we identified the files of two professors who came to Brazil to serve as professor-consultants. The questionnaire, called *Security Investigation Data for Sensitive Post*, and the *Application for Federal Employment* form asked about previous duties and, specifically, whether the applicant had belonged to the Communist Party or any fascist or communist organization. From reading these documents, we found that the two professors had worked in the United States Air Force: Winston Oberg (who arrived in 1959 and was responsible for the field of business administration) and Adolph Grunewald (who was nominated to come to Brazil in 1961, when he assumed Oberg's post), who appears little in communications to which we had access. Unfortunately, we did not find information about Professor Joseph Nordstrom, who assumed Grunewald's post in 1963. Another professor who came to Brazil, but who did not sign any documents we could access and whose questionnaire and application form we could not locate, was Professor Alfred G. Obern. Professor Obern came to Brazil in 1959, shortly after Oberg, and was responsible for the field of public administration.

Professor Winston Oberg, who was the first to reach Brazil with Porto Alegre as his destination, chose to land at Santos in order to travel on the same ship that transported his car. Apparently, there was a long negotiation related to the total cost of travel for Oberg and his family. Oberg came to Brazil in 1959 and went initially from Santos to Sao Paulo, where he stayed for three weeks at EAESP before traveling to Porto Alegre with his wife and son. It is possible to detect from the messages exchanged that most of the time, Oberg was more abrupt than the counterparts with whom he corresponded. This may have been a sign of irritation, but it is consistent with other messages sent by the professor, often with clearly defined positions with respect to matters relating to the mission.

One example of this is Oberg (1961), who stated in one of the reports sent to the United States Operations Mission (USOM) that fellowship grantees who went to California had an "unhappy experience." In response, the USOM states that "Professor Oberg may have misunderstood the comments made by Dean Diniz, since all the conversations with the dean are conducted in Portuguese" and "Professor Oberg has no responsibility or authority to comment on the public administration area of the university."

Oberg understood that the main purpose of his stay in Porto Alegre was to establish an undergraduate degree program in business administration. However, he claims to have faced resistance from faculty members, although he did not give details about what those objections were, apart from the fact that the program was not regulated by the federal government. Oberg set up workshop events, called *jornadas*, that were short courses offered to business managers from the region of Porto Alegre. These events would now be referred to as "executive education activities." At the same time, he tried to persuade the dean of the college, Diniz, not to oppose the implementation of a program that was not yet regulated, due to the importance of this type

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of education for economic development. Claude McMillan says that, although Professor Oberg did find a receptive environment,

> [i]t became clear in our operation in Porto Alegre that our Brazilian counterparts would actually "put us on trial" to prove that the changes we propose to implement are appropriate for Brazilian education and superior to traditional concepts currently used. (McMillan, 1960, n.d., loose translation)

Oberg notes the following in his final report:

> The first problem, and one that was not resolved for several months, was to develop a close relationship with Professor Diniz as a basis for constructive advice, so that he would seek me out for advice about the development of the program, the curriculum, and similar issues, and at the same time that he would act in accordance with such advice. At first, the language barrier was an especially acute problem since Diniz had little command of English and I arrived with no knowledge of Portuguese.
> However, I gradually learned the language to the point of being able to dispense with the interpreter while speaking with Dean Diniz, and from that point on – particularly after the first of a series of seminars given on weekends for executives, which proved to be a spectacular success – my relationship with Diniz improved rapidly. (Oberg, 1961, p. 3, loose translation)

It is interesting how, in the words of Oberg, he hoped that Professor Diniz would "follow his advice," although he also considered Diniz to be his supervisor. Oberg's position suggests that he believed he would exert decisive influence over the course of implementation of the business administration program of the College of Economics at UFRGS, which had received U.S. $200,000 from the Ford and Rockefeller foundations. Moreover, Oberg (1961) points out that organized workshops served to bring the university into closer connection with the business community, which made it easier for graduates to find employment as business managers. These courses also encouraged local entrepreneurs to donate money to the college. In this sense, building stronger ties with business and company managers was considered the most successful of the undertakings that Oberg (1961) initiated. The second professor assigned to the program, Joseph Nordstrom, came to Porto Alegre in September 1960. He was also dedicated to persuading the business community and faculty from other departments at UFRGS colleges of the importance of establishing an administration program at the university (Oberg, 1960).

One of the major events that occurred during the period we looked at was the first National Conference of Economics Departments in Brazil, based at FCE. The conference was attended by representatives of 28 economics departments in Brazil. Among them were the FGV schools (EBAPE and EAESP), the economics department of UFMG – which initiated the activities of a public administration program in 1953 and of a business administration program in 1955 (Barros, 2014) – the Federal University of Bahia – which had established a school of management two months earlier (Barreto Filho 1999) – and the Federal University of Pernambuco (UFPE) – which established a management program in 1959, despite having not entered the cooperation agreement (Barros & Carrieri, 2013; Machado, 1966).

The fact that different schools chose to deal with the legislation regarding higher education in different ways was a source of great confusion for the American professors:

> Different universities in Brazil behave differently with regard to the importance of conducting their various activities in accordance with the Ministry of Education's requirements, to the extent that the Ministry interprets and applies relevant legislation to the federal universities. Given that the relevant factors in the Brazilian environment are largely political in nature, members of the American Mission who are linked to the Expanded Program are dedicated mainly to advising their Brazilian counterparts in terms of academic affairs in anticipation of new programs and in dealing with administrative matters with regard to the training of potential professors of Business Administration. (Oberg, 1959, 1, loose translation)

Besides the schools and colleges, Oberg (1959, pp. 9–11) states that about 50 other entities also participated in the conference. These included institutions (such as the office of the Point Four Program), government agencies, and professional associations of economists and accountants. Oberg had arrived in Brazil only a few weeks earlier. He notes that among the topics under discussion was the attempt to define the area of professional expertise of graduates from the economics and

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accounting programs. According to Oberg, although some of those present considered it appropriate for administration to be a discipline within the curricula of economics and accounting, with the idea that this would be a sufficient way to meet Brazil's needs, there was near consensus among scholars that it was necessary to wait for public and business administration programs to be regulated by law. However, such regulation was met with opposition from professional associations. In Oberg's words,

> In developing a business administration curriculum at the undergraduate level, progress has been blocked almost completely during my two-year stay. In November 1959, Dean Diniz convened a conference of the economics departments of several Brazilian universities. [...] Diniz asked me to work on a curriculum recommendation for business administration to present to this group. Some other curriculum suggestions were made by people from other universities. However, there was active opposition on the part of associations of economists and accountants, who were against *any* curriculum change. (Oberg, 1961, p. 4, emphasis in original, loose translation)

All in all, as attendees at the conference were not successful in achieving any degree of agreement on the establishment of a curriculum for undergraduate courses in business administration, the leaders of the FCE at UFRGS continued to resist the implementation of an undergraduate program. Oberg points out that

> Diniz was not willing to proceed with the implementation of an undergraduate degree program without having legal support for the establishment of a curriculum. So, for all intents and purposes, all planning for the development of the curriculum for an undergraduate degree in business administration stopped at the end of 1959 [after the National Conference of Economics Department rejected an initial curriculum proposal, developed through discussions with economics departments at the university] and did not resume until 1961. This resumption was due to the decision by the association of economists to develop – within the economics curriculum – an area of concentration [a major] in business administration. (Oberg 1961, p. 3, loose translation)

In order to achieve this, the president of the association of economists sought support from UFRGS in the figure of Dean Diniz, who asked another member of the U.S. mission, Joseph Nordstrom, to make suggestions. Still, Oberg (1961) was discouraged about the possibility of establishing an undergraduate course in administration at the university prior to approval of a curriculum, although he believed that, for graduate courses and on issues related to development administration, the prospects were better.

When the first step toward the development of a core curriculum was taken at UFRGS, the U.S. consultants were disappointed. The professor chosen to prepare the initial plan was not one of those who had studied in the U.S. (Oberg, 1960), suggesting resistance within the UFRGS to the role played by the U.S. in the expansion of business management/administration education in Brazil. The reports make further mention of laws under discussion in Congress that would expand the autonomy of universities to create new course programs or that might even open the possibility of including administration as a regular course program within the "inflexible" curriculum model in place in Brazil. The professors from MSU and from the International Cooperation Administration (ICA), in general, expressed their frustration at having failed to implement a program – either within the economics department at UFRGS or as a separate college as was done in Bahia – even after the bilateral cooperation program had been in place for two years.

Another difficulty was related to job placement of professors who were trained in the United States. For the course program to be established, it was understood that it was necessary for faculty to be prepared to teach administration or, more properly, "management." To this end, they were sent to EAESP and thereafter for a period of time to MSU, where they were enrolled in the master's degree in public administration. After the first group of professors went, there were difficulties in sending new candidates to EAESP. One of the possible reasons for this difficulty was the fact that the newly trained professors did not have a guaranteed position at the school, especially because there was no administration degree program where they could be placed. So they were relegated to temporary teaching positions, which was the rule at Brazilian universities at the time. Oberg (1961) points out that the lack of U.S.-trained professors might also have been due to their accepting employment outside the university. These professors were included on the payroll as part-time professors for just two months after their return, although they also received back pay. In addition, one

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of the four teachers who were part of the first group to go to the U.S. was hired by the airline *Varig*, with the consent of the leadership of the university. This situation was indicative of the precariousness of the academic profession in Brazil in 1960 and even later. It was only in that decade that full-time positions began to be available in the federal system.

Some of the returnees complained of having had unfortunate experiences in the U.S., which was noted by Oberg as one of the possible causes for others' reluctance to seek training abroad. Oberg says,

> When I arrived in 1959, Dean Diniz chose six men [*sic*] to go to Michigan State University to do graduate studies. Since then, not one person has been selected to go to the United States to do graduate work. [...] In part, Diniz's reluctance to send more people to study is due to the unfortunate experience had by the people he sent to study public administration. [...] they said the effort was not worth it and Diniz said he would not send anyone else to the United States to pursue a graduate degree in Public Administration. He does still show interest in sending candidates to study business administration and in sending other – more senior – professors for short visits or training at EAESP. [...] of the four [professors] who returned, none is particularly above average. (Oberg, 1961, p. 5, loose translation)

This analysis by Oberg (1961) provoked a strong reaction from the United States Operations Mission (USOM, 1961), which, in an institutional response, states that after formal written consultations with MSU and the University of Southern California (USC), they believe that Oberg misjudged the situation. According to USOM, this misunderstanding may have resulted from comments made in Portuguese and misinterpreted by Oberg, who, according to the office, had no authority to comment on the graduate programs of the universities. In addition, in the document called *Chief of Party Comments*, Oberg is criticized by Milton Dickerson, also a MSU mission member:

> Perhaps Professor Oberg found himself to be at the service of Dean Diniz and therefore was unwilling to aggressively insist on proposals to which Diniz was opposed. However, I [*chief of mission*] do not think any other approach would have been more successful. (Dickerson, 1961, p. 2)

A reply from USOM (1961) points out that Diniz actually nominated three fellows to go to the U.S. and that the lack of prior nominations was due to the Brazilian government restricting funds for international travel. There is some indication that the agreement was facing difficulties because the Brazilian government was not releasing the agreed-upon funds, which made it necessary for the EAESP, UFBA, and UFRGS to seek agreements on a case-by-case basis every time resources had to be expended (Oberg, 1960). This situation bothered the U.S. operators, who stated, in any case, that given the conditions the project made satisfactory progress.

According to USOM (1961), representatives from USC talked on three occasions with Diniz and raised grievances due mainly to the low quantity of funds received by fellowship grantees. Other points raised were the amount of work and the level of English required at USC, as well as the idea that Brazilians would be better served by attending a more specialized training program rather than the more general training offered by the U.S. institution. USC representatives understood that racism was also a problem that hindered the ability of the Brazilians to take full advantage of the program.

> Funds are unsuitable for the Los Angeles area and fellowship recipients understand that USC demands an excessive workload, the students. Other hindering factors would be level of English in the face of difficult written and oral examinations required by the university, racial discrimination, poor academic performance during the first two semesters by a small number of fellows including one from Rio Grande do Sul who fortunately managed to improve his grades later on. Ultimately, and in some ways most difficult of all, was the conflict between the Brazilian tendency to seek very narrow specializations and the diploma program at USC, which has a broader focus and included social sciences as part of the public administration program as well as the standard requirements of public administration. (USOM, 1961, n.d., loose translation)

Oberg (1961) expressed his concern because the dean did not send students for preparatory training as agreed. Diniz agreed to send new students through 1961, but he refused to send two candidates who had asked to go to the U.S. and who had caught the attention of the American professors. Oberg (1961) also indicates that another problem was due to the fact that the professors who were trained in the U.S. were not particularly

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"outstanding," and they lacked strong initiative. Although Oberg affirmed that perhaps there were very high expectations very early on, he understood that the foundation of a high-quality program had not yet been formed, as the professors "were simply not as capable as we hoped they would be, or as capable as they will have to be in order for this to become a good Business Administration school" (Oberg, 1961, p. 4, loose translation).

It may also have been that students were not sent by Diniz because there was no administration curriculum in place that could meet the regulations to form the legal basis for a program to be established. From reading the documents, it is also clear that UFRGS's main interest was to establish a business administration program, which in fact was the first such program to be implemented in Brazil, although the initial professors had been trained in Public Administration.

In addition to the difficulties related to education of the professors, a barrier was also posed by the lack of adequate Portuguese literature to be made available to the students of the administration program. Of those texts that were available, most were in English, which limited access. Thus, although about 400 books and 20 magazines had been acquired and distributed under the program, the language of the texts limited the potential for literature to be disseminated among professors and students. The American professors, therefore, had to deal with the challenge of bringing new literature in a little-known language to Brazil.

The program also sought to influence the adoption of new teaching methodologies that would shift the courses being taught in Brazil toward a more American style of education. One can imagine that the organization of the university through department chairs, which continued until 1968, may have hindered the adoption of new methods. However, documents written by the U.S. mission indicate that techniques such as business simulations, representation, and case studies began to be used by Brazilian professors in their undergraduate classes.

When the first courses in business administration were finally established at UFRGS, they were focused courses meant for mid-level and senior managers. There were also courses for managers who had completed a higher education program. Both business administration programs were seen as an important step, especially as part of the strategy to persuade business and academic communities of the importance and legitimacy of establishing the degree program in administration.

The courses began after the arrival of Professor Joseph Nordstrom. EAESP professors were available to teach classes for short periods (in contrast to UFBA, which had a professor from São Paulo for one year). Apparently, the courses were well received. The intensive course for mid-level managers had 39 students enrolled from various companies. Students had classes from Monday to Friday. The first graduate-level course enrolled 35 students, although several dropped out before the end of the course.

At the end of the first semester, however, there was criticism of the program because it had public administrators and business administrators in the same classroom. Criticism focused on the fact that the course was trying to meet the needs of both groups, who did not share interests. Therefore, it was decided that the courses would be separated for the following semester in order to remedy this point of dissatisfaction among students. Professors, on the other hand, noted that, since virtually all students worked during the day, they did not have adequate time to devote to reading or to assigned extracurricular activities.

This, incidentally, was one of the most frequent criticisms made by American professors who served as advisers for undergraduate programs established in Brazil. Often it was indicated that part of the difficulty in establishing a program similar to U.S. programs was the inability to attract full-time students who could fully dedicate themselves to the program. The situation was repeated in both the undergraduate and graduate schools, especially due to the lack of scholarships or paid leave from work, respectively.

Given the reluctance of the university administration to establish an undergraduate degree program prior to the regulation of a core required curriculum by the federal government, the MSU professors arranged for Diniz and the university president to visit the United States, so that they could be definitively convinced of the possibility and advisability of establishing the undergraduate degree program. We did not find further information about the visit, but there are indications that it was focused on the area of knowledge related to agriculture.

DISCUSSION AND CONCLUSION

The information presented here is relevant to business management and administration education in general, but particularly to the history of the establishment of administration programs in Brazil. Among other things, clear cultural differences were perceived by U.S. advisers, notably with regard to the freedom to create new course programs with flexible curricula determined by universities. Moreover, the difficulty in gaining access to the necessary literature was an element that, having appeared several times in the analyses of U.S. advisers at UFRGS, was reflected in funding by the Ford Foundation for the development of textbooks by Brazilian professors.

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Despite our position on research in the field of history, which led us to approach the sources without any previously formed hypothesis, and despite the fact that we do not believe that it is possible to formulate general rules for understanding different times and groups in society, we believe it is possible and necessary to extrapolate from data to achieve something more serious. We would not say that a narrative does not have value in and of itself, due to its potential to reveal elements that had been ignored and to open the door to new questions. However, in this section, we seek to address aspects that may be common to other experiences related to the implementation of university course programs.

Thus, even if this work does not allow us to immediately discern any large-scale plans or clear outline of the major strategies underlying the support to UFRGS and how it was provided, it contributes to the establishment of a history of the field of administration and management in Brazil. Through an analysis of the communications between U.S. consultants, the coordinators of the bilateral cooperation program, and the ICA, we were able to analyze elements that would have been lost if we had used a broader lens.

A point to note was the difficulty in demanding more commitment from Brazilian students, because many of them also maintained employment, which shows that the U.S. model could not simply be transplanted to Brazil. Indeed, the notion that it would be possible to import the American model, which has been questioned by Alcadipani and Bertero (2014) in relation to EAESP, also comes up due to the time period studied. The signed agreement was not in fact put into effect during this time period, which underscores the obvious distinction between what was planned and what actually occurred, as well as the continuing need to adapt planning to account for contingencies.

The difficulties encountered by the students who went to study in the U.S. also received little attention from those responsible for the agreement. Thus, the low level of English skills and the lack of familiarity with the culture of graduate school classes (which did not exist in Brazil) led to the students' time abroad being overwhelming for some of them. This was in addition to the students feeling that they often faced prejudice. Although their complaints were dismissed as exaggerations, the concern was significant enough to keep other students from going abroad.

We also highlight the role of language as a barrier to communication between the two U.S. consultants and the professors and leaders of UFRGS. The difficulty of transmitting ideas and understanding the context in which they arose was considered by the Americans to be a problem that thwarted the success of the program. At the same time, the consultants were less able to influence the people they were dealing with due to their own failure to communicate in Portuguese. In this sense, one of the first points to note is that the language barrier was not considered in advance, since the consultants came to Brazil without speaking Portuguese and interacted with people who were not fluent in English. In addition, the Americans had little or no knowledge of the specificities of Brazilian culture, nor of the region in which they were working. Thus, the Americans' lack of understanding of the way employment worked and of the different realities faced by Brazilian students is apparent at various times in the set of documents examined.

It is also important to consider the differences that existed in the way higher education was organized. In Brazil, universities had less freedom to establish new courses. Options for careers were also limited in Brazil, where the exercise of a profession was historically regulated by the government. Thus, the governing body of UFRGS was quite reluctant to accept the idea of establishing an administration program, because neither the university program nor the profession of administration was regulated. As Barros (2014) points out, at UFMG this issue was solved by creating links between the administration program and other programs offered at the institution that already had governmental recognition.

In other words, not all the difficulties in implementing the agreement were the responsibility of the Americans. The inflexibility of the law that governed the establishment of new programs of higher education (and new jobs) in Brazil hindered the dissemination of knowledge about administration. This delayed the establishment of an undergraduate program by three years in this case. These delays occurred, although the Brazilian government signed the agreement with the U.S., which one might assume would indicate a push toward immediate approval of the course program. In addition, a financial crisis – especially with regard to foreign currencies – afflicted the Brazilian government throughout the second half of the twentieth century. This crisis contributed to a situation in which only the U.S. government was able to fulfill its share of commitments to participate in the program. We can infer the greater importance that this project had to the U.S., given that the Brazilian government often simply failed to fulfill its part of the agreements. Nevertheless, the agreements remained in place.

In the same vein, the professional lobbying associations of economists and accountants also opposed establishing an administration program in Brazil, particularly in the state of Rio Grande do Sul. In a context in which professional activity is highly regulated, preventing the emergence of new professions was seen as a way to maintain a more or less secure professional niche. Thus, it is possible to infer that the lack of specific legislation to approve the university program was related to the lack of regulation of the

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profession itself, in order to impede (sometimes intentionally) the establishment of management higher education in Brazil.

This paper has constructed a narrative of the years between the signing of the agreement by the UFRGS (1958) and the effective implementation of the business administration program (1963). It is worth noting that later, in 1973, the master's program offerings at UFRGS included both the option of a master's in business administration and a master's in public administration; these options no longer existed after 1975 (Coelho & Nicolini, 2013, p. 416). We have shown how the Americans responsible for following through with the agreement made by the U.S. encountered various obstacles to the goals they sought to achieve. It is clear that the original intent – to transplant the American model to Brazil – failed due to the inadequacy of the model in light of the specific realities of Brazil. Moreover, the idea that EAESP would serve as a center for the dissemination of management techniques (and ideology) worked only partially, since there was resistance from institutions to the idea that the role of the FGV should be strengthened. We can conclude from the discussion here that the importance of U.S. support cannot be ignored, but that it should be relativized, considering various adaptations that were made to the initial objectives of the program and that were "imposed" by the Brazilian reality.

We would like to close by proposing a research agenda. We believe that this discussion may give rise to developments in exploring how management thinking has been influenced by modifications made to allow for its adaptability and acceptance in Brazil. The assumption is that, to some extent, knowledge from the American matrix was watered down by adaptations made in Brazil, either voluntarily or involuntarily. On that point, the notion of sociological reduction (Ramos, 1996) can be useful to critically analyze the adaptation of new ideas and practices (that were generated elsewhere) to the Brazilian context, and which were also developed at the same time during which the processes analyzed here occurred. In addition, studying the example of UFRGS shows us that it will be important for research to be undertaken about the origins of administration and management programs in other federal universities that played an important role in their respective states in the diffusion of management education. Such studies can examine whether and to what extent the pattern of the presence of U.S. influence was maintained. At the same time, it would be appropriate to analyze how the core curriculum for the administration program evolved over time. It would also be appropriate to discuss which other institutions influenced the dissemination of knowledge about management in Brazil. Studies of consulting firms, business media, and multinational corporations could add to efforts to understand how management knowledge came to occupy such a vital position in Brazil.

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DETERMINANTS OF INTER-ORGANIZATIONAL NETWORK FORMATION IN THE CULTURAL SECTOR

Determinantes de la formación de redes interorganizativas en el sector cultural

Determinantes da formação de redes interorganizacionais no setor cultural

ABSTRACT

In recent years, the number of studies applying Social Network Analysis to the formation of inter-organizational networks has increased. This paper analyzed a socio-centric network composed of 32 cultural organizations in Andalusia increase. Multiple Regression Quadratic Assignment Procedure (MR-QAP) at the dyadic level, showed that perceptions of affinity (i.e., homophily) and the possibility of establishing contacts in the future, can exert influence on the establishment of informal contacts. At the internal level, an organization's brokerage position in collaboration project networks is related to the volume of business and the old in the sector. Finally, this article discusses applications for the management of inter-organizational networks in order to strengthen the implementation of public policies.

KEYWORDS | Cultural organizations, inter-organizational networks, partnerships, quadratic assignment procedure, network analysis, partnership.

RESUMEN

En los últimos años se han incrementado las investigaciones que aplican el Análisis de Redes Sociales (ARS) para estudiar la formación de redes interorganizativas. Para determinar estos factores hemos analizado la red sociocéntrica de 32 organizaciones culturales en Andalucía. El procedimiento de asignación cuadrática de regresión múltiple a nivel diádico muestra que la percepción de afinidad (i.e., homofilia) y la posibilidad de establecer contactos en el futuro influyen en el establecimiento de contactos informales. A nivel interno, factores como el volumen de actividad y la antigüedad de la organización en el sector se relacionan con el grado de intermediación de las entidades en la red de colaboración en proyectos. Finalmente discutimos los resultados para optimizar el funcionamiento de redes interorganizativas y fortalecer la implementación de políticas públicas.

PALABRAS CLAVE | *Alianzas, análisis de redes, organizaciones culturales, procedimiento de asignación cuadrática, red interorganizativa.*

RESUMO

Nos últimos anos, tem aumentado a pesquisa com aplicação de análise de redes sociais para estudar a formação de redes interorganizacionais. Para determinar esses fatores, analisamos a rede sociocêntrica de 32 organizações culturais na Andaluzia. O Problema Quadrático de Alocação de regressão diática múltipla mostrou que a afinidade entre o nível de percepção (homofilia) e a possibilidade de estabelecer contatos no futuro influencia o estabelecimento de contatos informais. Internamente, fatores como volume de atividade e idade da organização no setor associam-se ao grau de intermediação de entidades na rede de colaboração em projetos. Por fim, discutimos os resultados para otimizar o funcionamento das redes interorganizacionais e fortalecer a implementação de políticas públicas.

PALAVRAS-CHAVE | *Alianças, análise de redes, organizações culturais, procedimento de alocação quadrático, redes interorganizacionais.*

Código JEL: D85; D22.

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INTRODUCTION

Social network analysis (SNA) allows for the understanding of how dynamic systems of a complex nature are structured (Watts & Strogatz, 1998, p. 440). In recent years, we have observed an increase in studies that apply SNA to study multiple social phenomena (Burt, Kilduff, & Tasselli, 2013). This paradigm has captured the attention of researchers from various disciplines who have seen the potential of SNA in understanding the structural properties of social networks which can be understood as the relationships that establish a defined set of actors among themselves (Wasserman & Faust, 1994; Yang, 2008).

The applications of SNA in the organizational environment extend to: (a) the promotion of creativity in organizational contexts (Kim, 2016); (b) analysis of local economic development (Hermans, Sartas, Van Schagen, van Asten, & Schut, 2017); (c) the study of relations between business managers (Crispeels, Willems, & Brugman, 2015); and (d) improved coordination between agencies that provide social services (Otto-Trojel, Rundall, de Bont, & van de Klundert, 2017). In recent decades, there has been an increase in studies in the field of business management that have applied SNA (Sytch, Tatarynowicz, & Gulati, 2012). Structural analysis allows us to discover important issues for business development, such as staff turnover, interdepartmental coordination, or internal promotions (Borgatti & Halgin, 2011, p. 1168).

The evaluation of inter-organizational networks has actively benefited from the systematic application of structural evaluation models. Some of these proposals focus on establishing typologies of key players that can play different roles in the inter-organizational structure (Ramos-Vidal, 2017; Ramos-Vidal & Maya-Jariego, 2013). For their part, Tomasello, Perra, Tessone, Karsai, and Schweitzer (2014) indicate that it is necessary to identify the endogenous and exogenous mechanisms that influence the formation of inter-organizational networks. We found different paradigms that explain the formation of inter-organizational networks. Some of these paradigms highlight the importance of factors such as: (a) the acquisition of competitive advantages (Gulati, 1995; Jansen, 2017); (b) the reduction of uncertainty in changing contexts (Ma, Yao, & Xi, 2009); and (c) the transfer of information (Valente, 1995). Studies conducted by Provan, Huang, and Milward (2009) show that factors related to the reputation, integrity, and perceived influence of organizations positively affect the level of centrality within the sector.

Other studies indicate the relationship between the level of trust and the degree of formalization in trade relations (Gulati, 1995). Dyadic relations are initially characterized by a high level of formalization and rigidity due to the uncertainty associated with the lack of information, but as the relationship consolidates, the formalization is reduced giving way to ties based on commitment. For this reason, we must know the influence that the reputation, the trajectory, and the performance in the sector produce in the decision to form part of strategic partnerships, in the establishment of links with certain organizations, and in the positioning of the companies in inter-organizational networks. Next, we examine the main indicators of centrality and the effects associated with such positioning.

INDICATORS OF CENTRALITY AND POSITIONING IN SOCIAL NETWORKS

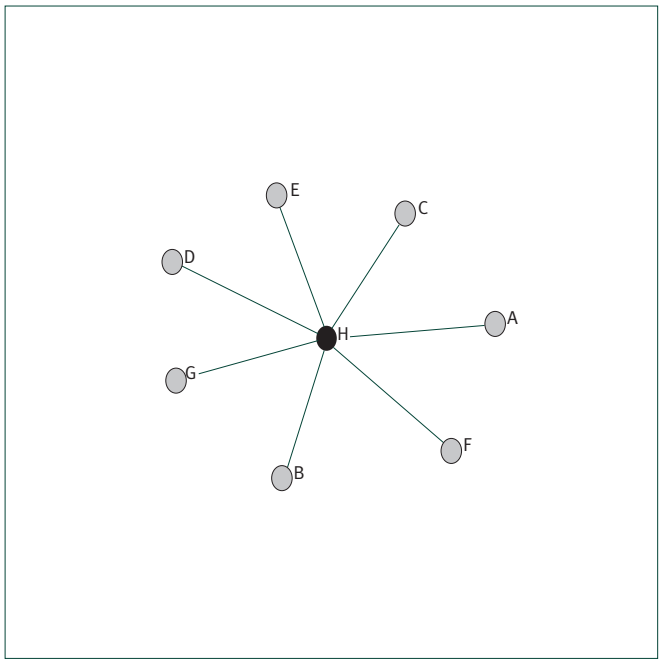
Players in central positions tend to be the most powerful and influential as they establish multiple relationships that facilitate access to different resources. According to Wasserman and Faust (1994), better-connected players have more options to meet their needs (e.g., access to information sources) than players with fewer contacts. The most extreme case of centrality in a social network is represented by the graph of maximum centralization in the form of a star (Freeman, 1979). As we can see in Graph 1, the central black node is connected to the rest of the network players; however, the other players only establish contacts with the central node and are disconnected from each other. Although it is difficult to observe this type of structure in its pure state, in practice, networks may have similar patterns.

Intermediation is, along with degree centrality, one of the most used measures to explain the prominence of players in social networks (Freeman, 1979; Wasserman & Faust, 1994). However, both indicators operate differently. According to Freeman (1979), intermediation is the degree to which a player is located on the shortest path (geodetic distance) that exists between two players. The power of players with high intermediation is defined by their ability to control communication flows.

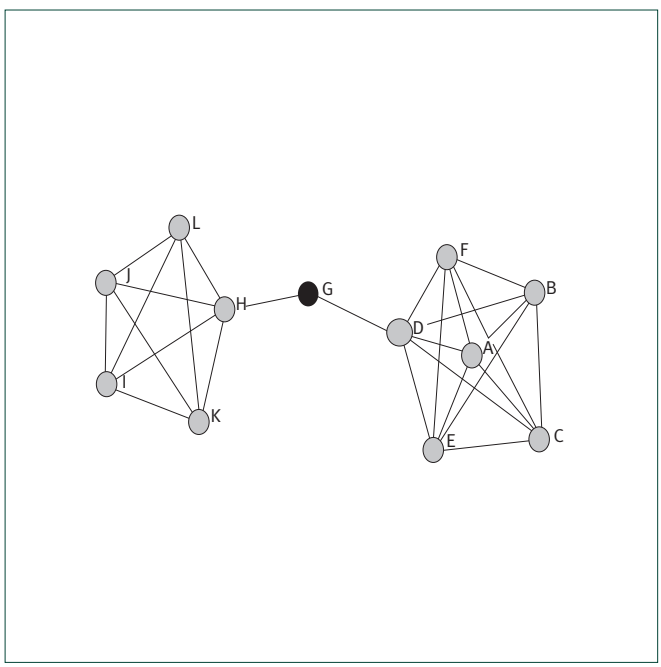
As we can see in Graph 2, the player with the greatest intermediation represented in black (G), despite not being the one with the most contacts, is the most outstanding player. This occurs because the information must pass by G to reach any of the two groups that make up the network. In this case, the G node is the one with the greatest intermediation capacity and, therefore, is the most influential, even though other players, such as node A, have more connections and have a higher degree of centrality.

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Graph 1. **Maximum centralization graph, identifying the most central node in black**



Graph 2. **Intermediation illustration, representing the player with the greatest intermediation in black**



As can be seen in Graphs 1 and 2, visualization is a tool that can be used to understand the processes that influence the positioning of the players (Freeman, 2000; Brandes, Kenis, & Raab, 2005). The better-connected actors occupy central positions, while players with fewer connections tend to be located on the periphery. The visual representation, combined with statistical procedures, allow us to identify the players who occupy positions of centrality and intermediation.

Current study

The research we hereby present is part of a study exploring multiple relationships between companies dedicated to the creation and representation of cultural products in Andalusia (Spain). One of the purposes of this research is to increase knowledge of the factors that predict the establishment of partnerships in the cultural sector. This information is relevant insofar as the characteristics of these partnerships define both the evolution of the sector and the protocols that the public administrations put into operation to manage these types of inter-organizational structures (Lecy, Mergel, & Schmitz, 2014). To this end, various types of relationships were analyzed, ranging from the mere recognition of the organization to joint participation in projects. In addition, different organizational indicators related to the internal functioning, the background, the trajectory in the sector, and the characteristics of the entities were examined. The universe of the population is formed by the organizations registered in an official census of the Center of Documentation of the Performing Arts of Andalusia. The registration in the mentioned registry is not obligatory to develop economic activity within the sector; nevertheless, it is necessary to be able to accede to public subsidies coming from the Andalusian Government. Therefore, while there are likely to be active and unregistered performing arts organizations, considering that public representational channels are the main source of income for cultural organizations, it is likely that in the census most of the organizations that develop their activity in Andalusia are registered, and that the entities external to this census are not representative. Most of the evaluated organizations were constituted from the year 2000, however there are organizations that have a longer trajectory. A quota sampling was carried out to reach a minimum representation of 50% of the companies registered in all the provinces of Andalusia.

This research deepens the knowledge of a subsector of the Andalusian cultural industry, integrated by organizations specifically dedicated to dance and theater in Andalusia. The cultural industry is considered a strategic sector because of its contribution to the GDP and its ability to generate employment. In Andalusia, the cultural industry has created more than 100,000 direct jobs and contributes 4.2 billion euros to the regional GDP

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(Sánchez & Vega, 2011). However, the cultural sector is extremely diverse and includes industries as diverse as record labels and television, so it is necessary to examine each subsector of activity in a different way.

This research is close to a sector that so far has received little attention from the scientific community, despite the fact that the production of cultural goods and services is considered of high added value and its demand is on the rise. Therefore, it is necessary to know how to structure the network of organizations engaged in the production of cultural goods, such as dance and theater, in order to determine the factors that facilitate the collaboration and joint production of cultural goods and services. A deep knowledge of this sector is necessary to strengthen the structure of the coalitions that form these companies and, at the same time, to preserve the employment and the wealth that derive from the cultural production. The objectives of the research are: (1) to describe the structural properties of the inter-organizational networks formed by the groups of the performing arts of Andalusia; (2) to show whether the perception of similarity (i.e., perceived homophily) and the projection of future relationships determine the decision to establish contacts in the future; and (3) to evaluate the impact of organizational characteristics on the positioning of companies in the evaluated networks.

METHOD

Characteristics of organizations

The sample is made up of organizations dedicated to dance and theater in Andalusia. In all, we have examined 75.6% of registered organizations. Around 50% of dance and theater companies are concentrated in the province of Seville, followed by Malaga (18%) and Granada (16%), with a smaller presence in the rest of the Andalusian provinces. The majority (80%) are small enterprises with fewer than ten employees and high staff turnover. The organizations have been operating for an average of 9.8 years in the sector (DT = 8.52), they carry out approximately 45 events a year (DT = 67), and annually invoice 139,238 euros (DT = 284,188).

Participants' characteristics

A worker was interviewed in each organization. The interviewees occupy positions of responsibility in the organization chart, and 85% of respondents are directors, managers, or distributors of companies, while 48.4% of the interviewees are women and 51.6% are men. The respondents have a mean age of 39 years (SD = 8.06) and were born mostly between 1965 and 1981. Interviewees have been working in the company for 8.4 years (DT = 8.6), have an average work experience of 18.9 years (DT = 8.9) and receive an annual remuneration of € 12,206 (DT = 10,588).

Procedure

Relational data were obtained through a sociocentric questionnaire that explored different relationships among the 32 organizations represented in the research. We listed participants with the organizations listed in the census, and then asked them to indicate which of the organizations they had recent (e.g., "Indicates the organizations with which you have had formal contacts in the last year") or possible (e.g., "Mention the organizations with which you believe there is a possibility of establishing contacts in the future") contact with. Participants could assess the intensity of the relationship in terms of contact frequency. Once the relational data were obtained, we created an adjacency matrix for each type of relationship with the Ucinet 6.3 software (Borgatti, Everett, & Freeman, 2002). We used said program to calculate the measures of centrality and to carry out the statistical analyses corresponding to the second objective. We visualized networks with the Visone software (Baur et al., 2002), an application designed to represent sociocentric networks.

After processing the relational data and obtaining the visualizations of the networks, we held a discussion group with a selection of organization representatives to investigate the factors that affect the occupation of central and peripheral positions in each of the networks, and to understand the implications that arise from occupying these positions. To do this, we apply a technique known as visual feedback that consists of: (a) showing the group the different networks in which their organizations participate; (b) letting the interviewees try to explain the elements that condition the positioning of the companies in the network; and (c) finally, consensually establish which of these elements best explain the structural configuration of the examined networks. Different studies show the validity of the qualitative contrast to interpret relational data (Hollstein & Domínguez, 2012).

To reach the first objective, we calculate the measures of centrality (degree centrality and intermediation) and cohesion (density, degree centralization, and reciprocity). In the second objective, we apply a multiple regression analysis based on the quadratic assignment procedure (Krackhardt, 1987; Worrell, Wasko, & Johnston, 2013). This technique allows for the

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comparison of matrices by using a non-parametric permutation test among the dyads that compose the network (Krackhardt, 1988). We used a technique named double semi-partialling (DSP) that allows for a better adjustment of the regression model in analysis at the dyadic level. This analysis is advisable when there are high levels of collinearity and self-correlation between the variables (Dekker, Krackhardt, & Snijders, 2007, page 572).

Exhibit 1. **Description of measures of centrality, cohesion, and attributes of organizations**

Indicator type	Name	Description	Formula
Cohesion measures	Density	It indicates the proportion of contacts that take place in a network in relation to the total of possible links. The density is expressed as a percentage of effective links on the total number of possible links.	One divides the number of links, *L*, by the number of possible arcs $g\ (g-1)$: $\Delta = \frac{L}{g(g-1)}$
	Degree centralization (Freeman, 1979, p. 228)	It indicates the degree (also expressed in percentage) in which the relationships that occur in a social network are concentrated in a specific group of players, comparing the real structure with the ideal structure in the form of a star (Freeman, 1979).	n = Number of points $C_X(p_i)$ = Average centrality of points $C_X(p^*)$ = Higher $C_X(p_i)$ = value for any point in the network Max. $\sum_{i=1}^{n}[c_x(p^*)-C_X(p_i)]$ = The maximum possible sum of the differences in the center point of a graph with M points. $c_x = \frac{\sum_{i=1}^{n}[C_x(p^*)-C_X(p_i)]}{\max\sum_{i=1}^{n}[C_x(p^*)-C_X(p_i)]}$
	Reciprocity	It shows the degree to which the bonds issued are returned to the issuers. As in the case of centralization and density, it is expressed as a percentage.	Considering that v and w are two nodes of a binary network that form a dyad, the reciprocal relationship is considered when the link between (v,w) is equivalent to the relation (v,w) As noted by Cheng, Romero, Meeder, and Kleinberg (2011, p. 51), this expression reflects symmetry and is valid for dichotomous networks

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Exhibit 1. **Description of measures of centrality, cohesion, and attributes of organizations** (continuation)

Indicator type	Name	Description	Formula
Centrality measures	Degree centrality	Composite measure that shows the times that a player has nominated (output degrees) or has been nominated (input degrees) by the other players in the network.	$d(n_i)$ = Nº of nodes with which it is connected. g = nº of network nodes (size). $C_D(n_i) = d(n_i) = \sum_j x_{ij} = \sum_j x_{ji}$, Standardized formula: $C_D(n_i) = \frac{d(n_i)}{g-1}$
	Intermediation	Examine the extent to which a player is situated on the shortest path (geodetic distance) between two players or sets of players in a network.	G_{jk} = nº of geodetic paths that join j and k. $G_{jk}(n_i)$ = nº of geodetic paths between j and k that pass by i. $C_B(ni) = \sum_{j<k}^{g_{jk}(ni)} / g_{jk}$ Standardized formula: $C'_B(ni) = \frac{C_B(ni)}{[(g-1)(g-2)/2]}$
Attributes	Seniority	Average number of years that the organization has been operating in the sector.	Not applicable
	Activity volume	Average number of events and artistic productions that the organization carries out over a year.	Not applicable

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We calculated the centrality measures and export the information to the SPSS® 20.0 program to perform hierarchical regression analyses using the stepwise procedure (Cohen, Cohen, West, & Aiken, 2003). In each regression model, the measures of centrality of the network of joint participation in projects and the network of informal contacts were used as dependent variables, and the mean of the organization's years of service in the sector and its average volume of activity and billing were used as independent variables. The selection of these variables is based on the literature that shows that individual indicators are antecedents that can determine the positioning and results of organizations in strategic partnerships (Ebers, 1999; Zajocs & Edwards, 2006). We used the visualization of graphs and the representation of attributes of the organizations to determine the influence exerted by the antecedents and characteristics of the companies analyzed in their positioning in the inter-organizational network. Exhibit 1 describes the indicators.

RESULTS

Table 2 shows the values of the indicators of centrality and cohesion in the four examined inter-organizational networks. The following are the centrality and cohesion indicators of the networks: (a) collaboration; (b) informal contacts; (c) perception of connection; and (d) the future possibility of contacts, which will be used in the regression analysis corresponding to objectives 2 and 3.

Table 1. **Results of the cohesion measures for the four networks studied**

Network type	Cohesion measures		
	Density (%)	Degree centralization (%)	Reciprocity (%)
Collaboration network	17.34	47.51	21.31
Network of informal contacts	41.09	36.43	25.13
Network connection perception	24.39	29.13	26.62
Network of possibility of contacts	28.51	36.18	13.78

Table 1 indicates that the density of networks range from a moderate 17.34% of the collaboration network and a high value of 41.09% of the network of informal contacts. Organizations often have informal contacts, but such links do not seem to be translated into joint artistic projects. If we pay attention to the density value in the networks of perception of connection and the future possibility of contacts, we will find that they present similar values. This may be due to the fact that both types of links are related, as there is a general tendency to establish relationships with players with whom common characteristics are perceived. This phenomenon called "homophily," determines, according to McPherson, Smith-Lovin, and Cook (2001) the processes of selection and influence that condition the formation and co-evolving of social networks.

Another of the analyzed cohesion indicators is degree centralization. This measure shows the percentage in which the relationships that take place in a network are concentrated in a subset of players. This indicator ranges from 29.13% of the connection perception network to 47.51% of the collaboration network. The value of this indicator shows us that there is a group of organizations that are more active in the establishment of contacts, while the rest of the organizations maintain a passive contact strategy. This phenomenon is identified in Graph 4, in which we represent the collaboration network identifying the central and peripheral structure, indicating the central nodes in black and the peripheral nodes in gray. Finally, we examine the value of reciprocity in the four selected networks. Reciprocity indicates the degree of consolidation of relationships and the level of consensus in defining the existence or absence of links (Granovetter, 1985; Baker, 2014). The greater the reciprocity, the greater the consolidation of the analyzed relations. The four scanned networks show values ranging from 26.62% of the connection perception network to 13.78% of the future contact potential network. These indicators show a moderate level of reciprocity in the different relations.

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In order to answer the second objective, we checked whether the networks of perception of similarity and future possibility of contacts influence the network of informal relations maintenance. The relevance of raising the second objective lies in identifying the role of elements such as the perception of affinity and intentionality in establishing relationships with other organizations in the sector (Baker, 2014). In Table 2, we present the multiple regression analyses based on the quadratic assignment procedure (Krackhardt, 1987; Worrell et al., 2013), following the DSP model proposed by Dekker et al. (2007).

Table 2 indicates that there is a dependency relationship between the networks of affinity perception and future possibility of contacts and the network of informal contacts. The summary of the regression model shows that both dependent variables together account for 15% of the variance of the dependent variable at the highest level of significance. This indicates that certain links, in this case intentional or perceptive, have a significant influence on the establishment of informal contacts. This implies that organizations tend to establish partnerships with entities with which they perceive that there is an affinity for their objectives and their idiosyncrasies. Therefore, in the inter-organizational partnerships in the performing arts sector, the same homophilic process is produced by which perceived players prefer to establish contacts (McPherson et al., 2001).

Table 2. **Multiple regression following the procedure of quadratic assignment, taking as independent the networks of perception of connection and the network of future possibility of contacts and as dependent the network of informal contacts**

Independent variables		Dependent variable		
		Network of informal contacts		
		Error est.	*β*	*p*
Network of connection perception		0.0693	0.3255	0.0005
Network of future possibility of contacts		0.0797	0.1304	0.0415
R	0.154**			
ΔR^2	0.153**			
No. of permutations	992			

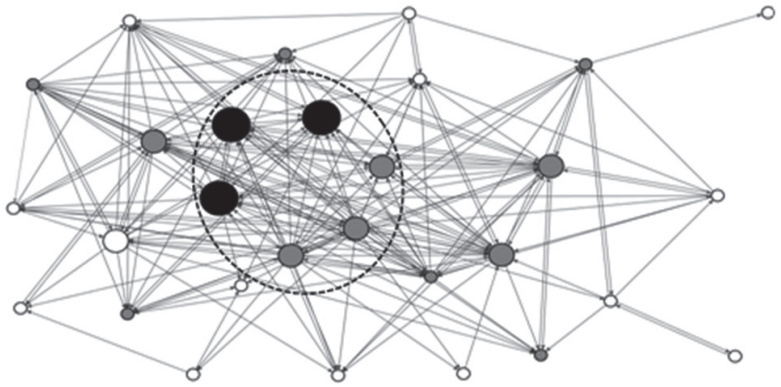
Note: ** p<0,0000

This points to the importance of background and reputation to identify preferred organizations, and for engaging in real contacts beyond the strict perception of affinity. Lange, Lee, and Dai (2011) argue that in assessing an organization's reputation, three dimensions come into play: (a) familiarity with the organization; (b) beliefs about what is expected of the organization in the future; and (c) factors that presage a favorable long-term development of the organization. In practice, we observe that the perception of similarity develops a key function in the selection of organizations that form the framework of social relations of an entity. Indeed, the only information available to managers in the formation of strategic partnerships—prior to the establishment of informal contacts—are often external references or the reputation of the company. This seems to reflect that reputation is one of the factors that defines the intention to maintain contact with other organizations in the network, beyond other factors such as the reduction of costs, the acquisition of competitive advantages, or the avoidance of uncertainty (Granovetter, 1985; Provan et al., 2009).

The third research objective is to determine the relationship between the characteristics and antecedents of the organization and the influence they can exert on different types of relationships. To do this, we first present the correlations between the study variables in Table 3 and, secondly, we perform hierarchical regression analyses (Cohen et al., 2003) using the centrality measures of the players as a dependent variable and the characteristics of the organizations (seniority, volume of activity, and billing) as independent variables.

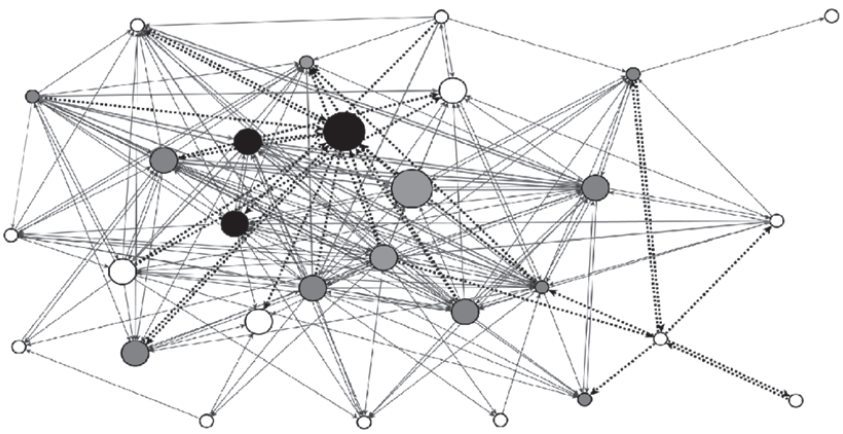
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Graph 3. Network for participation in projects indicating the seniority in the sector and the degree of intermediation



The organization seniority is represented through the node size		The intermediation level is represented through the node color	
Young entities (up to 5 years)	○	Moderate intermediation (0-0.2)	
Average age entities (6-10 years)	◯	Intermediate intermediation (0.21-0.369)	
Long-lived entities (›11 years)	◯	High intermediation (›0.370)	

Graph 4. Network for participation in projects indicating the volume of activity and the degree of intermediation



The activity volume is represented through the node size		The intermediation level is represented through the node color	
Moderate activity: up to 11 annual events	○	Moderate intermediation (0-0.2)	
Intermediate activity: from 12 to 44 annual events	◯	Intermediate intermediation (0.21-0.369)	
High activity (›44 annual events)	◯	High intermediation (›0.370)	

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Table 3. **Correlations between the variables used in the regression analysis indicating the Pearson correlation coefficient**

Variables	1	2	3	4	5	6	7
1. Activity	-						
2. Billing	0.438*	-					
3. Antiquity	0.562**	0.155	-				
4. Collaboration network centrality	0.182	0.030	0.267	-			
5. Collaboration network intermediation	0.526**	0.097	0.404*	0.632**	-		
6. Informal contacts network centrality	0.046	0.074	0.168	0.734**	0.444*	-	
7. Informal contacts network intermediation	0.019	0.055	0.111	0.466**	0.369*	0.520**	-

Note: ** p<0,001 * p<0,05

As can be seen in Table 3, the organizational attributes are intensely connected. The level of activity of the organization is positively related to the turnover and the seniority of the organization in the sector. The organizations that have a long history are those that have managed to establish themselves with greater guarantee in the artistic circuits of representation and have managed to acquire a position of reference in the sector. Long-lived organizations have greater opportunities to publicize their artistic creations with advantages to access markets and the general public. However, the centrality indicators present a modest number of significant correlations in relation to the attributes of the organization. The only indicator of centrality that presents significant correlations is the intermediation of the collaboration network. This result is in line with the proposal of Zajocs and Edwards (2006), which indicates that one of the factors that determines the success of organizations in forming strategic partnerships is seniority in the sector.

To test the third objective of the study, we performed four hierarchical regression models in which organizational attributes (volume of activity, level of turnover, and age in the sector) act as independent variables, and centrality and intermediation in project participation networks and the network of informal contacts, as dependent variables. Table 4 shows the summaries of the four regression models.

Table 4. **Coefficients and summaries of regression models**

Step	Independ. Var.	Dependent variables											
		Collaboration networks						Informal contacts network					
		Centrality (Model 1)			Intermediation (Model 2)			Centrality (Model 3)			Intermediation (Model 4)		
		t	β	p	t	B	p	t	β	p	t	β	p
1	Activity	0.997	0.18	0.32	3.32	0.52	0.00	0.24	.046	0.80	0.10	0.019	0.917
2	Billing	1.17	-0.13	0.51	-0.93	-0.16	0.35	-0.55	-0.11	0.58	-0.37	-0.078	0.711
3	Seniority	1.51	0.27	0.14	0.82	0.15	0.41	0.85	.196	0.41	0.59	0.138	0.557

Model	R^2	ΔR^2	F	p	DW
1	0.048	-0.020	0.705	0.503	0.996
2	0.299	0.248	5.958	0.007	1.345
3	0.013	-0.057	0.186	0.831	0.916
4	0.005	-0.066	0.075	0.928	2.519

Note: DW= Durbin-Watson statistic.

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The second regression model is the only one with significant values. The model summary shows that the independent variables (activity level, turnover volume, and age in the sector) together account for 24% of the variance of the criterion variable. The Durbin-Watson statistic indicates that both the observations of the variables and the residuals are independent. In the remaining three models, the regression equation yields non-significant values. This result reflects that the independent variables, in particular the level of activity and previous experience in the sector, make it easier for cultural companies to occupy intermediation positions in the network of joint participation in projects. However, these effects do not seem to affect the level of centrality of entities in both types of relationships, nor in the degree of intermediation in the network of informal contacts.

This differential effect of the organizational attributes can be explained if we examine the two relations analyzed in depth. Informal contacts refer us to a type of relationship in which there is no need for agreement or a minimum level of commitment between the parties. This type of relationship may reflect the disclosure of own shows, personal closeness, or repeated coincidence in specialized events of the sector. Therefore, it is possible that the attributes of the organization may not have such a marked effect on the positioning of organizations in this type of relationship when compared to the impact they have on the positioning in the network of joint participation in projects. This type of relationship describes a link in which the parties have collaborated in joint initiatives, so it is possible that a long career and them having developed a large number of shows will make these organizations more selective when it comes to relating and refining their contacts, based on previous experiences of collaboration. Thereby, the trajectory and the level of activity would allow the entities to make "selective screens" to occupy positions of intermediation, since they are able to benefit from this positioning. In other words, these organizations can sacrifice the occupation of central positions, that is, maintain many contacts, with the objective of preserving strategic positions that allow them to be in contact with multiple groups, accessing resources in conditions of competitive advantages (Uzzi & Spiro, 2005; Burt & Soda, 2017).

To visualize this process, we will use the network of joint collaboration in projects, representing the degree of intermediation through the color of the node and the seniority in the sector through the size of the node. Graph 3 indicates that organizations with medium and high intermediation, represented in black and gray, mainly occupy central positions in the graph, whereas the organizations represented in white for the most part occupy peripheral positions. Larger organizations correspond to larger organizations and tend to occupy central positions.

We have delimited, through a dashed line, the entities that form the central nucleus of the network, showing that the companies that have spent the most time operating in the sector correspond to those that play the role of broker in the network of joint participation in projects. The visualization allows us to verify how the positioning of an organization in the graph is related to its organizational attributes, showing the incidence of these characteristics in the structural positioning of the organization.

In Graph 4, we have again represented the collaboration network, but this time we represented, through the size of the node, the volume of activity, and through color, the level of intermediation, as the degree centrality does not show covariations in relation to organizational attributes. There is a tendency for more active organizations to locate themselves in central positions, while smaller organizations tend to occupy positions outside the central core of the network.

To illustrate these results, we have represented, with a dashed line of discontinuous points, the links that maintain a central company and another one located in the periphery. We can observe the extensive number of contacts maintained by the central node and these contacts are distributed between central and peripheral organizations. For its part, the peripheral entity maintains a modest number of contacts that are located, in most cases, in the external zone of the network.

DISCUSSION

We have analyzed an inter-organizational network composed of dance and theater companies that develop their activity in Andalusia, focusing on the structural determinants and the organizational attributes that can influence the process of forming strategic partnerships. We used multiple regressions by following the procedure of quadratic assignment (Krackhardt, 1987, 1988, Dekker et al., 2007, Worrell et al., 2013) to determine to what extent being immersed in certain types of dyadic relationships, specifically the perception of having characteristics in common (homophily) and the belief of being able to maintain contacts in the future, affect the establishment of informal contacts. The results show that both types of relationships partially explain the decision to establish informal contacts. However, homophily has a greater explanatory power which seems to indicate that those responsible for the organizations see greater possibilities of maintaining informal contacts with organizations that are perceived as similar. This decision can be explained because

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the circuits of representation are segmented according to the different disciplines (contemporary dance, theater, classical ballet etc.), so that companies can see greater opportunities for collaboration with other entities that develop activities within the same artistic current.

However, this evidence can also reveal an excessive inbreeding when establishing partnerships which can hinder the generation of creative products with added value. This statement is based on the work that shows that being in contact with organizations that develop different creative styles is a crucial element in the creation of innovations (Uzzi & Spiro, 2005). These findings should be considered by the designers of cultural policies so that they facilitate the creation of circuits of representation in which the different artistic branches of the cultural panorama converge in Andalusia. At the same time, we must consider that the perception of similarity (homophily) constitutes a trigger for relationships. Various proposals in sectors as diverse as ecology and the one formed by technology-based companies show that the decision to establish contacts with other organizations is often facilitated when companies in the sector perceive that they have common characteristics and similar objectives (Calanni, Siddiki, Weible, & Leach, 2015; Capone & Lazzeretti, 2017).

Although initially the affinity perception allows one to predict the establishment of informal contacts, these types of contacts usually become the appropriate scenario to define collaborative projects of greater impact. The main specialized events in the performing arts sector take place in informal contexts, among which are the Theater Festival at the Port of Santa María and the South and Mercartes Theater Festival which are spaces for informal exchange. In spite of this, a significant portion of the agreements between the sector's commercial agents take place here. Therefore, in this specific context, it is difficult for relationships to flow, as Gulati (1995) proposes, from initial formalism to trust based on the accumulation of positive transactions. In the performing arts sector, it makes sense to think that the decision to establish relationships with an organization is motivated by: (a) the reputation of the organization; (b) the perception of affinity; and (c) the information available about the objectives and the types of activities carried out by the entity.

The literature focused on the analysis of inter-organizational networks indicates that organizations tend to be part of these types of structures and select their contacts within them based on criteria related to reducing transaction costs or improving their situation with respect to direct competitors (Uzzi, 1997; Ma et al., 2009; Jansen, 2017). However, this research shows that there are other types of determinants and organizational backgrounds that influence the positioning of organizations in the sector. We have verified, through hierarchical regression analysis, that the volume of activity and the time taken by the entities are related to the role of brokers performed by some companies in the collaborative network (in joint projects).

This result implies that the trajectory of the entity in the sector constitutes a key indicator in the possibilities of acquiring prominent positions in the cultural sector, with the organization with greater intermediation having more options to influence the rest of the network. This result is similar to that identified in different organizational contexts, such as that of manufacturing companies and companies that provide health services (Uzzi, 1997, Provan et al., 2009). Therefore, it seems that reputation is a key factor that explains the establishment of links in inter-organizational networks regardless of the activity sector. Organizations that have more experience have greater opportunities to get to know their competitors and carry out joint productions. In practice, this experience together with the level of activity are important factors when selecting organizations with which to establish relationships. The entities with the longest trajectory are identified with those that have managed to acquire a (positive) reputation over the years, reaching stable positions in the representation circuits. This is in line with the work of Granovetter (1985) and Provan et al. (2009) in which it is shown that reputation influences the decision to establish strategic partnerships.

On the other hand, the very characteristics of the performing arts sector in Andalusia, among which are (a) the small number of organizations professionally dedicated to this branch of activity, (b) the geographical concentration of institutions and cultural initiatives, and (c) the high level of dependence on Public Administration, may also be playing a key role in the structuring of the network (Ramos-Vidal & Maya-Jariego, 2013). These processes are related to the background of the organization to the extent that a long trajectory offers opportunities to ascertain the functioning of the bureaucratic and administrative system necessary to obtain subsidies. Older organizations are placed in a preferential position to access public representation circuits that produce greater benefits and provide greater stability to companies in the sector. This fact highlights the crucial role played by informal relationships in understanding the functioning of small businesses and the factors that motivate organizations to establish relationships with other companies (Martin-Rios & Erhardt, 2017). These results show that a large part of the decisions made in the business world, which ultimately define business strategy, arise and crystallize in informal interaction contexts, such as the specialized events just mentioned. This information should be considered by the institutional heads of cultural policies in order to understand that, beyond the role

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that these spaces fulfill as a means of cultural diffusion, there are contacts that end up defining the direction that the sector takes in relation to the type of cultural events that take place and to the public and private circuits in which cultural creations are represented.

It is necessary to point out the limitations of the study to understand the actual scope of the results. The characteristics of the performing arts sector in Andalusia make it difficult to extrapolate the results to other business contexts without previously taking into account these particularities. On the other hand, the influence of public policies on the distribution of subsidies and the organization of circuits of representation may be influencing the structuring of the collective.

It would be desirable to increase the number of organizations in order to obtain a more complete vision of the structure of the inter-organizational network and to extend the research to other subsectors of activity, such as groups dedicated to flamenco singing, in order to have a comparative base. Although it is true that the coverage was broad, given the fact that we reached 75% of the organizations in Andalusia., during the process of obtaining information we found out that some organizations included in the census had ceased their activity while some informants identified cultural groups that did not appear in the census. As suggested by Knoke and Yang (2008), it would be advisable to combine different strategies, such as interviewing key informants and using different name generators, to better delimit the size and composition of the inter-organizational network.

To summarize, in this paper we focused on analyzing multiple relationships that denote positive links. It is necessary to examine the negative relationships (e.g., unfair competition, plagiarism or negative gossips), as the evaluation of this type of relationship, despite posing problems of measurement and interpretation, has begun to draw the attention of experts in SNA (namely, Everett & Borgatti, 2014). Labianca and Brass (2006) have also pointed out that negative links display a great capacity to determine the behavior of players inside social networks.

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LEAN HEALTHCARE IMPLEMENTATION: EXPERIENCES AND LESSONS LEARNED FROM BRAZILIAN HOSPITALS

Implementação do lean healthcare: Experiências e lições aprendidas em hospitais brasileiros

Implementación del lean healthcare: Experiencias y lecciones aprendidas en hospitales brasileños

ABSTRACT

This study aimed to analyze the process of implementing lean healthcare in three Brazilian hospitals that have played a pioneering role in the implementation of this system. We adopted the case study approach and collected data through interviews, document analysis, and observation. The results showed that the processes of implementation of lean healthcare in the hospitals shared many similarities in terms of the flow of patients, materials, or information. Finally, it was possible to obtain some guidelines for the application of lean principles and techniques in order to facilitate the implementation of lean healthcare in hospital operations.

KEYWORDS | Lean production, lean healthcare, service operations, healthcare operations, case studies.

RESUMO

Este artigo tem como principal objetivo analisar como ocorreu o processo de implementação do lean healthcare em três hospitais brasileiros que exerceram um papel pioneiro na aplicação desse sistema. Foi utilizada a abordagem metodológica do estudo de caso, adotando como técnicas de coleta de dados entrevistas, análise documental e observação. Os resultados evidenciaram que os processos de implementação da produção enxuta nos três hospitais tiveram muitas semelhanças, seja nos fluxos de pacientes, materiais ou informações. Por meio da pesquisa, foi possível extrair diretrizes quanto à aplicação das técnicas e dos princípios enxutos de modo a fornecer suporte às operações hospitalares na implementação da produção enxuta.

PALAVRAS-CHAVE | *Produção enxuta, lean healthcare, operações de serviços, operações hospitalares, estudos de caso.*

RESUMEN

Este artículo tiene como principal objetivo analizar cómo se dio el proceso de implementación del lean healthcare en tres hospitales brasileños que desempeñaron un papel pionero en la aplicación de dicho sistema. Se utilizó el abordaje metodológico del estudio de caso, y se adoptaron como técnicas de recolección de datos entrevistas, análisis documental y observación. Los resultados evidenciaron que los procesos de implementación del lean healthcare en los tres hospitales han tenido muchas semejanzas, ya sea en los flujos de pacientes, material o información. Finalmente, mediante la investigación, fue posible extraer directrices respecto a la aplicación de las técnicas y de los principios lean a los efectos de proporcionar soporte a las operaciones hospitalarias en la implementación del lean healthcare

PALABRAS CLAVE | *Producción ajustada, lean healthcare, operaciones de servicios, operaciones hospitalarias, estudios de caso.*

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INTRODUCTION

Health services in Brazil have been expanded over the last few years. However, public investment in this sector is still insufficient (Brazilian Institute of Geography and Statistics [Instituto Brasileiro de Geografia and Estatística, IBGE], 2013), resulting in low quality services (Cunha & Corrêa, 2013). In Brazil, there are 2.3 beds per 1,000 inhabitants, which is below the recommended target by the Ministry of Health and a challenge to the provision of adequate assistance (IBGE, 2013). Health services in Brazil also present many management inefficiencies: out of the more than 6,000 Brazilian hospitals, only 259 were accredited by the National Accreditation Organization (Organização Nacional de Acreditação [ONA], 2017).

The low quality of health services and the need for more effective resource management led to the adaptation of certain methods and tools commonly used in manufacture to health services, with a highlight for lean production (LP) (Cunha & Corrêa, 2013; Haddad, Gregory, & Wickramasinghe, 2014; Suárez-Barraza, Smith, & Dahlgaard-Park, 2012). LP is a management system focused on waste elimination and value creation for all stakeholders; it can be applied to and improve the performance and competitiveness of health services (Hicks, McGovern, Prior, & Smith, 2015; Zidel, 2006).

Literature on LP is quite vast, but the information on how to implement it is not clear, making it difficult to identify which techniques or methods are more appropriate to its application to health operations. + analyzed five LP implementation processes in two Brazilian hospitals, but they did not detail the sequence of LP implementation stages, or extracted experiences that could be translated into guidelines to help LP implementation in other health operations. Moreover, most studies about lean healthcare are not comparative, mostly consisting of isolated case studies (Radnor, Holweg, & Waring, 2012).

The aim of the present study was to analyze the process of LP implementation in three Brazilian hospitals that played a pioneering role in its application, to identify common experiences that can be used to define guidelines for LP application to hospitals, and to contribute to literature on lean healthcare, which has limited details regarding its implementation.

The present study is structured as follows: following the present introduction, a brief theoretical background on lean healthcare is presented. This is followed by the description of the methodological procedures, and the presentation of case studies. The results are discussed, and LP implementation guidelines (here called "lessons learned") are extracted. Finally, the conclusions are presented.

LEAN HEALTHCARE

Shingo (1996) defines LP as a production management system aimed at the complete elimination of waste. Waste consists of activities that consume resources, generate costs, and do not add value to the product (Ohno, 1997; Shingo, 1996). LP is also considered a management strategy that can be applied to services, as its principles may improve the processes of any organization (Womack, Byrne, Fiume, Kaplan, & Toussaint, 2005).

LP includes a set of principles and methods. The principles are related to the philosophy of the company and constitute the pillars that guide lean strategic actions, and the methods are the means through which the principles are met and maintained (Godinho, 2004). The principles are: to determine the value for the client, define the value stream, maintain a continuous flow, pull production, integrate the supply chain, focus on quality, visual management, use technology that serves employees and processes, human resource development, and continuous improvement (Godinho, 2004; Liker, 2008; Shingo, 1996; Womack et al., 2005; Zidel, 2006). The methods are: value stream mapping (VSM), just in time, *kanban*, autonomation (*jidoka*), 5s, standardization, workload leveling (*heijunka*), group technology and cellular layout, *takt* time synchronization, quick changeover (Single Minute Exchange of Die [SMED]), zero defects quality control, total productive maintenance, visual control, teamwork and multifunctional workers, empowerment (autonomy), and *kaizen* (Godinho, 2004; Liker, 2008; Womack et al., 2005). VSM is widely used in both manufacturing and services. According to Rother and Shook (2003), who created this method, it can be used to map all material and information streams, and is used for communication, business planning and management of change, and improvement processes.

Hospitals are complex organizations, dedicated to diagnosis and patient treatment. Hospitals, therefore, prevent diseases, promote health, enable professional practice and training, and develop research (Malagón-Londoño, Morera, & Laverde, 2000). LP considers that the main process is the one that creates the value desired by the client. In the case of hospitals, the main processes are those aimed at health recovery (technical processes), and the remaining processes support the central service (Aronsson, Abrahamsson, & Spens, 2011; Kollberg, Dahlgaard, & Brehmer, 2007; Meredith, Amy, Paul, Fraser, & Mairi, 2011).

Emergency departments present the highest number of reported LP applications (Holden, 2011), because they are considered highly inefficient (Dickson, Anguelov, Vetterick, Eller, & Singh, 2009), with several problems that must be solved,

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such as overcrowding, delays, low quality care, low patient safety, and high costs (Holden, 2011). Nonetheless, because it has steady demand, LP application is easier. For example, Ben-Tovim et al. (2008) described LP application in an Australian hospital, beginning in the emergency department and later being expanded to other departments, which included three phases: acquiring technical knowledge, stabilizing high-volume flows, and standardizing and sustaining the changes. As a result, there was an increase of 40% to 80% in the number of patients that stayed in the emergency department for only one day, an increase in the number of patients seen in the emergency department, and a decrease in the number of patients that left the emergency department because of delays in service.

LP has also been applied to surgical processes, such as in Teichgräber and Bucourt (2012), who studied the process of procurement of endovascular stents in interventional radiology services. Following VSM application, it was observed that out of the 13 processes for the procurement of stents, only two were value-adding, five were unnecessary, and six were necessary but not value-adding. The authors drew a VSM for a desirable future state, which eliminates waste through pull production.

Sullivan, Soefje, Reinhart, McGeary, and Cabie (2014) studied LP implementation in the oncology pharmacy of a hospital in the United States, which was expanding its chemotherapy department and needed to increase the capacity of its pharmacy owing to increased drug volume. After VSM implementation, six steps were eliminated that were not value-adding, decreasing the stream lead time from 91 to 71 minutes.

LP has been applied to many other processes, such as hospital stays (Carter et al., 2012), outpatient services (Laganga, 2011), laboratories (Papadopoulos, Radnor, & Merali, 2011), radiology services (Kruska, Reedy, Pascal, Rosen, & Boiselle, 2012), and nursing services (Mizuno, Yoshikawa, Yomogida, Morio, & Sakai, 2012; Radnor et al., 2012; Toussaint, 2009).

These studies reported positive results of LP implementation, but they focused on the separate application of lean techniques, that is, on specific processes. Studies of systemic implementations of LP associated to strategic planning, thus, have not been reported (Burgess & Radnor, 2013; Radnor et al., 2012). These studies also show a predominance of VSM and *kaizen* application (Ben-Tovim et al., 2008; Dickson et al., 2009; Holden, 2011; Ng, Vail, Thomas, & Schmidt, 2010; Radnor et al., 2012; Tejedor-Panchon et al., 2014). Therefore, although the available literature is encompassing in reporting the application of lean techniques, it leaves a gap regarding their integration in a full lean healthcare implementation process.

Following the analysis of the literature on lean healthcare, certain elements discussed in the studies were identified and used to define different research categories related to LP implementation in hospital operations (Exhibit 1).

Exhibit 1. **Research categories**

Categories	Implementation process	Authors
History and trajectory of implementation	- Motivational factors - Implementation structure	Bertani (2012); Carter et al. (2012). Radnor et al. (2012); Burgess and Radnor (2013).
Implementation of lean techniques	- Process waste - Hospital processes versus lean techniques - Results achieved - Difficulties	Jimmerson (2010); Graban (2013); Ben-Tovim et al. (2008); Teichgräber and Bucourt (2012); Laganga (2011); Sullivan et al. (2014).
Development of improvement culture	- Human resources training - Commitment to human resources	Bertani (2012); Papadopoulos et al. (2011).

RESEARCH METHOD

The present study requires an in-depth and exhaustive analysis of the whole LP implementation process, for which qualitative case study is an adequate method. Three hospitals (identified as A, B, and C), located in the state of São Paulo and which had publicly declared to have adopted LP, were selected. In the case selection, the possibility of obtaining similar results (Yin, 2005), leading to the identification of common elements to different implementation processes, was also considered. Following the case selection, the overall information for the three hospitals was summarized (Exhibit 2. The date of the beginning of LP implementation, among others, is presented in this table.)

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Exhibit 2. **General case information**

Information	Cases		
	A	B	C
Type	Medium-sized philanthropic	Large-sized private (private services or agreements)	Private
Founding year	1920	1945	1995
Employees	600	1650	150
Services	Oncology (cancer treatment: surgeries, chemotherapy, radiotherapy, and tests) by the Unified Health System (Sistema Único de Saúde - SUS)	Foco em cardiologia, neurologia, Focused on cardiology, neurology, oncology, emergencies, trauma/orthopedics, and kidney, pancreas and liver transplants; performs transplants and tests by the SUS. Teaching and research institute	Specialized in cancer diagnosis and treatment Responsible for the oncology service of a state hospital (Hospital C1)
Characteristics	Two buildings: outpatient (capacity for 210 appointments per day) and hospital (76 beds and 4 surgical rooms)	30 mil m² area, 258 operational beds, 68 ICU beds, capacity for 1,000 surgeries/month, 1,160 admissions/month and 6,050 emergency attendances/month	No information
Beginning of LP	2011	2013	2008

A multiple case study approach was adopted, because it provides more convincing results than single case ones (Yin, 2005). The cases acted similarly to multiple experiments, presenting similar results, permitting literal replication and, therefore, external validation (Yin, 2005). The results were also based on data obtained from multiple sources (semi-structured and unstructured interviews; documents such as magazine news stories and internal documents; and *in loco* unsystematic observations), leading to construct validity (Yin, 2005).

To increase reliability, a protocol was developed using the data collection tools adopted and other general information (Yin, 2005); the research categories were used to develop the interview script (Exhibit 1). Interviews were administered to managers, as presented in Exhibit 3. Other details of data collection are also presented in Exhibit 3.

Exhibit 3. **Data collection**

Case	Interviewees	Collection tools	Duration of the interview
A	Quality coordinator	Semi-structured interviews, document analysis, and unsystematic observations	1h30 and 1h
	Radiotherapy coordinator		1h05
B	Quality coordinator		2h30 and 30min
C	Quality manager	Non-structured interviews, unsystematic observations	1h05

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All interviews were recorded and transcribed. Data were analyzed within-case (how each hospital implemented LP) and cross-case (different cases were compared and contrasted; the results were compared with the theory; and lessons learned were identified.) (Yin, 2005). The data were synthesized and interpreted using content analysis, which enabled the identification of study categories based on the theoretical framework. Content analysis is a method of text and transcribed speech analysis that seeks to analyze the content of text in a systematic, objective, and reliable manner, by coding the text into predefined categories (Papworth, Milne, & Boak, 2009).

RESULTS

Hospital A

Motivation for LP implementation emerged when a consulting company contacted the hospital director and offered free services for one year in exchange for experience with lean healthcare implementation. The hospital accepted, and after one year, hired the consulting company, which had remained in service until February 2014. Lean culture is currently developed by the hospital employees under the supervision of quality management.

LP implementation was linked to strategic planning, with lean targets compatible with strategic ones. In the beginning of LP implementation, a balanced scorecard (BSC) was developed and focused on outpatient and specialized medical services (OSMS), chemotherapy, radiotherapy, and tests. The BSC goals were related to LP from four perspectives: clients, internal processes, knowledge and apprenticeship, and financial.

LP implementation was performed using the define, measure, analyze, improve, and control (DMAIC) methodology (it was used in Six Sigma projects for improvement project management), beginning with the chemotherapy patient flow (key-service for cancer treatment and profitability). The targets for the first lean project were: to decrease waiting time, increase process capacity, and structure the sector. The project was later extended to radiotherapy processes.

Awareness and training sessions were performed for three months, with the employees involved in chemotherapy patient flow. Initially, the manager and chief nurse were trained, and subsequently the remaining employees. Training sessions were performed in one day or one week, and included both theoretical and practical components (the practical component consisted of improvement projects). The training sessions did not have a set periodicity but were performed as further adjustments, or new improvement projects were needed.

The first methods implemented were VSM and *kaizen*. Losses were identified in chemotherapy and radiotherapy processes through VSM, and lean techniques were applied to eliminate them (Exhibit 4).

Exhibit 4. **Lean techniques – Hospital A**

Process	Techniques	Results
Chemotherapy	VSM, *kaizen*, 5S, workload leveling, standardization, team work and multifunctional workers, visual control, and zero defect quality control.	Increase of 23% in the capacity of chemotherapy application. Decrease of patient waiting time for chemotherapy infusion to 1 h. Decrease in the time of seat loading of 40 min.
Triage	VSM, *kaizen*, workload leveling and standardization.	*
Authorization of High Complexity Procedures (Autorização de Procedimentos de Alta Complexidade [APAC])	VSM, kaizen, standardization.	Decrease of 74%, or up to 28 days, in patient lead time.
Reception	VSM, *kaizen*, 5S, standardization, and zero defect quality control.	*
Patient record control		
Laboratories		Decrease of 90% in test deadline.
Pharmacy	5S, standardization, and zero defect quality control.	Increased productivity in drug handling.
Radiotherapy	VSM, *kaizen*, standardization, visual management, 5S, SMED, zero defect quality control.	Decreased waiting time from 50 min to 20 min. Creation of a reception.

* Processes with results that were not described.

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After LP implementation, chemotherapy treatments at the hospital started to be scheduled adequately: the patients that required longer chemotherapy duration began being assigned to the first hours of the day, which decreased the waiting time from four hours to one hour. Regarding radiotherapy processes, before LP implementation the employees had to perform bureaucratic and administrative functions and monitor the radiotherapy treatments, which increased the time of application cycle and the patient waiting time. After LP implementation, a reception room and dressing rooms inside the treatment rooms were created (so that, as one patient is leaving the machine, another is already changing to enter it – reduced setup). These changes decreased the patient waiting time from 50 min to 20 min.

Improvement sustainability was obtained through standardization of activities, definition of responsible staff and project targets, and monitoring of performance indicators (established before the interventions). DMAIC enabled improvement sustainability as the improvements were implemented and subsequently analyzed, beginning a new improvement cycle.

Hospital B

The motivation for LP implementation came from the senior management, which realized the need for revising processes and hired an employee to implement LP (quality coordinator). The set targets were the provision of health services of excellence and reduction of internal costs, thereby increasing operational efficiency and market competitiveness. A consulting company referred by Johnson & Johnson, the hospital supplier of surgical thread, was hired for six months. LP is currently developed by the hospital employees under the supervision of the quality management.

LP implementation was linked to strategic planning, which was developed by the senior management and operational managers, and inscribed within the Enterprise Resource Planning (ERP). LP was linked to strategic planning by being included as an action to achieve the set goal (increase productivity of all processes, and thus decrease costs). The DMAIC method of improvement was also adopted within the implementation structure.

Several awareness sessions were initially conducted with the managers, and the flow of patients subjected to a video-assisted elective surgery was subsequently selected as the scope of the first project, because it is a high-volume surgery. The professionals involved in this flow needed to be trained and capacitated to implement LP techniques. The hospital has a continued education sector that plans training sessions for lean project execution. The quality management administers these theoretical and practical training sessions using lean projects and a pasta factory simulation using robots made out of assembly toys. The initial focus was 5S and the seven wastes of LP (overproduction, transportation, over-processing, defects, inventory, motion, and waiting). Currently, 30% of the employees have been trained, and all employees have received the first instructions on LP upon admission, with the goal of developing the culture of continuous improvement.

The first improvement project was composed of 12 subprojects, encompassing the whole flow of patients subjected to an elective video-assisted surgery (from surgery scheduling to patient discharge). Each project was executed by a multidisciplinary team that worked on surgical flow process to develop the following projects: surgery scheduling; patient reception; bed management; patient admission at the admissions unit; patient discharge (from when the doctor prescribes the discharge to the patient exiting the hospital, room cleaning, and room release to a new patient); surgery center: sterilization center, post-anesthesia recovery; lean room; improvement of patient transportation (transportation from the reception to the admissions unit, from the admissions unit to the surgery center, and from the admissions unit to the laboratory for tests); information flow; supply redesign; orthoses, prostheses, special material (OPSM) flow, considered a high-cost flow; overall maintenance (focused on scheduling preventive equipment maintenance); and visual management.

The scope of all projects, participants, and targets was defined previously, and an annual gain of BRL 34.5 million in cost reduction was predicted, of which BRL 25 million accounts for the surgical process alone.

Supplier, input, process, output, and customer (SIPOC), which consists of the description of these features for a macro-understanding of processes, was used before LH implementation. Subsequently, it was applied the Voice of Customer (VOC), which involves talking with the main clients regarding the quality of the goods or services provided. *Kaizen* and VSM were then implemented, followed by 5S (after 5S, five tons of waste equipment and paper were removed). The relationship between the implemented techniques and the results obtained for the flow of patients subjected to an elective video-assisted surgery is presented in Exhibit 5.

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Exhibit 5. **Lean techniques – Hospital B**

Processes	Techniques	Results
Surgery scheduling	VSM, *kaizen*, 5S, standardization, workload leveling, takt time synchronization, zero defect quality control, and cellular layout.	Decreased waiting time, decrease of 28% in the number of cancelled surgeries.
Patient reception	VSM, *kaizen*, 5S, standardization, takt time synchronization, visual control, and zero defect quality control.	Decreased waiting time.
Bed management	VSM, *kaizen*, 5S, standardization, workload leveling, takt time synchronization, zero defect quality control, and visual control.	Decreased bed turnaround time from 5 h 30 to 2 h 30, growth of 300% in the number of opened vacancies and decrease of 56% in the time of bed cleaning.
Patient admission in the admissions unit	VSM, *kaizen*, 5S, standardization, takt time synchronization, visual control, and zero defect quality control.	Decreased times.
Release process		*
Surgical center: sterilization central, post-anesthesia recovery	VSM, *kaizen*, 5S, standardization, takt time synchronization, zero defect quality control, autonomation, SMED, total productive maintenance, visual control, cellular layout.	Lean room project (through a pilot, decrease in turnaround time from 100 min to 16 min), elimination of pharmacy rework.
Patient transportation	VSM, *kaizen*, 5S, standardization, takt time synchronization, total productive maintenance, zero defect quality control.	*
Information flow	VSM, *kaizen*, 5S, standardization, takt time synchronization, visual control, zero defect quality control.	*
Supplies	VSM, *kaizen*, 5S, cellular layout, standardization, takt time synchronization, zero defect quality control, visual control, kanban.	Decrease of 3% in inventory, deactivation of the pharmacy that supplied ICUs, and creation of a new ICU with 10 beds. Deactivation of four satellite pharmacies and use of bedside carts.
OPSM flow	VSM, *kaizen*, 5S, standardization, takt time synchronization, visual control, and zero defect quality control.	*
Invoice central	Group technology and cellular layout.	*
Billing		*

* Processes with results that were not detailed in the field research.

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When the traditional surgery room was used, the pharmacy supplied a cart with the basic drugs, and a nurse was required to fetch the necessary drugs and materials. Among the improvements in the surgical process was the development of a lean room containing a supermarket (cabinet) where the drugs and materials necessary for the five surgeries were stored. This decreased the setup time from 100 min to 16 min. Markings in the surgical room were also created, which facilitated the easy cleaning process, and cleaning started during the surgery (decreasing the setup time between surgeries).

LP implementation was supported by the management (although there was resistance from the employees, with nurses being the most resistant, especially in the ICU). This resistance was overcome through training sessions and daily supervision. Performance indicators were also established to evaluate the results achieved and sustain the improvements.

Hospital C

Between 2006 and 2007, the hospital underwent certification by ONA, and the preparations to meet the certification requirements increased the lead times, costs, and volume of documentation. The director realized that the processes were confusing and complex, and that the volume of documentation had become the greatest obstacle; thus, he decided to look for information on waste in health systems.

The director consulted the study by Womack et al. (2005), and understood that processes could be improved, thereby increasing quality and efficiency. Therefore, he established a partnership with the Lean Institute Brasil (LIB), which had not previously performed lean healthcare implementation. With the support of LIB, the director began participating in events promoted by, among others, Volkswagen, GM, Embraer, and 3M, as well as conferences in the US; subsequently, he attended training courses in Canada. Hospital C is currently a Lean Healthcare Black Belt according to the Logistics Institute Canada.

Lean healthcare implementation was linked to strategic planning, and its aims were to improve the quality of patient care, expedite processes, and eliminate waste. The implementation began with the use of the plan, do, correct, and act (PDCA) method, and a pilot project in Hospital C1 was aimed at increasing the outpatient capacity. The first methods implemented were *kaizen* and VSM. After certain improvements, the agility of service increased by 25%. The increase in outpatient capacity generated bottlenecks in, among others, emergencies, admissions, and imaging center; the hospital also realized that improving a given process was not sufficient, but the improvements must include the whole value chain.

Therefore, projects started with an aim to improve the whole chain. Currently, there are more than 80 improvement projects currently performed in Hospital C1, which is only responsible for oncological treatments, and all its units. In Hospital C1, the most pronounced result was a 170% increase in consultation capacity, without expanding the physical area or number of employees, with a decrease in overtime higher than 40%.

The target of all projects is decreasing waste in at least 50%, and the following waste decreases were observed: (i) 30% in the reception process in one of the clinics; (ii) 90% in the invoice process; (iii) 70% in inventory; (iv) 80% in billing; and (v) waiting time in radiotherapy from 2 hours and 30 minutes to 1 hour. It is highlighted that the project for the radiotherapy process increased machine efficiency from 44% to 70%.

Kaizen improvement groups are created when a problem is detected, all staff involved is called to participate in them; the result is an A3 report (tool to propose solutions).

VSMs were focused on increasing process safety (eliminating mistakes and waste, and therefore increasing quality). The implementation of the future state is usually performed using other lean techniques. In the case of Hospital C, the following were adopted: 5S, standardization, visual control, multifunctional workers, and zero defects quality control.

Hospital C held training sessions that combined theory and practice (the practical component consisted of improvement projects; theory was provided by LIB). In 2009, the executive director administered a 40-hour course on LH for 16 employees; afterward, the team developed four projects. Another team was qualified in 2010, and focused on developing the improvement culture instead of specific projects.

In 2013, Hospital C established a society with a hospital from the Rede D'or network, and took over three additional radiotherapy units. The LH management of Hospital C must, therefore, keep people developing lean improvements in its units, and at the same time improve the new units. Hospital C obtained help from LIB, which conducted the expansion of LH implementation and the training of flow coordinators.

Currently, Hospital C possesses assistance, organization and work, material and equipment, and information flow coordinators, who are responsible for improvements in the whole hospital chain. It also has a visual management board (routine management) in all its processes, in which security alerts (reports are filled when errors occur) and improvement ideas are included. On a weekly basis, the flow coordinators, together with the process team, analyze problems and ideas, as well as may

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generate *kaizen* events and/or A3 reports. If *kaizen* is needed, the problems raised are reported to the quality management who holds the *kaizen* event together with flow coordinators.

The hospital implemented visual control. In addition to routine management, it adopted tables with: monitoring of performance indicators (based on the four dimensions of care: people, safety, quality, and efficiency), medical record tracking, billing control, preventive maintenance, control of reception activities, and control of several processes throughout the workplace, such as daily rounds (standardized questions based on the four dimensions of care), work instructions, monthly performance, and failure, mode, and effects analysis (FMEA) (a systematic tool that enables the identification and prevention of problems) in the reception process (Exhibit 6).

Exhibit 6. **Lean techniques - Hospital C**

Process	Techniques	Results
Reception	VSM, *kaizen*, visual control, 5S, standardization, zero defect quality control, team work, and multifunctional workers.	Decrease of 30% in waste.
Invoice central	VSM, *kaizen*, visual control, 5S, standardization, zero defect quality control.	Decrease of 90% in waste.
Supplies	VSM, *kaizen*, visual control, 5S, standardization, zero defect quality control.	Decrease of 70% in inventory.
Billing	VSM, *kaizen*, visual control, 5S, standardization, zero defect quality control, team work, and multifunctional workers.	Billing in real time.
Outpatient	VSM, *kaizen*, visual control, 5S, standardization, and zero defect quality control.	Increase of 170% in appointment capacity.
Pharmacy		*
Laboratories		
Emergencies		
Chemotherapy		
Radiotherapy	VSM, *kaizen*, visual control, 5S, standardization, zero defect quality control, and SMED.	Decreased waiting time for radiotherapy from 2 h 30 to 1 h Increased efficiency of radiotherapy machines from 44% to 70%.
Maintenance	Visual control, 5S, standardization, and zero defect quality control.	*
Laundry	5S.	*

* Processes which results were not described.

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DISCUSSION AND LESSONS LEARNED

LP implementation presented many similarities in the three studied cases; for example, the VSM application enabled the identification of activities that did not add value to the processes, resulting in decreased lead time (namely, in chemotherapy and radiotherapy processes in Hospital A) and decreased setup of surgical processes (Hospital B).

LP implementation was associated with strategic planning in all cases, using cyclical continuous improvement tools (PDCA in case C, and DMAIC in cases A and B). Theoretical and practical training sessions, which were organized by consulting companies and quality managers, were also performed. The senior management was involved, with LP implementation being initiated owing to problems in high volume processes or essential to profitability. Improvement projects with limited scope were developed; participants were selected; and targets were defined. Although the projects had a target, and consequently a beneficial result, the senior management focused on implementing LP systemically and developed a cultural change, thereby promoting the assimilation of continuous improvement culture.

Because they enable the identification of process waste, projects began with the application of VSM, together with *kaizen*. The operations intervened in the processes, simultaneously implementing other lean techniques. LP implementation began with a different process in each hospital: chemotherapy patient flow in Hospital A, surgical patient flow in Hospital B, and outpatient process in Hospital C. The processes with higher application of lean techniques are presented on Exhibit 7.

Exhibit 7. **Processes and implemented techniques**

Process	Hospital	Techniques applied	Number of techniques
Chemotherapy	A	VSM, *kaizen*, 5S, workload leveling, standardization, team work and multifunctional workers, visual control, and zero defect quality control.	8
	C	VSM, *kaizen*, visual control, 5S, standardization, and zero defect quality control.	6
Radiotherapy	A	VSM, *kaizen*, standardization, visual control, 5S, zero defect quality control.	6
	C		
Laboratories	A	VSM, *kaizen*, 5S, standardization, and zero defect quality control.	5
	C	VSM, *kaizen*, visual control, 5S, standardization, zero defect quality control.	6
Pharmacy	A	5S, standardization, and zero defect quality control.	3
	B	VSM, *kaizen*, 5S, cellular layout, standardization, takt time synchronization, zero defect quality control, visual control, kanban.	9
	C	VSM, *kaizen*, visual control, 5S, standardization, and zero defect quality control.	6
Reception	A	VSM, *kaizen*, 5S, standardization, and zero defect quality control.	5
	B	VSM, *kaizen*, 5S, standardization, takt time synchronization, visual control, and zero defect quality control.	7
	C	VSM, *kaizen*, visual control, 5S, standardization, zero defect quality control, team work, and multifunctional workers.	7
Invoice central	B	Group technology and cellular layout.	1
	C	VSM, *kaizen*, visual control, 5S, standardization, zero defect quality control.	6
Billing	B	Group technology and cellular layout.	1
	C	VSM, *kaizen*, visual control, 5S, standardization, zero defect quality control, team work, and multifunctional workers.	7

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Figure 1 was built based on the case analysis, and presents the common experiences on "how" the LP implementation process occurred. Guidelines for lean healthcare implementation were extracted from Figure 1; these may help hospital operations improve care quality and efficiency.

- Lean healthcare implementation must include patient, material, and information flows. Patients are processed in, among others, surgery, emergency, chemotherapy, and outpatient processes. Materials are processed in warehouse, pharmacy, laboratories, OPSM, and laundries. Information is the focus of changes in medical record, surgical scheduling, bed management, and invoice and billing central control processes.

- Contracting specialized consulting services. An external view may be a key factor to the success of lean healthcare implementation, especially in organizations where the technical staff has no experience with lean philosophy. In Hospital A, lean healthcare implementation began with the direct help of consultants and continued for three years; Hospital B had the help of a consulting company in the initial phase of implementation. In Hospital C, direct participation of consultants only occurred six years after the beginning of lean healthcare implementation, at the time of its expansion.

- Establishing improvement teams (*ad hoc*) and a fixed process management team. *Ad hoc* teams were established in the three hospitals to conduct the projects. In Hospital A, a fixed team was trained to lead lean healthcare implementation from the beginning. Hospital C also established a fixed team for this purpose, composed by a quality manager and four flow coordinators.

- Linking lean healthcare to strategic planning to promote higher commitment. Lean healthcare implementation was linked to strategic planning, thereby increasing its efficiency through actions to achieve performance targets. This may be performed by the fixed team responsible for managing lean healthcare implementation, by the consulting company and managers in improvement teams.

- Adopting cyclical continuous improvement tools: PDCA, or DMAIC. The operationalization of PDCA and DMAIC is analogous, and therefore both pilot and other projects can be performed efficiently using these tools.

- Improvement projects must be performed for critical processes, defining scope and targets. In all studied cases, senior management decided to begin LP implementation with processes considered problematic, of high volume, or essential to profitability, based on daily coexistence with the processes and available indicators. LP implementation was operationalized through improvement projects with defined scope, participants and targets, and the support of the senior management.

- Conducting theoretical and practical training sessions. The practical component may consist of knowledge application through improvement projects.

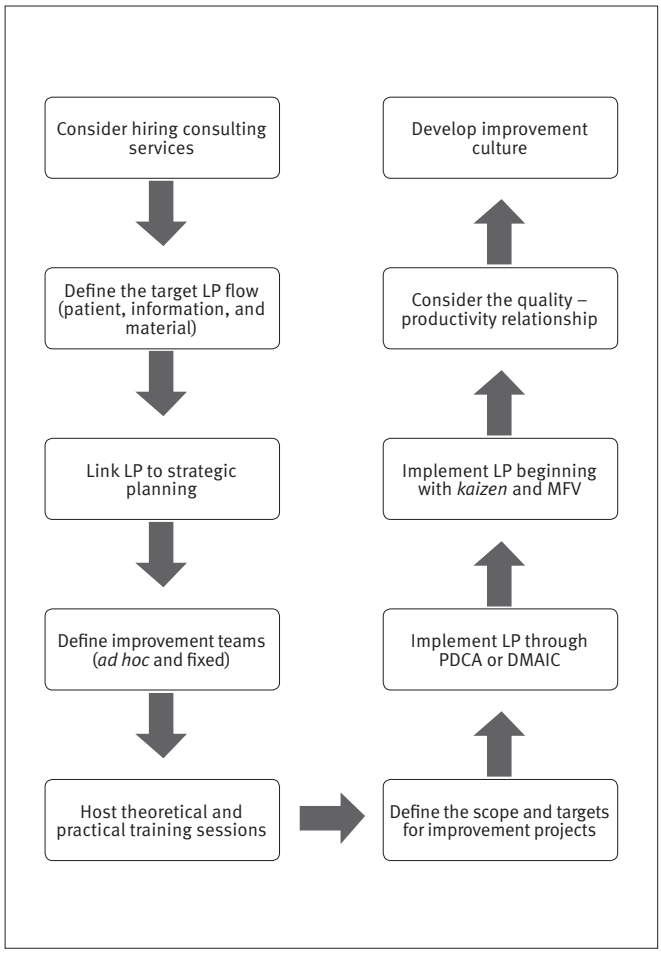
- The first methods applied must be *kaizen* and VSM. VSM was used to identify process waste. The studied hospitals then performed interventions to eliminate or decrease process waste, and simultaneously implemented other methods (5S, standardization, workload leveling, visual control, zero defects quality control, etc.).

- LP implementation must consider the quality-productivity relationship. The safety of processes and patients must be prioritized; that is, productivity increases are only viable if they do not negatively affect quality.

- Developing the continuous improvement culture. Although the projects had targets, and consequently results, the focus of the senior management was to implement LP systemically and effect a cultural change, promoting the improvement culture.

In agreement with previous reports, the studied cases showed that LP implementation encompasses patient, material, and information flows. Because hospitals are complex organizations, LP success would be difficult if it focused only on the improvement of one type of flow. Although patient flow is the most representative in certain cases, its performance would not be good without the support of material and information flows.

Figure 1. **Common experiences in LP implementation**



Regarding the implementation structure, Bertani (2012) suggested the formation of *ad hoc* teams, and a fixed internal team to manage the whole process. In agreement with previous reports, these teams were formed and conducted the projects in the three studied cases. In agreement with Costa et al. (2015) and Bertani (2012), employee commitment was the critical factor for LP implementation in the three studied cases. In addition, as suggested by Zidel (2006), LP implementation began with the contracting of a consulting company.

CONCLUSION

The aim of the present study was to analyze LP implementation in three hospitals, to identify common experiences from which guidelines for lean healthcare application could be extracted. The data reported in the consulted literature did not allow to understand the process of LP implementation in health services. Hence, among the contributions of the present study was the analysis of the process underwent by the hospitals in search for a lean management model.

The present study allowed to connect the existing studies, which usually showed lean healthcare implementation divided in parts (either focusing on a given technique or emphasizing positive results), but it did not give an overall view of the whole process. The in-depth analysis of the LP implementation process allowed the identification of some determinant factors for the success of lean healthcare, and helped building a conceptual basis for this process.

The studied cases presented certain similarities with the consulted literature, which considers that *kaizen* and VSM should be the first lean techniques implemented (Carter et al., 2012; Dickson et al., 2009; Laganga, 2011; Teichgräber & Bucourt, 2012). However, the empirical evidence in the present study is in contrast with Radnor et al. (2012) and Burgess and Radnor (2013), who stated that LP implementation is not systemic or linked to strategic planning. In the studied cases, LP implementation was linked to strategic planning, and aligned with operational goals and the development of continuous improvement culture.

The present study may help hospitals and managers that wish to implement LP, helping them to develop lean culture and improve patient care quality, decrease costs, and increase process efficiency. The present study may also help the managers of the studied hospitals to understand how LP implementation occurred in their hospitals, and make future improvements from the lessons learned in their trajectories.

Another contribution of the present study was the presentation of 10 guidelines (lessons learned) for lean healthcare implementation. Based on these guidelines, further studies may be performed to elaborate a methodology of LP implementation in hospital operations.

The present study presented limitations, one of them being that the resources necessary to LP implementation were not identified. It is therefore suggested that the most important resources to lean method implementation must be identified from a resource-based viewpoint, in order to identify which resources must be developed and improved. This may also be extended to the hospital supply chain, which affects directly the success of LP implementation and must be studied.

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LOWER FINANCIAL LITERACY INDUCES USE OF INFORMAL LOANS

Deficit de alfabetização financeira induz ao uso de empréstimos em mercados informais

Déficit de educación financiera induce el uso de préstamos en mercados informales

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ABSTRACT

Finance literature documents associations between a family's financial literacy and its propensity to borrow. However, most studies focus exclusively on formal loan markets. Based on 2,023 observations about financial behavior of Brazilian families, we examined the impacts of financial literacy on informal borrowing, such as loans from friends or moneylenders. Using multinomial logit models, we compared financial literacy's effects on the propensity to take informal loans between families that did not borrow at all and those who took bank loans. Financial literacy is measured by the investment in capitalization bonds, a financial instrument in the Brazilian market. The results suggest that financial literacy's relevance to informal loans may exceed that for formal credit channels.

KEYWORDS | Loan, informal loan, financial literacy, capitalization bond, behavioral finance.

RESUMO

A literatura de finanças documenta associações entre alfabetização financeira de famílias e sua propensão a tomar empréstimos. Contudo verifica-se predominância de estudos que se concentram exclusivamente em mercados formais de crédito. Com base em 2.023 observações sobre comportamento financeiro de famílias brasileiras, examinamos impactos da alfabetização financeira sobre a tomada de empréstimos em mercados informais, tais como empréstimos obtidos com amigos/conhecidos, ou mesmo agiotas. Com o emprego de modelos logit multinomiais, mensuramos os efeitos da alfabetização financeira sobre a propensão a tomar empréstimos na informalidade, comparando dois grupos: famílias que não contrataram nenhum tipo de empréstimo, e aquelas que tomaram empréstimos bancários. Adotou-se como proxy para o nível de alfabetização financeira o consumo de um produto financeiro encontrado no mercado brasileiro, o título de capitalização. Os resultados sugerem que a alfabetização financeira pode ter maior relevância na propensão a empréstimos informais comparativamente ao crédito formal.

PALAVRAS-CHAVE | *Crédito, crédito informal, alfabetização financeira, títulos de capitalização, finanças comportamentais.*

RESUMEN

La literatura de finanzas documenta asociaciones entre la educación financiera de familias y su propensión a sacar préstamos. No obstante, se verifica la predominancia de estudios que se concentran exclusivamente en mercados formales de crédito. Con base en 2.023 observaciones acerca del comportamiento financiero de familias brasileñas, examinamos los impactos de la educación financiera sobre la toma de préstamos en mercados informales, tales como préstamos obtenidos con amigos/conocidos, o inclusive usureros. Con el empleo de modelos logit multinomiales medimos los efectos de la educación financiera sobre la propensión a sacar préstamos informalmente, comparando dos grupos: familias que no contrataron ningún tipo de préstamo, y las que sacaron préstamos bancarios. La proxy adoptada para el nivel de educación financiera es el consumo de un producto financiero encontrado en el mercado brasileño, el título de capitalización. Los resultados sugieren que la educación financiera puede tener mayor relevancia en la propensión a sacar préstamos informales, comparativamente a la restricción de crédito formal.

PALABRAS CLAVE | *Crédito, crédito informal, educación financiera, títulos de capitalización, finanzas comportamentales.*

INTRODUCTION

The phenomenon of informality in the economy is seen with higher or lower intensity in most countries around the world. Schneider, Buehn, and Montenegro (2010) estimated what they called the *shadow economy* as a percentage of the Gross Domestic Product (GDP) for a group of 162 countries, from 1999 to 2007. The estimated informal economy in Brazil grew monotonically over that period. The average rate of growth was 40.5 percent and the last reading in 2007 was 43 percent. To this effect, the informality of the Brazilian economy is more explicitly similar to that (the average) of countries like Colombia (41%), Uruguay (51.5%), Ecuador (36.6%), and Venezuela (33.4%) than that of economies like China (13.5%), India (24%), Argentina (25.5%), and Chile (20.3%).

The informal economy not only compromises tax revenue but also distorts official figures on unemployment, income, consumption, and other indicators, which jeopardizes public policies that rely on such data. Moreover, Schneider et al. (2010) discuss the potential effects a growing informal economy can have on the official economy. If on the one hand the informal economy competes for labor, on the other hand, it has a positive effect on the formal economy, since at least two-thirds of the earnings from informal work are immediately spent in the official economy. Cole, Sampson, and Zia (2011) believe that one of the fastest ways of promoting financial development in emerging markets is attracting individuals and businesses to the formal financial sector.

According to Pagano (2001), efficient credit depends on a series of support institutions that can provide: (i) a reasonable rate of return for the creditors, (ii) a constant flow of information from the borrowers to the creditors, and (iii) the legal means to foreclose on the guarantees. Yet these institutions require borrowers to present evidence of their earnings, proof of address, and the ownership of foreclosable property. At least in the Brazilian market, there are no explicit hurdles for a worker holding an informal job to secure credit from official sources. In practice, this worker will face difficulties in furnishing documents related to income or assets that could be used as collateral. The flipside is higher risk and interest rates.

The feasibility of guarantee mechanisms is associated with the quality of legal institutions. La Porta, Lopez-de-Silanes, and Schleifer (1999) point out that emerging nations have institutional environments that are less favorable to the transfer of ownership of collateralized assets. An informal economy exacerbates these disadvantages, as assets without formal proof of title reduce in value drastically. Bertrand and Morse (2011) studied the behavioral bias in choosing payday loans and concluded that individuals can be fully informed regarding the interest rate charged by payday loans, can have no problems controlling themselves, and may not have overly optimistic expectations regarding their capacity to pay such loans. Nonetheless, they choose to take payday loans with high interest rates because they may have a pressing need for cash and have no other loan alternatives. In other words, their decision is not necessarily irrational, but reflects a choice to maximize utility vis-à-vis the limitations they face.

An alternative – but not excluding – point of view claims that the lack of financial literacy acts as an important barrier in the demand for financial services and products (Cole et al., 2011). If individuals have no knowledge of the products they are offered, or even if they cannot differentiate between the possible alternatives, they will not pursue the best alternatives. Lusardi (2008) points out that credit has become more accessible, but most individuals still cannot make simple calculations of compound interest.

The issue of financial literacy can be increasingly important as financial products become more abundant and complex. Lusardi and Mitchell (2014) argue that the development of financial markets brought advantages, such as bringing customized contracts and improving access to credit. However, it imposed more responsibility on households, who had to manage their finances responsibly. Some researchers suggest the possibility of a predatory marketing industry (Campbell, 2006; Gabaix & Laibson, 2006). In this regard, Gabaix and Laibson (2006) note that some companies can hide some information from shortsighted consumers (e.g., rates and fees).

An example of this is companies that offer credit cards with no annual fees, hiding the fact that this is only true for the first year of use. Thaler and Tucker (2013) support this argument by suggesting that disclosing product information is the key driver of efficiency in consumer markets, with positive externalities to society. Most studies focusing on informal borrowing analyze moneylending activities (Hoff & Stiglitz, 1997; Madestam, 2014). However, some studies point out that informal loans among friends and relatives represent a significant economic factor (Turvey, Kong, & Huo, 2010; Yuan & Gao, 2012). An Organization for Economic Cooperation and Development (OECD) survey carried out in 14 countries showed that more than one-third of those interviewed, in some of these countries, resorted to their network of acquaintances to secure a loan in the 12 months prior to the interview (OECD, 2013).

This same report suggests that in some countries, and within some groups, an individual's family and friends represent their first option in case of financial needs. Additionally, this

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behavior does not necessarily mean a lack of access to financial services. However, placing excessive trust on one's family and friends can in turn exert financial pressure on these groups and on informal networks. The limited research on this theme, particularly in Brazil, can be explained by inaccessible information on credit activities in the informal market. To the authors' knowledge, the only studies in Brazil focused on the Chinese community (Schiavini, Scherer, & Coronel, 2012; Sheng & Mendes-Da-Silva, 2014) and the state of São Paulo's coffee farming in the late 19th century (Tosi, Faleiros, & Teodoro, 2007; Tosi, Faleiros, & Fontanari, 2011).

In addition, none of the studies on the informal loan market addressed the topic of financial literacy. However, Cole et al. (2011) report that financial knowledge is an important predictor of financial behavior in emerging markets. Lusardi and Tufano (2009), in turn, warn that despite the increasing relevance of loan decisions in the face of recent credit crises, little research has examined the relationship between financial literacy and indebtedness. Therefore, there is a gap in terms of the analysis of the potential effects of financial literacy in Brazil, especially when related to the use of financial services by the lower-income classes. In this sense, moving forward with the understanding of financial literacy may be useful not only for developing better financial products, but also for improving public policies in housing, conditional cash transfers, etc.

This study analyzes the role of financial literacy when individuals take loans from informal sources. This paper is organized as follows. The following section describes the background – strategy used to identify the lack of financial literacy, proxied by investment in capitalization bonds, a financial instrument in Brazil. After that we describe the method employed and discuss the findings, finally we bring the concluding remarks.

BACKGROUND

Strategy employed to evaluate financial literacy

Financial literacy has gained the interest of several groups around the globe, such as policy makers, bankers, employers, community groups, and families planning for their future. It can be a result of the rapid creation of a myriad of new financial products, the increasingly global nature of financial markets with all the complexity it brings, and changes in political and demographic characteristics (Rose, 2008). This argument, together with the idea that literature about informal loans is scarce, supports the relevance and the contribution of this paper.

For the term "financial literacy," this study used the definition employed by the OECD (2013): "A combination of awareness, knowledge, skill, attitude, and behavior necessary to make sound financial decisions and ultimately, achieve individual financial wellbeing" (Atkinson & Messy, 2012). The methods used to measure the level of financial literacy vary substantially (Hung, Parker, & Yoong, 2009). Some researchers use hypothetical financial situations (Lusardi, 2008; Lusardi & Mitchell, 2009, 2011a) or fictitious financial products (Carlin & Robinson, 2012).

Although financial literacy can be measured in levels, this study used a dummy variable to identify individuals with little financial literacy. The Brazilian market has a unique and widely available financial product called "capitalization bond," which does not contribute to the financial wellbeing of consumers, since other available products are as affordable as capitalization bonds – or even more so – offer similar or better benefits at lower costs, with fewer penalties and restrictions (Melo, Franklin, & Neves, 2012). Accordingly, this section presents arguments supporting the premise that individuals consuming these bonds have lower financial literacy.

Savings-based financial products

Capitalization bonds are registered securities that can be acquired in a single payment or in installments. Part of the funds invested are used to build capital. Based on contractual conditions, this capital is paid back in currency after a given period. The other part of the funds invested, pays for drawings (capitalization bond holders compete in drawings over the term of the contract and redeem the funds deposited at the end of the period) and administrative expenses.

There are four types of capitalization bonds. According to the National Capitalization Federation (FenaCap, 2013), the *Traditional* type is the most common, accounting for 81 percent of all sales in this segment. This bond returns the total amount paid by the underwriter, provided there were no late payments in the installment plan, if this was the selected form of payment. The second most common is the *Incentive* type, which represents 11 percent of all sales. Businesses use these bonds in sales campaigns or loyalty programs, passing the rights to the drawings on to the respective sales staff or clients. The *Popular* capitalization bond focuses more on the drawing aspect. Accordingly, the issuer only returns 50 percent of the payments when the bond matures. This type represents 8 percent of the segment's sales. Finally, the *Planned Purchase* bond is associated with a given product or service, but it is no longer offered in the market.

In Brazil, this product is regulated by the Superintendence of Private Insurance (Superintendência de Seguros Privados [SUSEP],

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2015), established by the Ministry of Finance in 1966. Today, there are 17 companies that offer this type of product in the market (FenaCap, 2015a), including the country's most important private and government-owned banks. Table 1 shows that revenues from capitalization bonds have grown year after year in Brazil, reaching R$21 billion (R$2 ~ US$1) in 2013, or 0.43 percent of the country's GDP, which is one of the world's 10 largest GDPs. According to Portocarrero (2008), capitalization bonds grant individuals with limited funds access to financial products, as they require small contributions. Since *Traditional* capitalization bonds have fixed maturities, usually 12 months, and regular drawings, they attract the savings of individuals who would not otherwise invest their money (FenaCap, 2015a, 2015b; Portocarrero, 2008).

Table 1. **Brazilian capitalization market across the time**

Year	Revenues (R$ thousand)	Share of GDP (%)
2001	4,789,563	0.37
2002	5,217,204	0.35
2003	6,022,577	0.35
2004	6,601,776	0.34
2005	6,910,339	0.32
2006	7,111,434	0.30
2007	7,828,951	0.29
2008	9,015,379	0.30
2009	10,104,143	0.31
2010	11,780,949	0.31
2011	14,081,268	0.34
2012	16,585,517	0.38
2013	20,979,849	0.43

Source: Relatório de Análise e Acompanhamento dos Mercados Supervisionado – SUSEP (2016).

As such, capitalization bonds are usually compared to savings accounts (commonly just called savings, or *poupança*). Savings are Brazil's most popular investment. These accounts are easy to use, have low risk, are exempt from taxes or bank fees for individuals, and require no minimum amounts for deposits or withdrawals. Before May 3, 2012, savings accounts had their monthly yield fixed at 0.5 percent, plus the daily Reference Rate (TR) for the period. Federal Provisional Measure no. 567, followed by Law no. 12703, determined new rules for savings accounts. Their yield would vary according to the risk-free interest rate (inflation adjustment through the TR was not changed), approximated by the rate offered to Brazilian treasury note investors. Thus, savings deposits after May 4, 2012 earned 70 percent of the monthly-adjusted annual risk free (called Selic) rate when the latter dropped to 8.5 percent a year or below.

If not, the yield of savings would follow the old rules. Despite the modified rules, the risk-free rate fell below the limit only in few months. Combined with the fact that the data in this study refer mostly to the year prior to this change and only to some months afterwards, the following comparisons use the old rules for savings accounts. However, savings accounts and capitalization bonds have one major difference. In the former, the interest rate and the TR apply to the total amount invested. Although capitalization bonds use the same interest and inflation rates, these are only applied to the share of investment actually capitalized, or the capitalization share.

The capitalization bond rationale

The possibility of compensation drives individuals' willingness to forgo interest on their capital and accept a series of restrictions. To further analyze this, we use an example of *Ourocap Torcida do Brasil*, a capitalization bond with a single payment and 36-month maturity.

These bonds cost between R$600 and R$5,000. After buyers make a single payment, for the following 36 months, they are eligible for a prize based on the drawings of Brazil's federal lottery, using a lucky number assigned to each bond, from 000.000 to 999,999. The drawings are divided into five types. Accordingly, each bond is eligible for a total of 199 drawings until maturity. Even if a bond wins a prize under one type of drawing, it is still eligible for a prize under the other drawings.

Assuming a total of n drawings of a same type, which gives a prize of αv, where v is the value (price) of the bond. The probability of the bond winning k times, with $k = 0,1,\ldots n$ is given by a binomial distribution of parameters n and p, where p represents the probability of winning one of the drawings. In this case, p is the ratio between the quantity of numbers drawn and the quantity of bonds available (one million). Thus, if r_i denotes the return of type i, the expected value of r_i can be calculated by:

$$r_i] = \frac{\sum_{k=0}^{n} k\alpha v \, P(being\ drawn\ k\ times)}{v} = \alpha \sum_{k=0^k}^{n} \binom{n}{k} p^k (1-p)^{n-k} = \alpha np \qquad (1.1)$$

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Under type I, there are drawings on the first four Saturdays of each month ($n = 36 * 4 = 144$) and the prize is 10 times the single payment ($\alpha = 10$). Based on the drawings of the federal lottery, 10 different lucky numbers are randomly selected in each drawing ($p = 10/1{,}000{,}000$). The value expected by r_1 can be calculated using the formula 1.1, which yields:

$$E[r_1] = 10 \cdot 144 \cdot 0.00001 = 1.44\% \quad (1.2)$$

Under type II, there are monthly drawings on the first Saturday of each month ($n = 36$) and the prize is 20 times the single payment $\alpha = 20$. Based on the federal lottery drawings, 15 different lucky numbers are selected in each drawing ($p = 15/1{,}000{,}000$). Using the formula 1.1, the expected value of r_2 is:

$$E[r_2] = 20 \cdot 36 \cdot 0.00015 = 1.08\% \quad (1.3)$$

Type III features quarterly drawings $n = 12$, and the prizes are equivalent to 200 times the single payment ($\alpha = 200$). Two different lucky numbers are selected in each drawing ($p = 2/1{,}000{,}000$). Using the formula 1.1, the expected value of r_3 is:

$$E[r_3] = 200 \cdot 12 \cdot 0.00002 = 0.48\% \quad (1.4)$$

Type IV drawings select only one number ($p = 1/1{,}000{,}000$), and the prize is equivalent to 1,000 times the single payment ($\alpha = 1{,}000$). The drawings happen twice a year ($n = 6$). Using the formula 1.1, we have:

$$E[r_4] = 1{,}000 \cdot 6 \cdot 000001 = 0.60\% \quad (1.5)$$

Finally, type V has only one drawing ($n = 1$) of six different lucky numbers ($p = 6/1{,}000{,}000$), and the prize is equivalent to 2,000 times the single payment ($\alpha = 2{,}000$). The expected value of r_5, calculated using the formula 1.1, is:

$$E[r_5] = 2{,}000 \cdot 1 \cdot 0.00006 = 1.20\% \quad (1.6)$$

Therefore, the expected return for the drawings in this bond is given by the sum of the values in equations 1.2 to 1.6:

$$E\left[\sum_{i=1}^{5} r_i\right] = \sum_{i=1}^{5} E[r_i] = 4.80\% \quad (1.7)$$

The Brazilian Tax Code imposes a 30 percent income tax rate on prizes obtained through capitalization bond drawings. Accordingly, the expected net amount is:

$$0.7 \cdot \sum_{i=1}^{5} E[r_i] = 0.7 \cdot 4.80\% = 3.36\% \quad (1.8)$$

In comparison with an amount invested in a savings account, and disregarding inflation adjustment which is common to both investments, considering only the monthly capitalization of 0.5 percent over 36 months, final earnings net of taxes and fees would result in a total interest of:

$$(1 + 0.5\%)^{36} = 19.67\% \quad (1.9)$$

Financial literacy and selecting alternatives

According to the expected utility theory (Neumann & Morgenstem, 1947), individuals select lotteries to maximize the expected value of the outcome. From this perspective, there is no reason for a rational being, even a risk-neutral one, to trade a lottery that certainly pays nearly 20 percent (equation 1.9) for another, with a higher risk and an expected return of 3.36 percent (equation 1.8). How then, can we explain the consumption of a product with a negative prize-risk ratio?

Ever since Allais (1952) demonstrated flaws in the assumption of a linear expected utility theory, many economists have investigated this matter. Lopes and Oden (1999) use theory SP/A to defend that risk choices are based on two criteria, a risk-return assessment (the SP criterion) and a comparison of probabilities, to achieve an aspiration level (the A criterion).

According to this approach, an individual could prefer foregoing a certain 20 percent he or she would earn in a savings account and buy this capitalization bond, if this individual's assessment of the probabilities enable him or her, in some way, to assume the chance of winning a prize above a given level. In other words, based on a personal aspiration and an assessment of the possibility of winning, an individual may behave like a "risk lover." The role of aspiration in selecting lotteries is assessed by experiments in which the respondents know the distributions of probability of these lotteries, numerically and/or graphically (Lopes, 2016; Lopes & Oden, 1999).

There seem to be no reasons to believe that the level of aspiration can satisfactorily explain the decision to choose the product described above. First, investors need to have advanced statistical knowledge to assess their probability distribution, a task complicated by the way prices are presented. This is illustrated by the contract that describes the drawing rules for type I bonds (Ourocap Torcida do Brasil):

Type I: Weekly drawings held on the first four (4) Saturdays of each month. This event will offer ten (10) prizes equivalent to ten (10) times the single payment ofto bonds whose lucky numbers printed on the bonds matches the following combinations:

- The first winning bond will be that, whose lucky number matches the number formed by the second-to-last algorism of the first prize of the Brazilian federal lottery, followed by the column comprised of the last algorism of the first to fifth prizes in the same drawing of the federal lottery, read vertically from top to bottom.

- The nine (9) other winning bonds will be those whose lucky numbers match the numbers formed by adding one (1) unit to the first algorism of the number formed in the prior step, and so on.

- Adding one (1) unit to the algorism nine (9) of the hundred thousandth position of the numbers formed in the prior steps will result in zero (0).

Second, several federal lotteries with explicitly reasonable prices (between R$1 and R$5) offering higher returns than capitalization bonds should be analyzed as direct competitors. By combining an investment in a savings account and federal lotteries, an individual could reap the same benefits at lower costs and with fewer penalties (e.g., waiting periods, fines, etc.).

Even if the aspiration level influences that choice, if the buyer cannot compare the chances of winning and the cost of the lottery (associated with the bond) across products, it would seem more reasonable that financial literacy is a key determinant. This may be explained by the way the product is structured and the way it is sold.

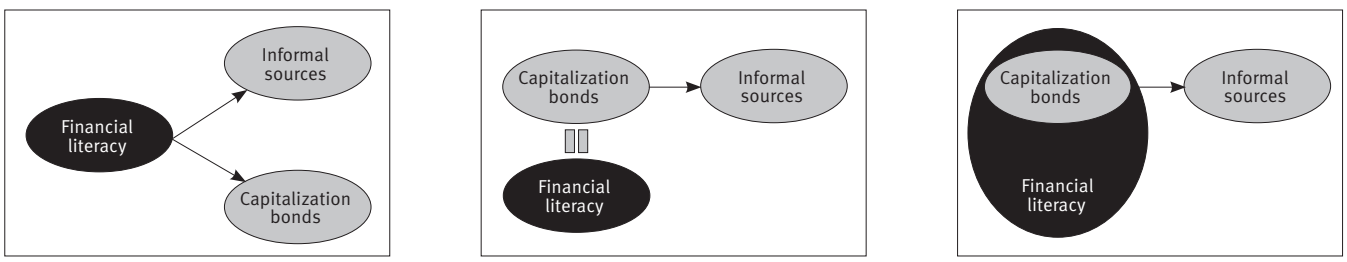
When capitalization bonds adopt a monthly interest rate (0.5%) and an Inflation-Adjustment Rate similar to that offered by savings accounts, this could confuse investors. Internal documents of large banks used to train sales managers of capitalization bonds warn that these bonds should not be marketed as investments or alternatives to savings accounts. Yet they recommend managers to emphasize that the return is comparable to savings accounts and that clients will receive their initial investment amount adjusted for inflation while still competing for prizes.

According to the OECD (2013), many factors, including available time to decide, the alternatives for which information and advice are available, and past experience, influence individuals' product choice. However, if investors make informed decisions, preferably consulting independent advisors, they will more likely choose products that meet their needs more feasibly and less likely buy inappropriate products or be deceived by poorly presented contracts (e.g., misselling). This report from OECD (2013) highlights the benefits financial literacy plays in comparing products, seeking unbiased opinions, and assessing the adequacy of financial products. As such, capitalization bond investors can be identified as individuals with low financial literacy. However, this proxy presents some limitations.

Limitations of a capitalization bond as a financial literacy proxy

Although the associations between financial literacy and financial results are potentially endogenous, several authors have tried to show the causal mechanism between them (Behrman, Mitchell, Soo, & Bravo, 2010; Bernheim & Garrett, 2001; Klapper, Lusardi, & Panos, 2013; Lusardi & Mitchell, 2009, 2011; Rooij, Lusardi, & Alessie, 2011b). However, financial literacy would affect both savings bonds and informal loans simultaneously, leading to possible endogeneity in the current study (Figure 1-a). On the other hand, we understand that the reasonableness of the proxy for financial literacy and methodological procedures can lessen such concerns (Figure 1-b).

Figure 1. **Relation between capitalization bonds, financial literacy, and informal sources**



a) Endogeneity (b) Proxy (c) Limitations

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First, it should be noted that financial literacy is not the only determinant of informal borrowing. Credit availability in the formal market, extraordinary expenses (e.g., health, marriage, accidents, etc.), and loss of job or income volatility are some important factors.

On the other hand, capitalization bond investment is not related to a lack of alternatives. On the contrary, as described previously, these securities are instruments for saving money; and at least one very widespread alternative in the Brazilian market, the savings account, presents less costly contractual conditions, lower acquisition cost, and superior profitability. Still in the list of alternative products, the Brazilian federal government offers several lotteries with very popular prices and higher premiums than the capitalization bonds.

Thus, the choice of the proxy seems reasonable. However, the main criticism that may arise regarding the adoption of this proxy is due to non-consumers of these securities, since the individual may have low financial literacy and not consume them because they do not have enough money to buy these securities, have the intention of saving, or want to be inserted in the financial market. However, this should not be a very big concern. One should keep in mind that any significant effect representing the propensity of financial illiterates in informal lending can and should be underestimated, after all, as some individuals who are financially illiterate have not been identified. The effect may be more relevant than that reported (figure 1-c).

Overall, we believe that in the scope of this study, the adopted proxy is suitable, provided that the different effects of capitalization bond consumption on financial market inclusion can be compared, as these securities are mainly traded in bank branches. To this end, individuals will be subdivided into three groups, (i) those who have not borrowed, (ii) those who have borrowed at banks, and (iii) those who have used informal loans. The details of this method are presented in the following method section.

METHOD

Data gathering and variables

We used data from Bankable Frontier Associates and the Bill & Melinda Gates Foundation's "National survey on financial inclusion and the use of banking correspondents in Brazil," conducted between August and December, 2012. Information was collected using a printed questionnaire, which would take about an hour to fill. Participation was voluntary. That survey set out to select a national representative sample of Brazilian households. As determined by Cull and Scott (2010), information about financial usage provided by the household head is more complete and accurate than information from an interview with a randomly selected individual. Therefore, a set of initial questions were addressed to the eldest member of the house, to ensure a financially aware respondent. As the sample selection was not random, results are only representative of the most financially knowledgeable Brazilians.

In Section 8 of the questionnaire, individuals answered about how they used loans from different sources, including the informal market. To build our database, we considered respondents, who in the prior 12 months did not use any type of credit or who got loans from at least one of the following sources: banks, moneylenders, or acquaintances, with or without interest charges. The term "acquaintances" means people of the individual's circle, such as friends, family, or even neighbors. Thus, our sample has 2,023 loan observations, originating from 1,853 different individuals. Table 2 shows the share of statements involving the use of loans in relation to the segments surveyed. Money obtained from acquaintances or moneylenders was placed in the *Informal* category.

The mean age of the interviewees is 48, ranging from 17 to 94. Out of this total, 52 percent are men and 27 percent are retirees. Additionally, 92 percent of the respondents claimed they took household budget decisions. This is not surprising because interviewers were recommended to visit households up to thrice, to interview such individuals. However, only 62 percent have a personal bank account (e.g., simple, current, or savings accounts).

Average reported monthly wage was R$912, which represents 1.47 monthly minimum wages in Brazil. Less than 6 percent of those interviewed had a college degree and only 20 percent graduated from middle (high) school. The average household has 3.4 individuals. There is an average of 0.9 individuals under 16 in each household. Brazil's North Region is home to 20 percent of the interviewees; the Northeast, 25 percent; the Center-West, 8 percent; the Southeast, 32 percent; and the South, 14 percent.

Regarding their financial behaviors, about 42 percent of the respondents admitted they had already made one late payment, while 9 percent said they had a poor credit history. Nearly 20 percent were capitalization bond holders or had been so in the past. Table 3 shows the percentage of consumption of capitalization bonds within the different credit segments. We see an increase in the percentage of the category of those claiming they had not used loans during the period for the *Bank loan* category.

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Table 2. **Use of credit in the prior 12 months**

	Whole sample		Capitalization bonds consumers	
Credit	Amount	Share	Amount	Share
Did not use	1,142	56.5%	138	12%
Bank	614	30.4%	173	28%
Informal	267	13.2%	101	38%
Acquaintances – WITHOUT	183	9.0%	66	36%
Acquaintances – WITH	64	3.2%	26	41%
Moneylenders	20	1.0%	9	45%
Total	**2,023**	**100%**	**412**	**20%**

Did not use: No type of credit in the past 12 months. Bank: loans or financing from a bank in the prior 12 months (includes face-to-face loan offered through the bank). Acquaintances – WITHOUT: a loan from a friend, neighbor, or relative without interest in the prior 12 months. Acquaintances – WITH: a loan from a friend, neighbor, or relative with interest in the prior 12 months. Moneylenders: a loan from a moneylender in the prior 12 months. Informal: credit from acquaintances, with or without interest, or from moneylenders in the prior 12 months. Consumption of capitalization bonds: Reported having, at the time of the interview or before, a capitalization bond. The percentages are in relation to the loan category.

This increase might be explained by financial inclusion. Individuals with bank accounts tend to use more bank loans and buy capitalization bonds, mostly sold through bank branches (Angst & de Abreu, 2007). This argument is supported by the fact that bank account holders comprised only 48 percent of those not using loans, but 89 percent of those taking bank loans. The second variation we see in Table 2, from the bank credit segment to the informal credit segment, matches the hypothesis we would like to test in this study: whether individuals with lower financial literacy levels (consumers of capitalization bonds) are more likely to use informal sources of loan. To confirm this hypothesis, we controlled co-variables that represent the financial and individual behaviors, financial inclusion, loan demand and restriction, and social and demographic variables. Table 3 describes the variables used in the model.

Specification of the model

The observations were classified into three categories of interest: 0 = No loan, 1 = Bank loan, 2 = Informal loan. We used a multinomial logistic regression to analyze the likelihood of these three types, which is ideal for non-ordinal and polytomic category dependent variables. The values attributed to each category (0 = No loan, 1 = Bank loan, 2 = Informal loan) are arbitrary (i.e., the model does not assume that 0 < 1 < 2). The probability of the y dependent variable assuming the value i is given by (2.1):

$$Pr(y=i)=\frac{e^{x\beta_i}}{e^{X\beta_i}+\sum_{j\neq i}e^{X\beta_j}}. \quad (2.1)$$

To uniquely identify vectors β_i, we considered some of them nil, which then became the base category. The estimated coefficients represent changes in relation to this base category. Where y assumes three values, such as when i = 0, 1, 2, and considering $i=0$ as the base category, the probabilities are given by (2.2):

$$Pr(y=0)=\frac{1}{1+e^{X\beta_1}+e^{X\beta_2}}, Pr(y=1)=\frac{e^{X\beta_1}}{1+e^{X\beta_1}+e^{X\beta_2}}, Pr(y=2)=\frac{e^{X\beta_2}}{1+e^{X\beta_1}+e^{X\beta_2}}. \quad (2.2)$$

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Table 3. **Independent variables considered in the model**

Variable	Description	Mean	Std. Dev.
Capitalization bond (D)	Do you have or did you have a capitalization bond?	0.197	0.398
Budget decision maker (D)	Do you make most family budget decisions?	0.921	0.270
Bank account (D)	Do you have any personal bank account (simple, current, or savings account)?	0.622	0.485
Late payment (D)	Have you ever made a late payment?	0.418	0.493
Poor credit history (D)	Do you have a poor credit history right now?	0.092	0.288
Age	Age of the respondent (in years)	48.33	15.77
Man (D)	Masculine gender?	0.525	0.499
Retiree (D)	Are you a retiree?	0.272	0.445
Income	Monthly income of the respondent (in reais) (a)	911.75	1,424.98
Expenses	Monthly expenses (in reais). (b)	332.89	1,275.77
Household members	Number of residents in the household.	3.41	1.70
Under 16	Number of residents under 16 in the household.	0.878	1.181
National region(D):			
NO	North	0.197	0.398
NE	Northeast	0.250	0.433
CO	Center-West	0.083	0.277
SE	Southeast	0.325	0.468
SU	South	0.144	0.352
Education (D): What was the highest school level you completed?			
Educ 0	Never went to school or never completed primary school.	0.241	0.428
Educ 1	Primary school	0.498	0.500
Educ 2	Middle (high) school	0.198	0.398
Educ 3	Higher education	0.059	0.236

Notes: (D) indicates *dummy* variables with value of 1 in case yes and 0 in case no. [a]The *Income* variable considers earnings of the respondent from work, social security, or pension fund, as well as other sources such as rent, the federal severance indemnity fund (Fundo de Garantia do Tempo de Serviço - FGTS), government scholarships, inheritances, donations, etc. The amount corresponds to the monthly average for the past 12 months. [b]The *Expenses* variable represents the average sum of expenses with utilities, condominium fees, rent, digital services packages, landline telephones, cell phones (prepaid and postpaid), subscription TV, internet, school tuitions, mortgage payments, consumer loan payments, and insurance payments.

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FINDINGS

Table 4 shows the estimates for the multinomial logistic regression coefficients, in which the dependent variable (loan category) assumes three possibilities: 0 = No loan, for the individuals who have not reported using any type of loan in the 12 months prior to the completing the questionnaire; 1 = Bank loan, for those who reported using bank loans or financing in- the 12 months prior to the questionnaire; and 2 = Informal loan, for those who reported loans from acquaintances – with or without interest – or from moneylenders in the 12 months prior to the questionnaire.

In the first two columns of Table 4, we see the coefficients of the model with the *No loan* (0) category used as the base. The last column shows the coefficients of the same model, only changing the base category to *Bank loan* (1). In the base 1 (*Bank credit*) category, the coefficients related to level 0 (No loan) are not reported, because they are precisely the same (in magnitude and significance) as those in the first column, but with inverted signs.

Table 4. **Multinomial logistic regression**

Base category:	**No credit (0)**	**No credit (0)**	**Bank credit (1)**
Dependent variable:	**Bank credit (1)**	**Informal credit (2)**	**Informal credit (2)**
Capitalization bond	0.614***	1.578***	0.963***
Budget decision maker	0.371	-0.509*	-0.879**
Bank account	1.432***	0.619***	-0.813***
Late payment	0.380***	0.859***	0.479**
Poor credit history	-0.048	0.439	0.487*
Age	0.105***	0.047	-0.057
Age²	-0.00115***	-0.00073*	0.00042
Man	-0.0336	-0.147	-0.113
Retiree	0.755***	-0.076	-0.831***
Household members	0.150**	-0.213**	-0.362***
Under 16	-0.130	0.347**	0.477***
NO	-0.822***	-0.233	1.054***
NE	-0.479**	0.866**	1.345***
CO	-0.610**	0.045	0.655
SE	-0.433**	0.799**	1 232***
Ln(Income)	0.185*	0.010	-0.175
Ln(Expenses)	0.245***	0.195**	-0.050
Educ 0	-0.00371	0.560	0.564
Educ 1	-0.248	0.191	0.439
Educ 2	-0.303	0.075	0.378
Constant	-6.658***	-3.983***	2.675*
N:	1,463		
Wald chi2(40):	369.90***		
Pseudo R2:	0.1740		

Notes: Multinomial logistic regression coefficients; standard errors adjusted to 1,326 *clusters* of individuals; p-value: *<0.10, **<0.05, ***<0.01.

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On the demand side of the loan market, age is one of the most important factors, according to the life-cycle theory (Modigliani & Brumberg, 1954). As this theory suggests, people accumulate wealth early in their lives to ease on consumption and maintain their standard of living after retirement. Accordingly, young individuals tend to get into debt because of their expectations of increased income and consumption in the future. As age advances, income increases and willingness to borrow decreases.

Consequently, the ratio between loan demand and age will have an inverted U shape. To capture this non-linear relation, we included the age quadratic and linear terms as independent variables. These estimates are consistent with the theory when we look at bank loan in comparison with those who have not gotten into debt. However, *Age* and Age^2 cannot explain loan taking from informal sources.

Even though studies suggest gender dependence in choosing financial products (Fonseca, Mullen, Zamarro, & Zissimopoulos, 2012; Lusardi & Mitchell, 2008; OECD, 2013), no significant effect was observed for the *Man* variable. The *Retiree* variable indicates the role of consigned credit in encouraging bank credit; it reduces interest rates and credit restrictions because it allows payments to be deducted directly from the paycheck. This variable's coefficient in the third column suggests that consigned credit reduces the chances of a retiree in need of credit resorting to informal sources. That is, although any employee can access payroll deductible loans, they are targeted at the elderly, since the default risk is practically zero, as the national pension system provides retirees' income.

The family structure is an important predictor to explain loan taking from informal sources. Larger families are less likely to use informal loans than bank loans. However, when these families have children under 16, this situation is inverted and they become more vulnerable to the informal market. Perhaps this behavior can be explained by household dwellers having a larger (or smaller) share of the family budget. Residents of Brazil's North, Northeast, and Southeast regions are more likely to resort to informal loans than those living in the South Region, who use more formal loans. The South region of Brazil stands out in terms of the penetration rate of credit unions, more often called cooperatives in Brazil (Lhacer, 2012; Garcia & Lhacer, 2012). As of 2015, around 90 percent of South municipalities have credit units, more than twice the average of Brazil as a whole, which was 44 percent in the same year (Banco Central do Brasil, 2016). Therefore, the higher presence of cooperatives seems to be the main reason for having more access to formal credit in the South.

The effect of income on loan taking is ambiguous. Individuals with lower income need more loans than those earning more. However, creditors tend to favor borrowers who can better pay their debts. The positive and significant ln*Income* coefficient for taking loans at banks in relation to those not taking loans suggests that income restricts credit more than it levels demand. This might make sense for lower-income individuals and is consistent with the mean reported salary, 1.47 minimum monthly wages.

The effect of Expenses is as expected, as families with more expenses more likely need loans (formal or informal). However, this variable is not able to explain the choice between these loan alternatives. Note that the estimated model used only 1,463 observations. This was because of an expressive flaw in the *Expenses* and *Variable Income* variables. Hence, we re-estimate the model by removing these variables. Indeed, education dummies also failed to present significant effects and were removed from the next regression (Table 5). According to Lusardi and Mitchell (2011b), education is far from being a good proxy for financial knowledge. The coefficients and their significance did not change in this re-estimation with the complete sample (2,021 observations).

Having a bank account is one of the most basic requirements for an individual to participate in the financial market and access a wide range of products and services (Banco Central do Brasil, 2011; Demirgüç-Kunt & Klapper, 2012). The *Bank Account* presented significant coefficients in both estimations (Tables 4 and 5). Individuals with bank accounts are more likely to incur debt, both from banks as well as from informal sources. But they are much less likely to obtain loans from the informal market than from banks. Individuals with a poor credit history are, as one would expect, more likely to resort to informal sources.

We wrap up this discussion with the three variables that can provide the most information regarding the impact of financial literacy. In addition to the main proxy used here, these are the *Late Payment* and *Budget Decision Maker* variables. We expect that the individual in charge of the household budget has greater financial expertise and access to or affinity with financial products and services. We should point out that the individual most familiar with finances in the household does not necessarily have good financial literacy. At any rate, the coefficients point to this individual as the one least likely to use informal sources of loan.

Individuals who have paid their bills late are more susceptible to requiring loans from either source, but they are more likely to resort to the informal market than to banks. Since this is controlled by the *Poor Credit History* variable, this result can be explained by a fragile financial behavior, where an individual cannot properly gauge the volume of debt or interest level, jeopardizing the household's finances. In line with these findings are the effects of the consumption of capitalization bonds. To support this analysis, we computed the mean marginal effects on the probability of observing the results for a dependent variable (Table 6).

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Table 5. **Multinomial logistic regression**

Base category:	**Non credit (0)**	**Non credit (0)**	**Bank credit (1)**
Dependent variable:	**Bank credit (1)**	**Informal credit (2)**	**Informal credit (2)**
Capitalization bond	0.666***	1.302***	0.637***
Budget decision maker	0.347	-0.401	-0.748**
Bank account	1 833***	0.668***	-1.165***
Late payment	0.493***	1.007***	0.514***
Poor credit history	-0.013	0.534**	0.547**
Age	0.083***	0.020	-0.063*
Age²	-0.00098***	-0.00040	0.00058
Man	-0.056	-0.127	-0.183
Retiree	0.846***	-0.075	-0.921***
Household members	0.143***	-0.017	-0.160**
Under 16	-0,161**	0.105	0,266**
NO	-1.118***	0.015	1.133***
NE	-0.797***	0.683*	1.480***
CO	-0.554**	0.274	0.829**
SE	-0.644***	0.625*	1.269***
Constant	-4.065***	-2.790***	1.275
N: Wald chi2(40): Pseudo R2:	2,021 444.81*** 0.1664		

Notes: Multinomial logistic regression coefficients; standard errors adjusted to 1,851 *clusters* of individuals; p-value: *‹0.10, **‹0.05, ***‹0.01.

We can see that individuals who buy capitalization bonds are, on average, 16.3 percentage points more likely to resort to the informal loan market. The other estimates are in line with prior discussions. We also calculated the probability of buyers and non-buyers of capitalization bonds using informal sources of loan, maintaining the other variables in their means. The result was 26% ± 6.6%, with 95% of confidence, for capitalization bond consumers, against 8.8% ± 2.6%, also with 95% of confidence, for non-consumers.

The marginal effect of each child under the age of 16 is 4 percentage points. To examine family structure's role in the probability of using informal sources, we re-estimate the confidence intervals (for consumers and non-consumers of capitalization bonds) considering a family of five members, with three children under 16. The result was 35% ± 12%, with 95% confidence, for capitalization bond consumers, against 13% ± 6%, also with 95% confidence, for non-consumers. Figure 2 shows the evolution of these confidence intervals as the family structure changes.

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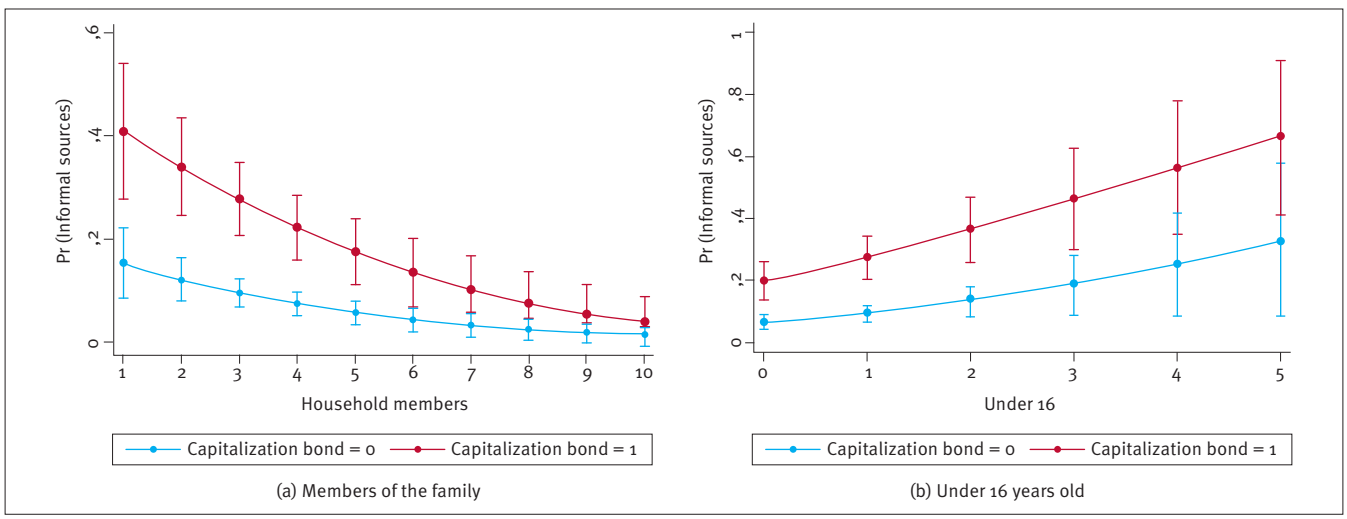
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Table 6. **Marginal effects**

Dependent variable:	No credit (0)	Bank credit (1)	Informal credit (2)
Capitalization bond	**-0.193*** **	**0.029**	**0.163*** **
Budget decision maker	-0.012	0.089*	-0.077**
Bank account	-0.245***	0.235***	0.010
Late payment	-0.105***	0.034	0.071***
Poor credit history	-0.021	-0.029	0.051*
Age	0.0029**	-0.0012	-0.0017*
Man	0.013	0.0002	-0.013
Retiree	-0.104**	0.145***	-0.041*
Household members	-0.009	0.037***	-0.028***
Under 16	0.0014	-0.039**	0.041***
NO	0.090*	-0.151***	0.061
NE	0.002	-0.125***	0.123***
CO	0.077	-0.107**	0.030
SE	0.007	-0.112***	0.105***
Ln(Income)	-0.026	0.034*	-0.007
Ln(Expenses)	-0.045***	0.037***	0.009
Educ 0	-0.034	-0.027	0.062
Educ 1	0.024	-0.054	0.030
Educ 2	0.037	-0.058	0.020
N:	1,463		

Notes: Mean marginal effects on the probability of observing a result in the dependent variable; p-value: *‹0.10, **‹0.05, ***‹0.01.º

Figure 2. **Probability of using informal credit sources**



Notes: Prediction of the probability of consumers (1) and non-consumers (0) of capitalization bonds using informal financing. The chart range shows a confidence interval of 95 percent.

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CONCLUDING REMARKS

The standard literature on the informal loan market considers that information asymmetry is the main driver behind informal loans. The idea is that information asymmetry results in the requirement of collateral, thereby restricting loans and encouraging informality, which is at an advantage in terms of information and collection techniques. In this study, the authors emphasized the role financial literacy can perform in this process.

Using variables that represent loan demand and restrictions, we see that low financial literacy is responsible for increasing the probability of individuals using informal loans. For example, we find a greater effect on the tendency of individuals with low financial literacy to use informal loan sources than of individuals with a poor credit history.

Our findings are in line with those of OECD (2013), which say that individuals with lower levels of financial literacy are less aware of alternatives and more susceptible to misselling, suggesting that for these reasons, they tend to rely more on friends and families for their loans. The weight of financial literacy as an important predictor of credit behavior (Cole et al., 2011; Lusardi & Tufano, 2009) is, once more, reinforced by our study. Additionally, it emphasizes public policies designed to improve financial literacy, leading to the wellbeing of society.

To identify individuals with little financial literacy, we used a typical Brazilian financial product, capitalization bonds, as a proxy. Capitalization bonds are mainly sold in bank branches, and managers, who advice clients, undergo training and have goals to promote investment in these bonds.

The product is designed to appear as a sort of savings account, with the added benefit of offering prizes through drawings during the term of the bond. In practice, however, the product should not be considered as an investment option because it only offers a return if the bond wins a prize. The product's contract does not describe the cost or the chances of the buyer winning the prize, something that requires statistical and financial calculations. Moreover, a series of restrictions and penalties are imposed in case the buyer interrupts payment or redeems soon. Since the proxy variable does not identify individuals with lower levels of financial literacy, the effects attributed to financial literacy may be underestimated.

According to Willis (2008), for some consumers, financial literacy seems to increase confidence without improving ability, leading to worse decisions. The OECD (2013) advocates that financial products should be designed to provide users with safe and effective solutions for their needs. Regulations should be as transparent as possible and consumer defense authorities should protect consumers from any unfair practices.

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PROCESS-BASED MODELLING OF THE INFORMATION SYSTEMS RESISTANCE PHENOMENON

Modelagem processual do fenômeno da resistência a sistemas de informação

Modelo procesual del fenómeno de resistencia a los sistemas de información

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ABSTRACT

This article aims to propose a process-based modelling of the Information Systems resistance phenomenon. Accordingly, we wrote a literature review to categorize the main points set forth by the extant scientific texts relating to the process taxonomy: input, output, players, and the resistance phenomenon. Based on the modelling, this article provides theoretical implications in terms of improving the understanding of the phenomenon among academicians as well as practical and managerial suggestions related to its mitigation.

KEYWORDS | Information systems resistance, information system, information systems resistance process, information technology, model.

RESUMO

O presente artigo tem por objetivo propor a modelagem processual do fenômeno da resistência a sistemas de informação (SI). Para atingir esse objetivo, a partir de revisão de literatura acerca dessa temática, os principais pontos levantados nos artigos científicos analisados são categorizados segundo a taxonomia de processo: entradas, saídas, atores e o fenômeno da resistência. Ao final, como decorrência da modelagem processual proposta, são apresentadas as implicações acadêmicas e gerenciais derivadas deste trabalho, de modo que a resistência a SI seja mais bem compreendida pelos acadêmicos e mitigada pelos praticantes.

PALAVRAS-CHAVE | *Resistência a sistemas de informação, sistemas de informação, processo de resistência a sistemas de informação, tecnologia da informação, modelo.*

RESUMEN

El presente artículo tiene como objetivo proponer el modelo procesual del fenómeno de resistencia a los sistemas de información (SI). Para alcanzar dicho objetivo, a partir de la revisión de literatura acerca de esa temática, los principales puntos planteados en los artículos científicos analizados son categorizados según la taxonomía del proceso: entradas, salidas, actores y fenómeno de resistencia. Finalmente, como resultado del modelo procesual propuesto, se presentan las implicaciones académicas y gerenciales derivadas de este trabajo, de modo que la resistencia a los SI sea mejor comprendida por los académicos y mitigada por los practicantes.

PALABRAS CLAVE | *Resistencia a los sistemas de información, sistemas de información, proceso de resistencia a los si, tecnología de la información, modelo.*

INTRODUCTION

The information technology (IT) market in Brazil was worth 60 billion dollars in 2014, placing it in the seventh position in the world in terms of investment in this sector, and first in Latin America (ABES, 2015). The world market corresponds to about 2.09 trillion dollars, broken down as 49% in hardware, 20% in software, and 31% in IT-related services (Associação Brasileira das Empresas de Software [ABES], 2015). In addition, growth in IT investment in Brazil—6.7% from 2013 to 2014 (ABES, 2015)—shows that companies are continuing to invest in technology. However, the benefits of investing in information systems (IS) are intangible, and there are conflicting positions on the actual return on IT expenditure (Im, Dow, & Grover, 2001; Karr-Wisnieski & Lu, 2010; Tambe & Hitt, 2012). Even more worrying is the fact that approximately 70% of the world's IS projects fail in their implementation (Fortune & Peters, 2005). Because IT investment depends on structures and organizational culture to be effectively received and used (Engelbert & Graeml, 2013), an understanding of information systems resistance (ISR)—defined as "behaviors intended to prevent the implementation or use of a system or to prevent system designers from achieving their objectives" (Markus, 1983, p.2)—is critical for IT investment to generate positive returns.

In 1977, Bostrom and Heinen (1977) began their reflections on the phenomenon of ISR. Nonetheless, to date, the discussion of the problem appears to revolve mainly around its causes, as initially identified by Lin (1994) more than 20 years ago. However, as an organizational phenomenon, it is necessary that ISR be treated as a cognitive process, endowed with context, actors, activities, and temporariness (Bloom, Garicano, Sadun, & Reenen, 2014; Ericsson & Simon, 1980).

Based on this premise, the present work aims to develop a procedural modeling of the ISR phenomenon, from its emergence to its final consequences, by mapping its context, actors, activities, and temporariness. Therefore, we carried out a review of the literature on this subject, analyzing its main objectives and contributions. Then, through the basic components of the process, a procedural modeling is proposed. Thus, the research question of this article is as follows: How does the process of resistance to IS develop in organizations?

Accordingly, from an academic viewpoint, we intend this material presented here to fill a gap concerning the understanding of ISR as an evolving temporal process, and not just as a phenomenon derived from critical factors. In addition, from a managerial point of view, this work aims to provide practitioners with an integrated and systemic vision of what should be done to avoid, or at least mitigate, ISR in organizations.

METHODOLOGICAL APPROACH

This article is of a theoretical-exploratory nature. In order to propose a procedural modeling of the ISR phenomenon, we started with a bibliographic search on the topic of resistance to IS, and developed a theoretical triangulation of the conceptual approaches (Patton, 2002; Scandura & Williams, 2000; Yin, 2005).

Initially, we carried out a literature review on the evolution of the concept of resistance to IS presented in the following section, based on bibliographical research of articles published in scientific journals, as well as theses and dissertations (Webster & Watson, 2002).

Our deepened understanding of the topic based on this research allowed us to critically reflect on the analyzed approaches. In this manner, we could identify the patterns of similarity and contradictions existing between them, and propose a procedural modeling of the phenomenon of resistance to IS.

For the critical analysis of the articles studied, we employed the principle of triangulation (Patton, 2002; Yin, 2005). In the social sciences, triangulation can be defined as a research strategy based on the use of several approaches to investigate the same phenomenon (Vergara, 2004). Thus, triangulation can be adopted to obtain new perspectives related to the object being studied (Vergara, 2004).

In particular, in the present article, we adopted this triangulation approach (Patton, 2002; Vergara, 2004; Yin, 2005) to analyze and compare the different theoretical perspectives of each ISR article studied, with the aim of generating a procedural model.

Our theoretical review for this article identified papers published in the major journals in the IS field, both nationally and internationally, and is based on the recommendations of Webster and Watson (2002). Globally, we included eight periodicals proposed by the Association for Information Systems (AIS): *European Journal of Information Systems*, *Information Systems Journal*, *Information Systems Research*, *Journal of AIS*, *Journal of Information Technology*, *Journal of MIS*, *Journal of Strategic Information Systems*, and *MIS Quarterly*. Regarding the national journals, we chose those listed in Qualis in the Administration area with the A2 classification, because this is the highest ranking of journals in the area at the time of writing this article. From this journal sample, we selected all the articles dealing with ISR. We then analyzed the references found in these articles, highlighting those that deserved inclusion in the discussion on the theme, regardless of periodical, author, geographical region, or even the field of specific knowledge (Webster & Watson 2002). Finally, we searched for works that cited the abovementioned references, determining which of them could provide additional contributions (Webster & Watson 2002). The search for plotting the

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timeline of ISR publications (see Figure 1 below) was only finalized when the repeated execution of the procedure described above provided similar results (Levy & Ellis, 2006).

TIMELINE OF THE CONCEPT OF RESISTANCE TO INFORMATION SYSTEMS

In the early days of computer use in companies, Gale (1968) discussed the pitfalls associated with IS implantation. According to Gale (1968), many organizations were excited about having computers that would help in decision-making, store important information, and work as a solution to various organizational problems. However, their use was still limited, and a return on investment was rarely achieved.

Among the factors cited by Gale (1968) for failures in IS implementation were efforts focused on computers rather than users, incorrect definition of the system users and their demands, deployment management errors, failure to communicate the purpose of the system, failure to analyze the impact of the system on power relations in the organization, and failure to understand the complexity of implementing a new system.

Based on research cited earlier, Kling wrote an article considered by many to be the basis of what was beginning to be called "social informatics", that is, "the interdisciplinary study of the design, uses, and consequences of information technologies that takes into account their interaction with institutional and cultural contexts." (Kling, 1999, p.1).

In a seminal paper, Kling (1980) proposed dividing the impacts of computing in society into two approaches: systems rationalism and segmented institutionalism. The first approach seeks to ascertain the impacts generated by information and communication technology from an optimistic point of view, verifying the benefits that computational capacity can bring to the everyday life of people and organizations. Segmented institutionalism verifies the legitimate and illegitimate aspects of the use of computational technologies, taking into account mimetic behaviors, status, and credibility. It assumes a much more critical position by analyzing impacts on equity, quality of life, and economic change.

In a metaphor suggested by Kling (1980), information systems should be compared to a "package" rather than a "tool," because a package includes much more than a simple device, being an ecosystem of processes and structures that, embedded in complex systems of social relations, promote innumerable interactions of different magnitudes at all organizational levels, transforming themselves into a social object.

The questions posed by Kling (1980) led Markus (1983) to produce one of the earliest studies dealing with the phenomenon of system resistance as a byproduct of the interaction of a new technology with the organizational environment. According to Markus (1983), it is necessary to discuss the reason for the ISR; that is, to understand the possible origins of the resistive behavior. These origins are identified by the author as the individual or group, the system itself, and/or the user's interaction with the system in the organizational context.

Individuals alone or the group of individuals that make up the organization have characteristics and idiosyncrasies that lead to resistant behavior, either because of fear of change, cognitive mechanisms, risk aversion, or even fear of obsolescence (Markus, 1983). Furthermore, an approach that places an emphasis on the characteristics of the system itself can generate resistive behavior, owing to the perception that the system is not friendly, useful, and/or efficient. Finally, the interaction between the user and the system can lead to resistance through a centralization or decentralization of power and a change in the working relationship. In any case, the introduction of IS leads to changes, and "the greater the implied change, the more likely the resistance." (Markus, 1983, p. 2).

Resistance or resistive behavior to IS is defined by Markus as "behaviors intended to prevent the implementation or use of a system or to prevent system designers from achieving their objectives" (Markus, 1983, p. 2). According to Markus (1983), owing to this definition, ISR should not always be seen as a bad result, because it cannot be assumed that the objectives of the system or those implementing it are always good.

In fact, later studies, such as Bagayogo, Beaudry, and Lapointe (2013), emphasized the importance of not always conceptualizing ISR as bad, nor accepting it as always good, because a user can have the perception that a new IS may not be aligned with organizational goals and strategies.

Markus (1983) concludes her work with a series of suggestions on how to deal with resistance to IS in each of the different presented contexts. From the user's point of view, she recommends focusing on user training and education, a coercive and persuasive practice of system use, and reinforcement through incentives for participation and commitment to the system. From the system's point of view, she proposes that the IS developers and implementers undergo training in order to competently manage the organizational modifications resulting from the installation of the new system. Finally, faced with the organizational impact generated by its implementation, a strong emphasis is given to the interactionist approach, whereby all possible weak points in the organization need to be addressed prior to the implementation of a new IS. Furthermore, Markus (1983) draws attention to the need

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to restructure user incentive mechanisms, making clear what is expected of them and the importance of their collaboration for the adequate implementation of the IS.

Hirschheim and Newman (1988) in turn demonstrate the complexity of the phenomenon of IS resistance in the organizational environment. For the authors, ISR cannot be seen as a rigid concept, and must be considered within a spectrum that can range from the physical sabotage of the system to its simple "non-use". Furthermore, IS resistance cannot be treated as a totally new type of resistance, but rather as a variant of the diverse types of resistance already addressed in the field of organizational change.

Thus, basing their argument on organizational change theories, Hirschheim and Newman (1988) identified the following fundamental causes for IS resistance behavior. (a) Innate conservatism: resistance occurs because people are naturally risk-averse, and therefore will resist any interference that affects their *status quo*; (b) lack of felt need: the individual does not perceive the change as necessary; (c) uncertainty: the fear associated with the impacts caused by change, such as loss of job, friends, or performance; (d) lack of involvement in the change: an individual resists change because he or she has not been consulted about the change process itself; (e) redistribution of resources: change in the manner in which fundamental resources such as influence, workload, territory, and information will be distributed in the organization after the implementation of the new IS; (f) organizational invalidity: lack of congruence between the organizational objectives and the characteristics of the system; (g) lack of management support: the leader does not promote the necessary tranquility and encouragement during the various phases of change; (h) poor technical quality: the new information system fails in its characteristics, not being friendly, reliable, functional, or fast; (i) personal characteristics of the designer: source of resistance that occurs when those responsible for the development and implementation of the system sound unfriendly to users, due to excessive technicality, lack of empathy, and/or superiority.

Because the phenomenon of resistance presents itself in a complex manner, Hirschheim and Newman (1988) recommend an in-depth analysis of political and social processes for the successful implementation of a new IS.

Corroborating their view, the first article of Joshi (1997) on IS resistance argues that the phenomenon is not simple, it is not always negative, and its occurrence depends very much on the political and social conditions of organizations. Joshi's (1997) studies are based on equity theory, according to which ISR is born, or not, as a by-product of an evaluation process that occurs on three levels. First, the user evaluates the perceived personal losses and gains arising from the system change. Second, he or she compares the relative result (the relationship between their effort and respective outcome) to the relative result of the organization. Finally, the user analyzes their relative result with that of the members of their reference group. If, after these comparisons, there is a perceived equity or advantage, then the change will not suffer resistance, even if it is of considerable magnitude or impact. However, on perceiving inequity the user will present resistance, even with changes that are small and of little impact.

Research developed by Martinko, Zmud, and Henry (1996) showed similar results, demonstrating that a user's previous experiences can both incite greater resistance to a new IS if negative, as well as reduce their resistance when positive. In addition, Martinko et al. (1996) reinforced the findings of previous authors by affirming that preexisting political-social characteristics are strong determinants of IS resistance behavior.

Until then, many studies had treated ISR as the final product of the system implementation (Coetsee, 1999, Joshi 1997, Marakas & Hornik 1996, Zorn 2002). That is, these articles focused on the investigation of the factors causing the ISR phenomenon. Beaudry and Pinsonneault (2005) modified this perspective by analyzing resistance as a process, with a beginning, middle, and end. In particular, they focused on the stage of the process in which users, perceiving a stimulus to resistance, choose between four adaptation strategies: maximization of benefits, satisficing of benefits, disturbance handling, and self-preservation (Beaudry & Pinsonneault, 2005). The results of these strategies can be to restore emotional stability, to minimize the perceived threats of the technology, and/or to improve user effectiveness and efficiency.

Although IS resistance had been researched prior to 2005 by several authors, directly or indirectly, the article published by Lapointe and Rivard (2005) is one of the most referenced in the field, and therefore deserves prominence in the research timeline. Lapointe and Rivard (2005) used a multilevel approach, seeking to understand the mechanisms of resistance at both the individual and group levels. For the authors, ISR should be observed and analyzed based on the object of resistance, the initial conditions, the interaction among those involved, the perceived threats, the type of resistance behavior adopted, and the level where the resistance occurs.

The results suggest that IS resistance is an unstable behavior that is sensitive to the presence of multiple incentives and varies in nature and intensity throughout the implementation, at first under the compulsion of individuals, but *a posteriori* also of groups (Lapointe & Rivard, 2005). The case studies analyzed by Lapointe and Rivard (2005) demonstrate that there are triggers that move resistance behavior from the individual level to the group level, comprising a kind of identification of common losses among the components of a group.

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Although approaches to IS resistance have long contributed to the development of the subject, there has been little theorizing regarding behavior models explicitly developed to understand the varied perspectives of the user. Thus, recognizing the importance and relevance of Markus's (1983) approach, Joia (2007) developed a theoretical model of ISR, applying it to a multiple case study of an intra-organizational system (IOS) implementation between Brazil's Central Bank and Federal Senate, known as BacenSenado.

According to the proposed model, Joia (2007), based on Markus (1983), concluded that ISR occurs through three distinct approaches: people-based, IS-based, and interactionist based, with the latter subdivided into a socio-technical variant and a political variant. The implementation of BacenSenado was troubled, and the deployed system was effectively used for less than a year (Joia, 2007).

According to Joia (2007), several problems led to the resistance of senators to the use of the IS, such as a lack of user training, a lack of system flexibility, and problems of power distribution between organs. The analysis of the problems led to the proposal of three factors for the successful implementation of electronic systems of the government-government type (G2G): (a) security: ensuring that data is circulated and consulted in a secure and reliable manner; (b) organizational environment: analyzing the culture, values, and identity of the organization for the suitability of the IS, and (c) training: ensuring that users have the necessary support to adapt to the new technologies and processes.

In addition, arguing that ISR occurs when the user perceives a breach of the psychological contract between themselves and the organization, Klaus and Blanton (2010) proposed a new model antecedent to ISR, in which they expanded on the work of Markus (1983).

Returning to the importance of the IS implementers, Rivard and Lapointe (2012) proposed a taxonomy of the responses that these agents give in identifying a resistive behavior. According to the authors, there are four response categories, as shown in Exhibit 1.

In addition to the presented taxonomy, Rivard and Lapointe (2012) suggest through the results of a case study that from the possible reactions, the implementers only reduce ISR when they adopt the posture of congruent rectification or dissuasion, provided that the latter is believable.

Next, to better visualize the evolution of the ISR concept and to produce Figure 1, we identified the volume of articles published over time, as well as the chronological sequence in which they were published. In this figure, we can see a clear boost in ISR publications following the works of Markus (1983) and Lapointe and Rivard (2005), both recognized as outstanding articles, including their numbers of citations: 2,645 and 884, respectively, according to Google Scholar.

Exhibit 1. **Taxonomy of responses to information system resistance**

Response category		Description of implementer behavior
Inaction	Unawareness	Seeing no reason to do anything
	Deliberate ignorance	Not caring, *laissez-faire*
	Impotence	Feeling unable to do anything
Acknowledgment		Discussing problems, collecting data
Rectification	Congruent	Redesigning the system, training, making concessions
	Non-congruent	Fixing the system, providing explanations, adding personnell
Dissuasion	Coercion	Forcing use by threatening users
	Authoritative persuasion	Reprimanding users or mandating use
	Supportive persuasion	Convince with reasons and explanations

Source: Adapted from Rivard and Lapointe (2012, p. 25).

COMPONENTS OF THE ISR PROCESS ACCORDING TO THE SCIENTIFIC LITERATURE

Markus and Robey (1988) classified the logical structure of scientific studies into two types: process-based or variance-based. The latter type focuses on variations in the event under analysis arising from the interaction between various phenomena. That is, it analyzes the relationships between the perceived phenomena, as well as the factors that caused these variations. In other words:

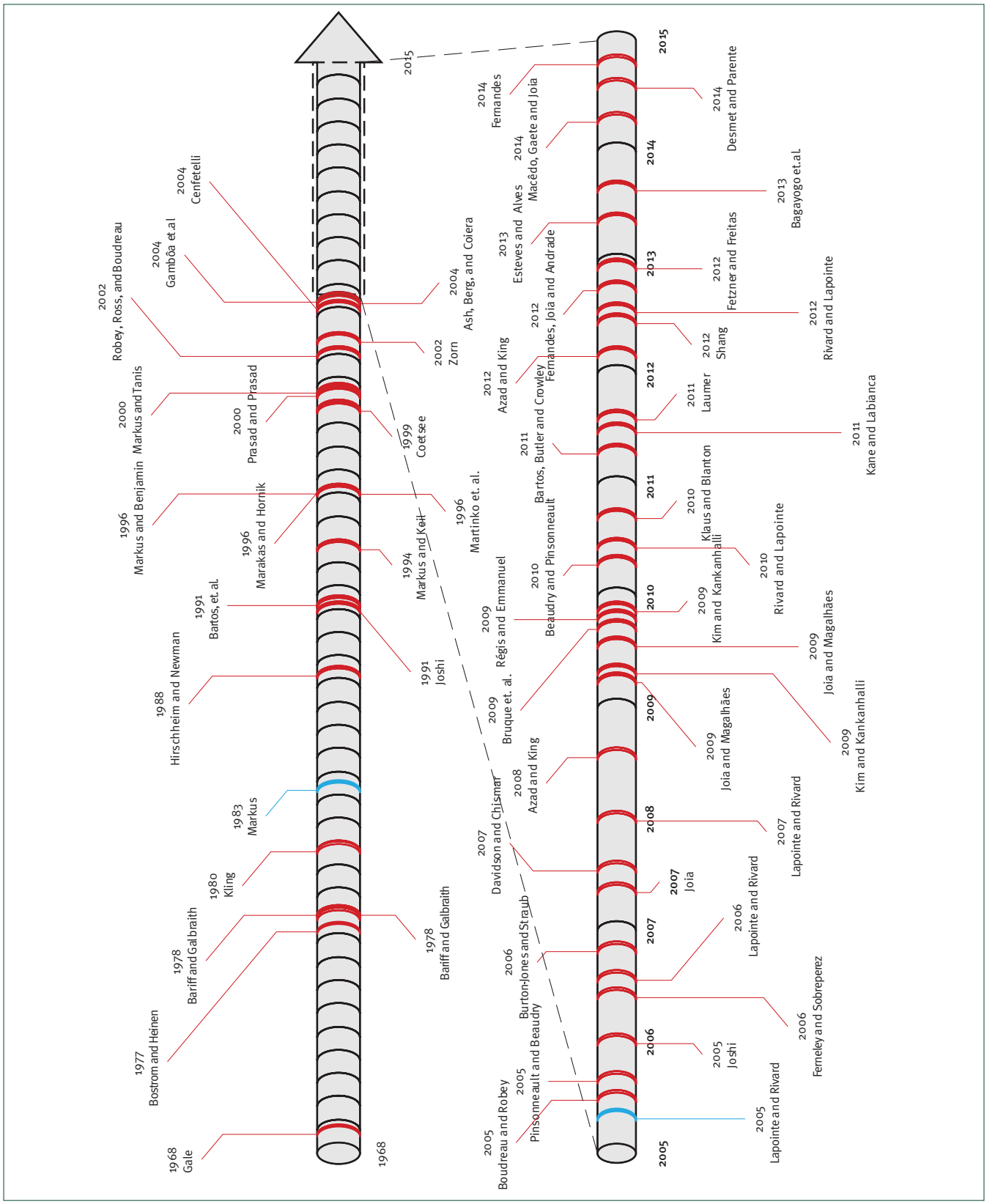
1. given a variation in A,
2. what factors (B, C...K) can be linked to the first (by the respective interaction),
3. so that the variance in A can be linked to the variations in the factors (B, C,...K)? (Dubin, 1978, p. 92).

The process-based structure analyzes and investigates the temporal order associated with a series of discrete events, based on a story, case, or historical narrative (Huber & Veen, 1995, p. 7).

Thus, because this article aims to develop a holistic approach to the ISR phenomenon, we sought to classify the researched scientific studies in terms of the stage and actors of the appropriate IS resistance process.

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Figure 1. **ISR publication timeline**



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Exhibit 2. Selected papers in the bibliographic review

Publication	Actors	Inputs	ISR Devel.	Outputs
Gale (1968)		X		
Bariff and Galbraith (1978)			X	X
Kling (1980)			X	X
Markus (1983)	X	X	X	
Hirschheim and Newman (1988)		X		
Joshi (1997)	X	X		X
Markus and Keil (1994)				
Martinko et al. (1996)		X	X	
Marakas and Hornik (1996)		X		X
Markus and Benjamin (1996)	X		X	
Coetsee (1999)			X	X
Prasad and Prasad (2000)	X			X
Markus and Tanis (2000)		X		
Robey, Ross, and Boudreau (2002)		X	X	
Zorn (2002)	X	X		X
Cenfetelli (2004)		X		
Ash, Berg, and Coiera (2004)		X	X	
Gambôa, Caputo, and Brescian (2004)	X	X		
Lapointe and Rivard (2005)		X	X	
Joshi (2005)	X	X	X	
Pinsonneault and Beaudry (2005)	X	X	X	X
Boudreau and Robey (2005)		X	X	
Lapointe and Rivard (2006)	X		X	X
Ferneley and Sobreperez (2006)				X
Burton-Jones and Straub (2006)	X	X		
Davidson & Chismar (2007)	X	X		
Lapointe and Rivard (2007)	X	X	X	X
Joia (2007)	X	X	X	X
Azad and King (2008)	X	X	X	X
Joia and Magalhães (2009a)	X	X		
Kim and Kankanhalli (2009)	X	X		
Veenstra, Klievink, and Janssen (2009)	X	X		
Bruque, Moyano, and Eisenberg (2009)	X			
Beaudry and Pinsonneault (2010)	X	X	X	
Klaus and Blanton (2010)	X	X	X	X
Bartos et al. (2011)		X	X	X
Laumer (2011)	X	X		
Kane and Labianca (2011)		X		
Azad and King (2012)	X	X	X	X
Shang (2012)	X		X	X
Rivard and Lapointe (2012)	X		X	X
Fernandes, Joia, and Andrade (2012)	X	X	X	X
Fetzner and Freitas (2012)		X	X	X
Esteves and Alves (2013)	X	X		
Bagayogo et al. (2013)				X
Desmet and Parente (2014)		X	X	
Macêdo et al. (2014)	X	X		
Vinhais and Joia (2014)	X	X	X	X

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According to Davenport (2013), a process is a set of activities structured in time and space, with the beginning, end, inputs, and outputs clearly defined. Based on this definition, the classification of the studies on ISR, in terms of the resistance stage of the process addressed, obeys the following taxonomy: (a) the actors involved in the process; (b) the process inputs, that is, their causes, origins, and antecedents; (c) the formation and development of ISR *per se*; (d) the process outputs, that is, the consequences and effects of the process, as well as a logical chain of activities in time and space.

Thus, using the fundamental components of a process as described by Davenport (2013), we classified the selected papers in the bibliographic review in terms of their main focus of research. The result is shown in Exhibit 2, and discussed below.

PROCEDURAL MODELING OF THE ISR PHENOMENON

According to the main points presented in articles on this research topic, the present paper proposes a procedural modeling of the ISR phenomenon in order to describe the resistance process over time from its inception to its final consequences. The procedural modeling in question is composed of activities (Ai, where i = activity number) along with their relationships over time. These are presented in Figure 2, and the logic of their creation is explained below.

According to the presented theoretical review, ISR begins when the implementer informs the users that a new IS will be adopted to perform tasks in the organizational environment (Hirschheim & Newman, 1988; Joshi, 1997, 2005; Beaudry & Pinsonneault, 2005; Shang, 2012), characterized in the model as activity A1.

From the activity A1, and based on the information received in the IS presentation, the user evaluates the new system (A2) (Klaus & Blanton, 2010; Macêdo, Gaete, & Joia, 2014; Markus, 1983).

Thus, through self-reflection the user evaluates their personal and idiosyncratic characteristics, and their compatibility with the IS, constituting A3 (Hirschheim & Newman, 1988; Joia, 2007; Joia & Magalhães, 2009b; Kim & Kankanhalli, 2009; Macedo et al., 2014; Zorn, 2002). Within this "individual" category are found risk aversion (A3a) (Hirschheim & Newman, 1988; Joia, 2007; Joia & Magalhães, 2009a; Kim & Kankanhalli, 2009; Zorn, 2002), culture of use (A3b) (Esteves & Alves, 2013; Hirschheim & Newman, 1988; Joia & Costa, 2007), previous experiences (A3c) (Martinko et al., 1996), and expectations and comparisons (A3d) (Joshi, 1997, 2005).

In addition, the user evaluates the characteristics of the system (A4)—the second source of ISR—analyzing its user-friendliness (A4a) (Hirschheim & Newman, 1988; Joia, 2007; Joia & Magalhães, 2009b; Beaudry & Pinsonneault, 2005; Shang, 2012), data security (A4b) (Hirschheim & Newman, 1988; Joia, 2007; Joia & Magalhães, 2009a), and the adherence of the IS to the objectives of the organization (A4c) (Hirschheim & Newman, 1988, Kim & Kankanhalli, 2009; Esteves & Alves 2013; Bagayogo et al., 2013).

Simultaneously to the previous evaluations, the user assesses the third and fourth sources of ISR, namely their political impact (A5)—the possible changes in intraorganizational power distribution (Markus, 1983)—and the socio-technical impact, triggered by the evaluation of the effort undertaken to perform a job before and after the new system is introduced (A6).

To evaluate A5, the user analyzes the direct impact of the deployment and use of the IS on the organizational *status quo* (A5a) (Kim & Kankanhalli, 2009).

For the evaluation of A6, the user compares the amount of effort employed in the work against the reward received for the resultant work before and after the implementation of the new IS (A6a) (Joshi, 1997), as well as evaluating their effort compared to other members of their working group before and after the implementation of the new IS (A6b) (Joshi, 2005).

The result of all these inputs for the user is the definition of their attitude regarding the new IS (A7) (Marakas & Hornik, 1996; Markus, 1983; Beaudry & Pinsonneault, 2005; Vinhais & Joia, 2014; Zorn, 2002). However, because humans are gregarious beings, their attitude toward behavior is not part of an individual and rational system of decision-making, but rather of a complex system of social relations (Elster, 1989). Therefore, the attitude of an individual to the IS will also depend on how this same system is perceived by their peers (A8) (Bartos, Butler, & Crowley, 2011; Lapointe & Rivard, 2007). Thus, an individual who is positive toward a given IS may change his or her attitude owing to the negative force of the collective consciousness, or vice versa (Bartos et al., 2011; Lapointe & Rivard, 2007). Once a group's positive perception of the system has been aroused, the resistance to the IS will be low or non-existent (A9), leading to the appropriate use of the system (A10) (Bartos et al., 2011). On the other hand, if there is a negative group perception of the system, the formation of what Lapointe and Rivard (2007) call group resistance (A11) occurs. Thus, when a group perceives that as a whole it will lose out in the redistribution of power from the new IS, its components organize themselves to resist it (A12) (Lapointe & Rivard, 2007).

Once the user's resistance to the IS has been verified (A12), the role of the system implementer becomes relevant. He

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or she has the possibility to identify and characterize the ISR (Lapointe & Rivard, 2006), and to work to mitigate it (Markus, 1983) by identifying powerful stakeholders and involving them in the process of using the system (Lapointe & Rivard, 2007). In this case (A13), coping with the resistance to the IS involves the recognition and acceptance of the problem (A13a), the rectification of the system (A13b), or the dissuasion of the users (A13c) (Rivard & Lapointe, 2012). The action of the implementer can significantly impact the attitude of the user (A7) and the group (A8) to the IS. By obtaining a positive perception of the IS, the level of resistance can decrease or disappear completely, thereby mitigating the resistance (A9). However, despite the performance of the implementer, the individual and the group may maintain a negative perception and a continued resistance to the IS (A12). In this situation, the implementer may once again choose to try to identify and mitigate the ISR, following a flow similar to the one presented here, or opt to no longer interfere with the IS. Once the implementer has decided on the latter option, the ISR remains at a medium (A14) or high (A16) level, which will move the process forward even with resistance.

Once the user develops a medium resistance to the IS, an apparent acceptance and use of the system is identified. That is, the user claims to be in agreement with the system, while developing a veiled resistance to it (Ferneley & Sobreperez, 2006). This hidden resistance usually translates into a workaround behavior, understood as inappropriate use (disguised as proper use) of the IS (A14) (Alter, 2004; Ferneley & Sobreperez, 2006). In this case, the implementation of the IS achieves lower results than initially anticipated (A15).

Finally, when a high level of resistance to the information system develops, what Marakas and Hornik (1996), Baudery and Pinsonneault (2005) and Lapointe and Rivard (2005) describe as destructive behavior (A16) can occur. This behavior is expressed by incorrect data entry, data destruction, uninstallation of the system, and all types of sabotage that could invalidate the IS, making its continued use in the organization impossible (Marakas & Hornik, 1996; Beaudry & Pinsonneault, 2005). In this case, the IS deployment is a failure, and the system is uninstalled (A17).

After these three outputs associated with the implementation of the IS (A10, A15, A17), the process comes to an end (A18).

Figure 2 consolidates the above discussion through a procedural modeling, showing how the ISR phenomenon develops over time among the various actors involved.

Finally, in Exhibit 3, the activities (Ai) listed in the procedural modeling proposed in Figure 2 are related to the presented theoretical reference.

In this manner, the objective of the work is achieved, leaving only the presentation of the final conclusions of this research.

CONCLUSION

The present article aimed to develop a procedural model of the ISR phenomenon over time, considering both work that preceded and justified the birth of the concept and the most recent discussions on the subject.

Figure 1 visually depicts the extent to which the ISR concept has evolved, leading to a yearly increase in the number of scientific publications on this topic. In addition, the analysis of these articles identified an approach primarily focused on the actors and antecedents of ISR. The fact that the majority of the analyzed articles address ISR as the final product, rather than as a process (see Exhibit 2), justified the construction of a procedural modeling that explained the antecedents, paths, and interactions associated with the ISR phenomenon, as well as its interaction with other actors such as groups and the team responsible for implementing the system.

Thus, this article generates the following academic and organizational implications.

From an academic point of view, this paper strives to advance scientific knowledge in the ISR field by presenting a procedural approach that can be expanded, applied, discussed, and tested.

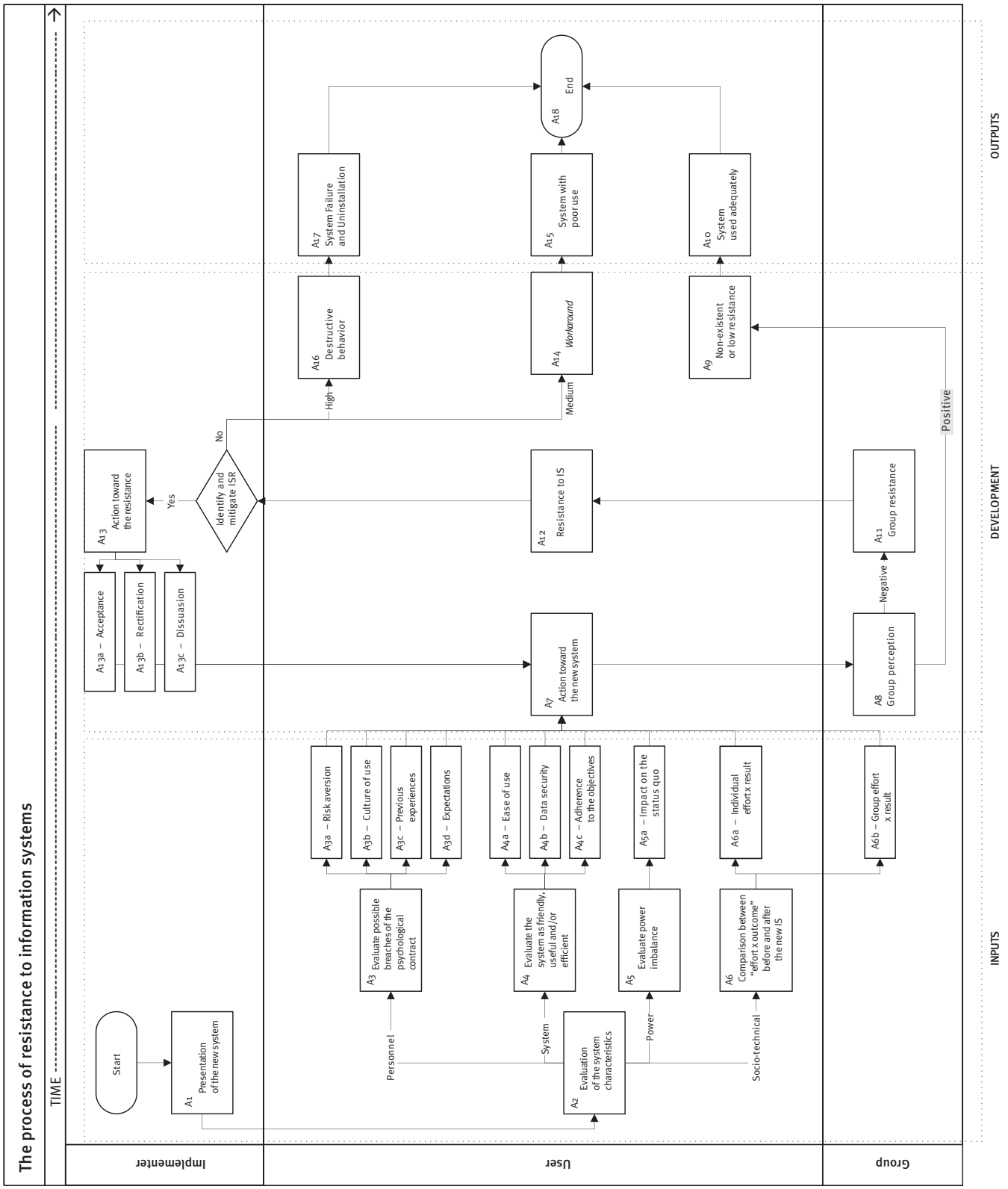
From a managerial perspective, the present paper provides insights for managers and practitioners, provoking them to reflect on the implementation process and their role, as well as that of the user, in this enterprise, whether as client, agent, or object of organizational change resulting from the IS deployment.

However, this work presents various limitations, as explained below. Although we have exhaustively searched for the principal articles on ISR, involuntary omissions may have occurred. In addition, although the articles have gone through a process of categorization according to the phases of the resistance process, as well as the triangulation of their approaches, the development of the procedural modeling follows an inductive logic, indicating that this exploratory modeling must be validated *vis-à-vis* concrete ISR examples.

An exact understanding of the ISR phenomenon continues to challenge both academics and practitioners, especially in a society increasingly dependent on ICT. However, we believe that this work has succeeded in introducing new theoretical perspectives to the complex process of the formation of resistance to information systems in organizations.

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Figure 2. **Process modeling of the resistance to information systems**



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Exhibit 3. **Activities and theoretical bases**

Code	Activity	Theoretical base
A1	System presentation	Hirschheim and Newman (1988); Joshi (1997, 2005); Pinsonneault and Beaudry (2005); Shang (2012)
A2	Evaluation of system characteristics	Markus, 1983; Klaus and Blanton, 2010; Macêdo et al., 2014
A3	Evaluates possible breaches of the psychological contract	Hirschheim and Newman (1988); Zorn (2002); Joia (2007); Joia and Magalhães (2009b); Kim and Kankanhalli (2009); Macêdo et al. (2014)
A4	Evaluates the system as friendly, useful and / or efficient	Hirschheim and Newman, (1988); Joia (2007); Joia and Magalhães (2009b); Joia (2007); Pinsonneault and Beaudry (2005); Shang (2012); Magalhães (2009); Kim and Kankanhalli (2009); Esteves and Alves (2013); Bagayogo et al. (2013)
A5	Evaluates power imbalance	Markus (1983)
A6	Comparison between "effort x result" before and after the new IS	Joshi (1997, 2005)
A7	Attitude in relation to the new IS	Markus (1983); Marakas and Hornik (1996); Zorn (2002); Pinsonneault and Beaudry (2005); Vinhais and Joia (2014)
A8	Group perception	Bartos et al. (2011); Lapointe and Rivard (2007)
A9	Non-existent or low resistance	Bartos et al. (2011)
A10	System used adequately	Bartos et al. (2011)
A11	Group resistance	Lapointe and Rivard (2007)
A12	Resistance to IS	Markus (1983); Lapointe and Rivard (2007)
A13	Attitude in relation to the resistance	Lapointe and Rivard (2006); Markus (1983)
A14	Workaround	Ferneley and Sobreperez (2006)
A15	System with poor use	Ferneley and Sobreperez (2006)
A16	Destructive behavior	Marakas and Hornik (1996); Pinsonneault and Baudery (2005); Lapointe and Rivard (2005)
A17	System Failure and Uninstallation	Marakas and Hornik (1996); Pinsonneault and Beaudry (2005)
A18	End	Markus (1983); Lapointe and Rivard (2007); Ferneley and Sobreperez (2006); Marakas and Hornik (1996); Pinsonneault and Baudery (2005)

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ASSEMBLAGED BY DESIRE: POTTERHEADS' PRODUCTIVE CONSUMPTION

Agenciados pelo desejo: O consumo produtivo dos potterheads

Mediados por el deseo: El consumo productivo de los potterheads

ABSTRACT

The Harry Potter saga became one of the cultural products with a major impact on the twenty-first century. Its fans, called potterheads, relate in a social space known as fandom. Their practices are based on the appropriation of the cultural text in a productive consumption process within a context of participatory culture. Assuming desire from the perspective of Deleuzian assemblage theory, which presents this concept as a flow of productive energy that is articulated through a collective force, this study aimed to understand how potterheads' productive consumption is assemblaged by desire. We therefore explored multifocal data concerning practices of potterheads available on digital platforms using Foucauldian Discourse Analysis. Our results revealed that potterheads' desire assemblage maintains their bond with the canonical universe of the saga, as a way of maintaining identity and security in the transition to adult life, through relationships in the fandom and in pursuit of broader social legitimacy. The study contributes theoretically by adopting the Deleuzian notion of desire as a lens to understand the collective action of consumers in cultural contexts of practice.

KEYWORDS | *Potterheads, prosumption, desire, assemblage, Deleuze.*

RESUMO

A saga Harry Potter tornou-se um dos produtos culturais de maior impacto do século XXI. Seus fãs, chamados potterheads, relacionam-se em um espaço social conhecido como fandom. Suas práticas pautam-se na apropriação do texto cultural, num processo de consumo produtivo, em meio a um contexto de cultura participativa. Assumindo o desejo do ponto de vista da teoria deleuziana do agenciamento, em que tal conceito é apresentado como um fluxo de energia produtiva, articulada por meio de uma força coletiva, o presente trabalho teve por objetivo compreender como o consumo produtivo dos potterheads é agenciado pelo desejo. Para tal, exploramos dados multifocais referentes a práticas dos potterheads disponíveis em plataformas digitais, por meio da análise de discurso foucaultiana. Nossos resultados revelam que o agenciamento de desejos dos potterheads mantém seu vínculo com o universo canônico da saga, como forma de manutenção dessa identidade e de segurança na transição para a vida adulta, o que ocorre por meio das relações no fandom e na busca de uma legitimidade social mais ampla. A contribuição teórica da pesquisa evidencia-se na adoção da noção deleuziana de desejo como lente para se compreender a ação coletiva de consumidores em contextos culturais de prática.

PALAVRAS-CHAVE | *Potterheads, prossumo, desejo, agenciamento, Deleuze.*

RESUMEN

La saga Harry Potter se convirtió en uno de los productos culturales de mayor impacto del siglo XXI. Sus fanes, llamados potterheads, se relacionan en un espacio social conocido como fandom. Sus prácticas se basan en la apropiación del texto cultural, en un proceso de consumo productivo, en medio de un contexto de cultura participativa. Al asumir el deseo del punto de vista de la teoría deleuziana de la mediación, en que tal concepto se presenta como un flujo de energía productiva, articulada por medio de una fuerza colectiva, el presente trabajo tuvo por objetivo comprender cómo el consumo productivo de los potterheads es mediado por el deseo. Para tal, exploramos datos multifocales referentes a prácticas de los potterheads disponibles en plataformas digitales, por medio del análisis de discurso foucaultiano. Nuestros resultados revelan que la mediación de deseos de los potterheads mantiene su vínculo con el universo canónico de la saga, como forma de mantenimiento de esa identidad y de seguridad en la transición a la vida adulta, lo que ocurre por medio de las relaciones en el fandom y en la búsqueda de una legitimidad social más amplia. La contribución teórica de la investigación se evidencia en la adopción de la noción deleuziana de deseo como lente para comprender la acción colectiva de consumidores en contextos culturales de práctica.

PALABRAS CLAVE | *Potterheads, prosumo, deseo, mediación, Deleuze.*

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INTRODUCTION

Recently, the entertainment industry has been one of the world's fastest growing industries, and Brazil represents one of the industry's most promising markets (International Trade Administration, 2016). One of the most successful products of this industry is the Harry Potter saga, whose book series has been the bestselling youth and teen literature during the first decade of the twenty-first century and one of the most successful sagas in the history of cinema. The narrative was developed in seven volumes, produced over a 17-year period, and translated into more than 60 languages, which makes Harry Potter one of the most powerful contemporary cultural texts (Brown & Patterson, 2009, 2010).

The cultural products provide their fans, as private consumers, raw materials over which identities are constructed (Guschwan, 2012). Through a high involvement with the products and an intensive exchange within communities, meanings and values are produced by and for their members (Boulaire & Cova, 2013). New modes of sociability are generated, legitimizing a form of existence where the affinities and relationships maintain the entertainment, production, and assemblage, inside and outside the *fandom* – the social space where these activities occur (Lee, 2011).

According to Jenkins (2009), the relationship networks established between *pop* culture fans, cultural producers, and technologies occur through a type of collaborative construction associated with the consumption of a cultural product, globally and democratically established, in a specific behavior of participatory culture. Therefore, fans consumed the products and changed how the cultural products were produced, distributed, and consumed so far.

The productive consumer has been understood based on a simultaneous process of production and consumption and is, therefore, called the prosumer (Cova & Cova, 2012; Dujarier, 2016; Eden, 2015; Ritzer, 2013, 2015). In a close relationship with communities and producers, prosumers co-create meanings and values that benefit themselves and, consequently, may add value to products and brands (Anderson, Hamilton, & Tonner, 2016; Kähr, Nyffenegger, Krohmer, & Hoyer, 2016; Troye & Supphellen, 2012). Hence, some authors evaluate whether the practices of consumers might reinforce or destabilize brand identities, repelling or promoting its audience (Parmentier & Ficher, 2015; Pongsakornrungsilp & Schroeder, 2011). Specifically, as for fans, this behavior is pervaded for their affective relationship with the cultural product, where consumers act passionately, militantly, creatively, and collaboratively (Jenkins, 2009).

However, what propels and maintains the strong bond between fans and cultural products? What drives the *potterheads*' behavior and their global and collaborative articulation? Based on Belk, Ger, and Askegaard (2003), this could be considered a passionate consumption centered on desire, which here is not necessarily understood as hedonic, aesthetic, or high-involvement consumption, but rather associated with the experience of aspiration in relation to variations of will and ability to control desires that involve objects and states of passion. Based on the Deleuzian concept, Ruckenstein (2015) highlights the contribution of understanding desire as established in the relationships and not rooted in the lack – as commonly regarded by consumer research –, arguing that, in a participatory culture and from the point of view of prosumers' practices, desire is configured and established in the motion flows among people, products, and market, becoming a sort of "bond" that permeates and energizes the produced relationships of recognition and involvement. Similarly, Kozinets, Patterson, and Ashman (2016) claim that the Deleuzian notion of desire is revealed as a productive energy flow, articulated by means of a collective force, aligned with the understanding of virtually established socio-cultural behaviors. Deleuze and Guattari (2010) understand human beings as machines of desire. For the authors, desire is something inherent and that wants to be experienced. Therefore, to desire is to always build an assemblage, which is a production invested in the social field.

Thus, by understanding desire as an aspect capable of clarifying the dynamics of the productive consumption process and based on the theoretical foundation of the Deleuzian concept of desire, the present study assumes that by interacting in their *fandom*, *potterheads* form an assemblage of desire. Thus, the question of our study is presented as: how is the *potterheads*' productive consumption assembled by desire?

Brown and Patterson (2010) highlight the potential of using the Harry Potter saga for the empirical investigation of the concept of desire. When seeking to understand how this force acts in social spaces, we aim to improve the understanding in the field of the *Consumer Culture Theory* (CCT), which is a fundamental concept in consumer research. In turn, the use of the Deleuzian concept favors the pluralism of the theoretical views of the field, especially because it is a theoretical contribution that displaces the understanding of desire as something individually experienced with its conception as a collective practice.

THE FAN AS A PRODUCTIVE CONSUMER IN BRAND COMMUNITIES

The fan has become a growing social identity, which can be explained by the combination of the growth of the media and

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entertainment industry that has occurred in the second half of the last century and the relatively recent arrival of digital technologies (Jenkins, 2006). In notions that have been widely accepted since the beginning of the 1990s, the period when fans started to become an academic interest, Fiske (1992) establishes that the fan is, simultaneously, a user and active producer of cultural capital, which occurs through his/her relationship with *pop* culture products. Similarly, according to Jenkins (1992), fans are readers who write, spectators who participate, and consumers who produce. The understanding that fans are active has been widely adopted, especially due to the interest in analyzing them in the context of the so-called Web 2.0, whose logic strengthens the participation of its users (Bennett, 2014; Hills, 2013; Pearson, 2010).

From a consumer research perspective, the fan can be understood from the logic of productive consumption, which has been discussed under the concept of prosumption, a term that emphasizes the understanding of the undefined boundaries between production and consumption practices (Eden, 2015; Ritzer, Dean, & Jurgenson, 2012). The prosumer undertakes an increasing proportion of tasks in his or her consumption, which are traditionally considered production (Ellsworth-Krebs & Reid, 2016; Ritzer, 2010). Much emphasis has been given to the prosumer's role as the one responsible for the work, appropriated by the producer, in the production of consumed products and services (Dujarier, 2016; Rieder & Voß, 2010; Ritzer, 2015). However, according to Ritzer and Jurgenson (2010), although this may be true when considering the provision of traditional services, where the participation of prosumers is compulsory, predefined, and often controlled by the producer, the same cannot be true in the context of new prosumption forms associated with Web 2.0 because in these cases, the participation of prosumers is voluntary, desired, and difficult to control.

In this sense, Ruckenstein (2015) claims that the emphasis on this process became more evident within social relationships that are increasingly affected and molded by digital technologies, where a participatory culture was established and new forms of interactions and collaborations were promoted. The internet became a platform widely used by consumers to collectively develop knowledge about a specific product and relate to each other and producers (Cova & Cova, 2012).

According to Jenkins (1992, 2006), fans actively share and exchange knowledge, establishing a collective intelligence around cultural products through which communities such as *fandoms* are built. As any cultural formation, the *fandom* establishes its own rules (Schreyer, 2015) and provides their members the possibility to establish a sense of union and cohesion (Hewer, Gannon, & Cordina, 2015), as well as a model of cultural practice (Johnston, 2015). Hence, it is understood as a space where identities are built (Porat, 2010; Seregina & Schouten, 2016) and meanings are created (Jenkins, 2006).

As this process is developed through a practice associated with consumption, fan communities have obtained a growing interest in the CTT field (Cristofari & Guitton, 2016), especially from their understanding as brand communities (Muniz & O'Guinn, 2001). The *fandom* can be understood as a means for fans to interact with brands (Jenkins, 2009, 2014) or even a negotiated form of sharing the ownership of brands (McCulloch, 2013). Based on the relationship of fans with the franchise of media products, Robert Kozinets (2014) has proposed the concept of *brand fandom* (Brown, Kozinets, & Sherry, 2003; Cova, Kozinets, & Shankar, 2007). For the author (Kozinets, 2014), thanks to a base of fans – and not of conventional consumers – the franchise brands of media products can be refreshed or even successfully relaunched.

Schau, Muniz, and Arnould (2009) start from the concepts of consumption practices to understand how consumers create value in brands communities, which suggests that the observation of fan practices in *brand fandoms* can be an adequate way to understand how they produce meaning in such communities. Duffet (2013) lists a series of fan practices, which are classified into three types: connection, where fans connect to the media product they admire through in-person contacts, as occurring through autograph and photo sessions; appropriation, for example, where fans appropriate the narrative contents to produce, from these, new content called *fanfictions*; and *performance*, which is related to practices derived from products of which one is a fan, revealed for instance, in the production of information content about such products, in the production of videos and adaptation of songs based on their narratives, and characterization of characters. To these practices, we can also add discussions in social networks (Booth & Kelly, 2013; Gibbons & Dixon, 2010; Watson, 2010).

DESIRE AS ASSEMBLAGE IN THE DELEUZIAN THEORY

According to Ruckenstein (2015), the driving force of prosumers' activity is desire – assuming that Deleuzian thought indicates that desire should be understood as relational, produced, and continuously fed in social meetings – with an intensity that acts as a sort of bond of the social boby. In these terms, desire always derives from a meeting of forces. However, it does not wait for this meeting as the moment for action but assembles and builds itself on it. Therefore, the desire of prosumers is formed and intensified

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in daily practices of consumers and their relationships with the product and market.

The concept of desire was established as one of the most adopted concepts in the field of consumer research. Its most commonly adopted understanding is based on the psychoanalytical theory, founded on the concept that desire is caused by the lack of the object of desire, which, never under possession, generates a constant state of dissatisfaction that becomes a driver of human behavior (Lacan, 1977). Differently from the dominant line, Belk et al. (2003) support the anthropological concept of desire, which happens within cultural contexts and is understood as an incarnated passion that involves the pursuit for alterity and sociability, as well as for danger and inaccessibility, in a process of cultural socialization permeated by tensions between seduction and morality. However, according to Kozinets et al. (2016), for such a core concept in consumer research, the notion of desire was the object of little reassessment, especially when considering the current context where consumers combine and connect collectively with their wills using new technologies. Based on such arguments, the authors utilize the Deleuzian approach to understand desire in the digital era.

Contrary to the established psychoanalytical tradition, the Deleuzian notion of desire is based precisely on the claim that it is not based on lack. In the studies with Félix Guattari (Deleuze & Guattari, 1987, 2010), the concept of desire is presented in a positive and productive way, understood as an inherent expression of social force that empowers connected social bodies. This force can be understood as a productive energy flow that is directed and transformed in specific interests (Kozinets et al., 2016).

The Deleuzian concept of desire is inserted in a broader approach, named the Assemblage Theory. Articulated as assemblage, desire is understood as an experiential phenomenon, which is external to the individual (i.e., social). The assemblage should be understood here as a complex arrangement of heterogenic elements (e.g., objects, bodies, experiences) that combine in a productive and functional way, never as a whole but as multiplicity (Deleuze & Guattari, 1987, 2010). Hence, assemblage can be understood as an "arrangement" (Nail, 2017) where different configurations propitiate different practices (Araujo & Kjellberg, 2016; Scaraboto, 2015), which can be understood as a system susceptible to stabilization or destabilization by its components – which could be applied in how fans can stabilize or destabilize brand identities (Parmentier & Fischer, 2015).

Deleuze and Guattari (2010) articulate the notion of assemblage as machines operated by desire, culminating with the understanding that assemblages are machines of desire. The machine's structure is formed by three characteristics: an abstract machine, understood as its own existence condition, which refers not to something that concretely exists, but to relationship networks that allow its operation; the concrete arrangement, which refers to the elements that compose it materially and propitiate its relationships; and its agents, which are understood not as self-conscious subjects, but rather as mobile operators connected to the network (i.e., abstract machine) by its concrete elements (Nail, 2017).

Such machines are always coupled to others (Deleuze & Guattari, 2010), part of more complex systems (institutional, social, and cultural) called territories, through which desire connects experiences of social and psychological levels (Kozinets et al., 2016). Despite its name, a territory does not refer to a fixed space, but to the result, always dynamic and momentaneous, of arrangement processes between machines of desire. Deleuze and Guattari (1987) articulate the notion of territories as the result of territorialization, which is the process through which machines of desire connect. However, this notion is better understood from the deterritorialization and reterritorialization processes, because assemblages are susceptible to continuous decoupling and coupling, respectively. Hence, every time a territory results in a reterritorialization process – which infers a deterritorialization – it is different from its prior version.

Therefore, each machine considers the other's production as a product, which occurs as desire displaces through the productive unconscious, determined by connection, disjunction, and conjunction syntheses that produce subjectivities (Deleuze & Guattari, 2010). This productive unconscious is presented using the concept of body without organs (BwO), a virtual concept found in a potential state, loaded by various possibilities of forms of action and for being machines of desire (Deleuze, 2000). Therefore, the BwO offers the conditions for new forms of experience (Deleuze & Guattari, 2010), helping desire to configure as a liberating force of creativity and innovation (Kozinets et al., 2016). This understanding corroborates with Firat and Venkatesh (1995), adhering to the definition of the "new consumer" elaborated by Cova and Cova (2012).

METHODOLOGICAL PROCEDURES

In line with the adopted theory, it is understood that the most appropriate analytical pathway for this study is discursive analysis. Among the available options, the Foucauldian discourse analysis (FDA) has been adopted, as its philosophy is similar to Gilles Deleuze's. In this sense, Deleuze (2008) sustains the existence of a common philosophical concept between himself and Foucault.

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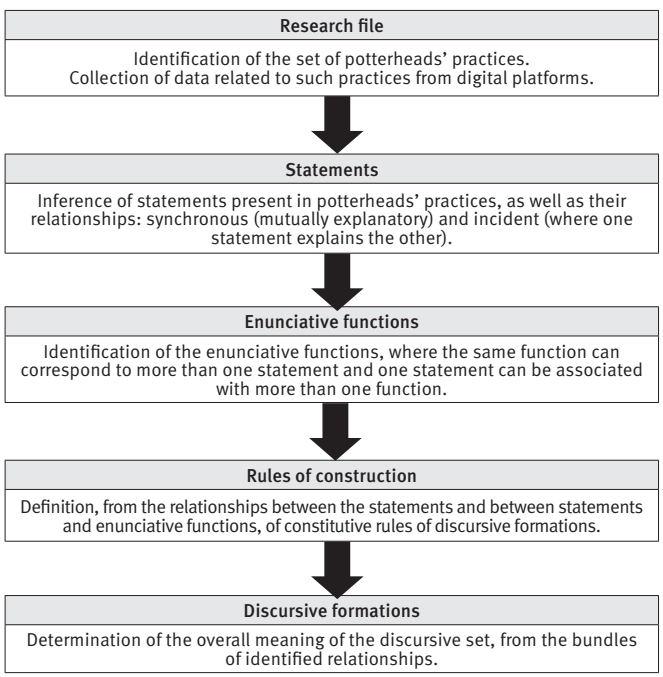
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Exhibit 1. **Analytical categories**

Concepts	Description
Statement	The statement, which represents the elementary discursive unit, is the existence mode (historical condition of possibility) of a set of signs that are presented as interdependent knowledge.
Enunciative function	Statements gain existence linked to their functions, which are able to reveal contents. The enunciative function indicates its performance in discursive activities, showing how they operate.
Rule of construction	The rules of construction are closely linked to the discursive formations and determine the boundaries and the possible forms of the saying.
Discursive formation	The formation reveals the regularity of the discursive field, pertinent to a specific time and space, given how the statement relates to the functions, which in turn are regulated by rules that indicate these conditions.

Source: Foucault, 2009.

Figure 1. **Synthesis of the analytical process**



The methodological organization of this study was based on Leão et al. (Camargo & Leão, 2015; Costa & Leão, 2012; Leão, Ferreira, & Gomes, 2016), who presented the method based on Foucault's four fundamental analytical categories (Exhibit 1), analyzed sequentially with the interpretation of the data (Figure 1).

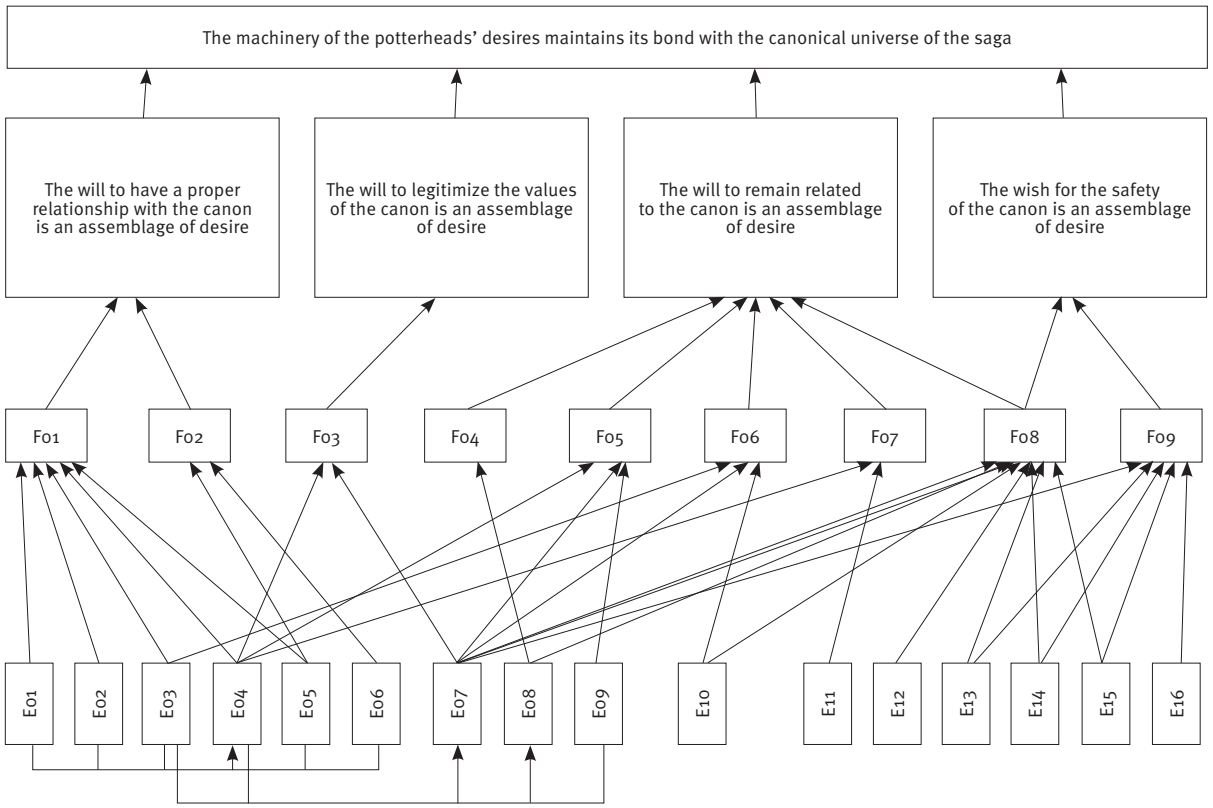
Foucault (2009) considers *file* as the collection of documents used for the FDA. In a way, according to its function, it could be compared to what is understood as *corpus* in a qualitative study (Bauer & Aarts, 2002). To build the file, the *potterheads*' practice criteria have been used. In addition, to corroborate the theoretical concept built for the study, Foucault (2009) understands that practices are responsible for institutionalizing discourses, crystallizing them in the social medium. In total, 21 common practices have been identified in the *fandom* (Exhibit 2).

Exhibit 2. ***Potterheads'*** **practices**

To accuse poser
To adore the universe
To collect *merchandise*
To buy books and movies
To comment about the universe
To diffuse the saga content
To participate in the selection of the houses
To participate in fan meetings
To participate in movie and book releases
Re-edit/Remix cultural contents
To worship the artists from the movies and the author of the saga
To produce *fan fiction*
To produce *fan art*
To write specialized digital media
To play quidditch
To duel
To test small beans of all flavors
To get tattoos
To *cosplay*
To watch or read again movies or books

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Figure 2. **Relationship map of the discursive formation**



Statements

E01	*Potterheads* dodge determinations of the canon	E09	*Potterheads* exchange information on a daily basis
E02	*Potterheads* apply the knowledge about the canon to question the dogmas	E10	*Potterheads* felt refreshed by the advertisement of the extension of the movie series
E03	*Potterheads* establish identifications with *fandom* members	E11	*Potterheads* engage in fandom practices
E04	*Potterheads* establish bonds within the *fandom*	E12	*Potterheads* are professionalized with the universe
E05	*Potterheads* worship the canon	E13	*Potterheads* are emotionally dependent on the universe
E06	*Potterheads* give in to fandom practices	E14	*Potterheads* are nostalgic in relation to the universe
E07	*Potterheads* produce cultural texts from the universe	E15	*Potterheads* identify themselves with the canon
E08	*Potterheads* educate the new fans	E16	*Potterheads* fall to crisis as they mature

Functions

F01	To clarify the characteristics of fans in the *fandom*	F06	To perpetuate the Harry Potter universe
F02	To satisfy the will of fandom practices	F07	To safeguard the Harry Potter universe from harm
F03	To be ironic about social problems		
F04	To value the Harry Potter universe	F08	To promote the fan condition
F05	To nourish relationships within the *fandom*	F09	To preserve the protection given to the canon

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Multifocal data (Flick, 2009) composed the file of this study, which consisted of a total of 593 documents, of which 280 were in Portuguese and 313 were in English, because the *fandom* has no geographical borders. In total, 67 videos were collected from the YouTube platform and 526 images and texts were from different platforms of social networks, blogs, and *websites*. Two criteria were adopted for the selection of the data: relating to the *potterheads*' interaction, with no interest on the comments of third parties about their practices; and contemplating the *potterheads*' practices in this context.

The main issues encountered in the study were, on one hand, due to the fact that social media are under a constant dynamic of production and exclusion of information, and on the other hand, because the *fandom* is a social space marked by a particular culture where researchers do not belong. To tackle the first difficulty, data were collected from different social media, considering that the contents produced in the *fandom* are reproduced in different media. As to the second, the consulting support of two fans of the saga was adopted and these fans played an important role in the solution of questions that contributed to the recognition of practices and the definition of the media to be accessed for the collection of data.

Finally, the investigation adopted the quality criteria of qualitative research (Paiva, Leão, & Mello, 2011). The representativeness of the *corpus* of the research was contemplated by means of the abundance of information acquired about the object, acknowledging the wide variety of expressions of different media. Reflectiveness was adopted throughout the entire analytical process, where constant inquiries attempted to address the numerous relationships evidenced by the empirical data and theoretical foundation. The triangulation of data occurred in the validation of the analysis performed by the authors. The rich and detailed description of the study is presented within the limits stipulated for the study.

DESCRIPTION OF THE RESULTS

This study led us to identify a discursive formation, related to how the *potterheads*' machinery of desire maintains its bond with the canonical universe of the saga. It is based on 16 statements, nine functions, and four rules. Figure 2 presents these elements in their relationships. The transversal norm of these rules as assemblage of desires that refer to wills establishes them as the core aspects that make them singular. The discursive formation represents the synthesis of these singularities. All of them refer to a particularity of the *potterheads*' relationship with the canon of the saga: adequacy, values, maintenance, and safety. Based on this, the results are presented using the rules of construction as reference.

The relationship with the canon

The first rule refers to how the fans bond to the canon through their relationships in the *fandom*, discussing the adequacy conditions to establish the longevity of this relationship. Two enunciative functions are the basis for this rule: one concerning how *potterheads* establish their characteristics in the *fandom* (F01), and another about the will to participate in *fandom* practices as a way to obtain sensation, pleasure, and accomplishment (F02). The first function is related to five statements, which refer to: the resistance of fans to norms and procedures established by the canon (E01); the appropriation, by the fans, of canon's contents to question their dogmas (E02); the mutual recognition of similar characteristics (E03); the link established by mutual actions of influence, support, and coercion that take place in the *fandom* (E04); and the actions that prove the conviction of accepting the affiliation to the identity profiles defined by the canon (E05). This statement is also related to the second function, which is connected to another and refers to *potterheads*' motivation to participate in *fandom* activities (E06). The statement that concerns the bond established in the *fandom* (E04) derives (incident relationship) from the others, which in turn relate to each other (synchronous relationships).

To illustrate the spectrum of relationships that reveals this rule, an example is presented about a discussion of fans about the initial membership process to the *fandom*. The condition implies, similarly to new students in a magic school in the saga, the predisposition to participate in a selection that links the fan as a member of one of the houses where such students are allocated, as determined by the Sorting Hat, which makes this indication by reading the minds of the applicants, according to his or her personality. Nevertheless, the will of a student may prevail. This occurred to Harry Potter himself, who noted that Sorting Hat was unsure between two houses and repeated his preference mentally, influencing the hat's final decision, which assigned him to one house and changed his mind. In the saga, this is a decisive selection, given that the houses are the scope of the performance of activities and the establishment of relationships, thus becoming an identity for life. Within the *fandom*, this is considered with the same seriousness, and thus, despite the many tests available for this purpose on the internet, the result considered true by the fans is Pottermore's, a *website* created by the author of the saga, considered canonical by the

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fans, as the books themselves. The selection should be done only once, but the result does not always please the fan, who is forced to clarify his or her identity in the *fandom* or, more radically, to cheat the rules and repeat the selection, a fact that requires the gain of support and justification in front of the group, keeping his or her condition as a member.

The section below illustrates this aspect:

> That was stuck in my mind. I do not want Hufflepuff. Did I hesitate in some questions? What if the Sorting Hat is broken? I wanted another chance, just as Harry Potter had. Unfortunately, to fulfill my wish, I had to wait for several months before the website officially opened, to register another email and to start the adventure from scratch.
> But it was worth it. Now, my dashboard is dark blue and there is a very beautiful eagle in the middle. I do not like conformism. If I am talking about Harry Potter, participating to something that gives me the opportunity to experience a little the witch world, I want to feel it as close as possible. If I was outraged by Umbrige's abuse of authority, I would have also joined Dumbledore's Army. If I believed that Sirius was innocent and had the opportunity to help him, I like to think that I would do that. And if my opinion was not in line with the Sorting Hat's, why would I be silent?
> Therefore, if you believe you were assigned to the wrong house, do not be afraid: register another account, yes, and try to get in the house that you want. But be honest in your answers, as I was. I do not know if the beta version had some issues, if I was distracted or I do not know, someone casted Confundus on me and made me answer everything differently. What matters is that I am happy and excited to earn more and more points for the house of my heart. (Potterish, 2012, our translation)

In the selected example, a fan applies to one of the houses as a *fandom* practice (E06), following one of the essential steps to prove her loyalty to the canon (E05), therefore qualifying to benefit from collective practices (F02). However, the fan reports his/her discomfort with the result of the selection and questions whether she would have the right to a second chance, as it happened to the main character of the saga, using the story itself (E02) to justify breaking a rule (E01) as a way to bond to characteristics with which she identified more (F01). Thus, the fan tries to create identifications among participants (E03) and to encourage them to also circumvent this rule (E01). The bundles identified in this example discuss the desire to have a proper relationship with the canon, as this should be a more pleasant and truthful experience to fans' expectations. Circumventing one rule indicates the resistance as a mode of legitimized condition in the *fandom*, yet, only because it was based on knowledge of its own established morale.

This rule indicates how *potterheads* establish their relationship with the universe canon, searching for balance between the established rules and their own wishes and convictions. This is possible in the *fandom* space due to the support of the community for actions considered correct, as well as the rejection of unaccepted ones. This is how the relationship established between fans and canon, through the fandom, is based on adequacy logic, established in the balance of forces.

From the saga to the world

The second rule refers to *potterheads*' desire for canon values to be legitimized as real social values. It is based on a single function, related to the use of canonic signs to produce social critic using humor and irony (F03), which is related to both statements with synchronous relationships that refer to the relationships established in the *fandom* using support, coercion, and mutual influences (E04) and the production of cultural texts inspired and derived from signs of the saga universe (E07).

To illustrate this bundle of relationships, the image of a character (Dolores Umbridge) who is hated by fans is used. She imposed a dictatorial regime in the Hogwarts fiction school during her short-term mandate as director, revealing pleasure in torturing the students physically and psychologically. The most common punishment she adopted was to force students to repetitively write sentences with a magic pen that used the user's blood as ink, leaving a scar of the text on the skin. Such production exhibits the text "The punishment to those accused of defending LGBT rights will be to write down 1000 times: 'There is no homophobia.'" The image is a composition with the character (E07), ironically used to make a social critique of the fact that the existence of homophobia is denied (F03). The production reveals a social posture considered hypocritical and that aims to legitimize the value of the canon (i.e., tolerance of differences) more widely in the society.

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The rule shows how the canon of the saga is used by fans as reference to elaborate debates about established social values, many of which affect their choices and social life. Thus, some *potterheads*' practices are presented as political positions directed to certain values they considered unjust and countered by values present in the saga with which they identify. This action becomes possible as the *fandom* is presented as an environment providing emotional support to their members.

Potterheads forever

The next rule reflects the *potterheads'* desire to maintain their bond to the canon even during adulthood. This rule was based on five functions. The first refers to the effort of the fan to spread the value of the Harry Potter universe (F04) and derives from a statement regarding the guidance of new fans' involvement with the universe (E08). The second function refers to maintaining bonds between fans (F05) and relates synchronously to statements that discuss the bonds (E05), the exchange of information (E09), and production (E07) within the scope of the *fandom*. The third function refers to the promise to keep the universe alive (F06) and is based on two related statements, once again about the producing cultural texts based on the universe (E07), now concerning the identification between fans (E03), and also one that relates to the excitement caused by the advertisement of new products of the franchise (E10). The fourth function relates to the aim of fans to safeguard the image of the universe (F07), based on two statements about the establishment of relationships between *potterheads* (E04) and their dedication to *fandom* practices (E11). Finally, the last function of this group is attempting to keep the condition of the fan alive (F08). This function is related to seven statements, three of which were already presented in this group (E07, E08, and E10). The remaining refer to professional competencies developed in the *fandom* (E12), to nostalgic memories of experiences related to the universe (E14), the affinities of the fans with the canon (E15), and their strong affective bonds with the universe (E13). In this group of statements, the first three maintain synchronous relationships between each other and incidents about the last.

This bundle of relationships has been illustrated using an image that refers to the gap below the stairs that was used as Harry Potter's room when he was still a child and was brought up by his aunt and uncle after the death of his parents. It is also complemented by a text that states, in a playful tone, if a *potterhead*'s son is not like his parents, he will be treated as the character in the indicated situation: "My children must adore Harry Potter, otherwise I will just put them inside a cabinet under some stairs. So, they will not be forced to love Harry Potter... They will become Harry Potter." This example shows the objective of converting descendants to new fans (E08), and it evidences the *potterheads*' affective dependency in relation to the universe of the saga (E13), given that they feel the need to transfer their legacy to their offspring. Therefore, they disseminate the value of the universe (F04) when restating their condition as fans (F08). These aspects confirm *potterheads*' desire to maintain their active relationship with the saga's universe beyond their youth.

The rule refers to a managerial challenge. The Harry Potter universe is developed as youth and young adult narrative, and its fan base is formed by people who grew up following it and are now beginning their adult life. However, these fans refuse to accept the end of their bond with the saga with this passage and make an effort to keep it alive and ensure its future existence. This process is the means to keep their identity (i.e., *potterhead*) alive, which occurs by strengthening the relationships within the *fandom* with the assumption of responsibility to propagate, externally, the legacy of the saga.

A basis for life

The last rule refers to the *potterheads*' desire to feel safe in relation to the canon, a condition presented as a maturing crisis coincident with the end of the saga. The rule is based on two functions that refer to fans' attempt to maintain this condition (F08), as well as the protection provided by their relationship with the universe (F09). The first function is the only one in the study that relates to two rules and, therefore, was already discussed. The second refers to five statements, also previously discussed (E07, E13, E14, E15, and E16).

To illustrate this bundle of relationships, a post was found where a *potterhead* reports in video how his fan condition became a job:

> This week came a muggle, which in this case was a real muggle, not that he is not a witch; this week a big idiot came to my twitter talking about the fact that I am 24 years old and record videos about the HP series on You Tube, exactly. I was judged, the guy started taking a bunch of crap because I still record videos about the HP series. [...] I think this guy does not know the Indiana Jones, Star Wars, Lord of the Rings fans. [...] I became fan of the series in 2001, when

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> I was 11 years old, and since then I follow the series, and the series is part of my daily life to this day. I have never had one single day where I did not think about the HP series since I came out of the movies and had just watched the Philosopher's Stone; seriously, I am serious! I have not stopped thinking about the HP series for one single day and I think about it to this day and we are in October 2014. Why? Because I felt affection, I started loving this series so much; a love that lasted and lasts to this day; I gave in, I said: I love this series from the bottom of my heart, if someday I can work with anything involving it, I will. And that is how I had the idea to create the Potter Observatory – imagine if you earned money with your work, to talk about something you love. (YouTube, 2014, our translation).

The *youtuber* discusses his identification with the series (E14) and nostalgia about it (E13), faced with the attributions of adulthood (E16) and how this allowed him to work with something involving the saga (E12), aiming to maintain his condition of fan (F08) and the canon's aegis (F09). This provides him with a feeling of safety provided by the universe, given that he starts to accomplish a challenge of adult life based on a knowledge that he possesses.

If the previous rule indicates the desire to maintain the identity understood as youth and young adult in maturity, the present one shows how the *potterheads*' relationship with the saga represents emotional and social safety. The fact that they grew up involved with the Harry Potter universe causes the *potterheads* to find, in their lessons with the canon, a way to deal with the challenges of adulthood, where the *fandom* is the repository of values and bonds that subsidize this support.

FINAL CONSIDERATIONS

According to this study's results, the assemblage of desire evidenced in the *potterheads*' productive consumption has the function to maintain the bond with the saga. This guarantees the maintenance of an identity constructed by consumption throughout the years and provides safety during transition to adulthood. As such, *fandom* relationships are used as a basis, and there is the pursuit of social legitimacy beyond this community. Retrieving the theory presented as a foundation to interpret these findings, we will reflect upon the theoretical implications of the study.

To understand precisely how the assemblage of the *potterheads*' desire works, the components of this desiring machine are taken. *Potterheads* act as its agents, and the creativity of their productive consumption practices evidences the energy of desire. This becomes possible thanks to the connection established between them. It can be understood that new communication and information technologies, aligned with the participatory logic of Web 2.0, are presented as the concrete arrangement of this machine, while the *fandom*, as a space of affection and sociability, becomes the abstract machine that guarantees the existence of conditions for the assemblage of *potterheads*' desires.

In turn, all *potterheads*' actions in the *fandom*, which were found or selected for analysis, refer to their relationship with the canon. More than presenting itself as a reference for the collective activities of its fans, the canon is established as a field of knowledge, about which such practices are developed, configuring, in Deleuzian terms, a territory. This reference is used to measure the relationships within the *fandom* and to propitiate the *potterheads* to position themselves socially. Nevertheless, this knowledge is not considered exact: they are debated, appropriated, and given new meaning, through the constant processes of deterritorialization and reterritorialization.

The study reveals the potential for investigating *online* communities as favorable spaces for productive consumption practices (i.e., prosumption), intensified by their insertion in a field of participatory culture. Specifically, the investigation emphasizes the singularity of the fan as a highly emotionally involved consumer dedicated to activities related to cultural products he/she is linked to, and the *fandom* as a brand community, characterized as a space based on knowledge that is originally conceived by a cultural product, although not controlled by associated brands. In this sense, even though they do not have a performance nature, the results presented here also indicate the need of *marketing* management to observe *fandom* dynamics because the productive consumption that occurs in these social spaces are able to stimulate the identity of associated brands.

The theoretical contribution of the study is observed in the adoption of the Deleuzian notion of desire as a perspective to understand the collective action of consumers in practical cultural contexts, articulated by the understanding of consumption activities as productive and by virtual interaction environments as favorable spaces for participation. The adoption

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of this perspective in future studies can improve the discussion about the pertinence of this approach in the consumer research field. Considering the unfolding of the present study, the adoption of this approach in studies about *fandoms* of other fantastic universes or about other cultural products (e.g., music and *games*) could, respectively, improve and extend the discussion presented here. On the other hand, the investigation of fan practices can also focus on understanding how these activities are related to brands.

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THE FUTURE OF GRADUATE PROGRAMS IN BUSINESS ADMINISTRATION: NEW CHOICES AND NEW MODELS

"If at first the idea is not absurd, then there is no hope for it."

Albert Einstein

INTRODUCTION

The relevance and impact of universities causes frequent debate in the international context. Every congress and seminar has a panel to analyze evaluation indicators. The question that arises is: do we impact society? In 2017, the University of São Paulo (USP) implemented changes in its evaluation of units and lecturers. A Permanent Evaluation Committee (PEC) was created, with representatives of USP lecturers in the areas of Arts, Humanities, and Social Sciences, along with representatives from the Biological and Health Sciences, and representatives from the Exact and Technological Sciences.

It is important to realize the profound differences that exist between the various areas of universities and also between seemingly similar areas. There are great differences between the expectations of the teaching, research, and extension activities in areas such as Literature, Cinema, and Administration, just to mention three domains within the Arts, Humanities, and Social Sciences at USP. This demonstrates the challenge of defining the parameters to establish the expectations from a lecturer and therefore, the role of graduate programs that train lecturers for teaching, research, and extension activities.

This introduction, which is limited to the account of a specific, personal, and institutional experience, illustrates the challenges of defining the knowledge requirements relevant to graduate programs. Traditionally, a basic distinction is assumed to exist between graduate programs focused on basic sciences and applied sciences, or, as some prefer to term them, programs focused on scientific training and those focused on vocational training. Programs focused on scientific training cover the so-called hard sciences and those that, in theory, should not be concerned with the immediate application of their results, for example, Physics, Chemistry, Biology, and Philosophy, among others. Programs focused on professional research cover those areas in which the research

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results are expected to have a practical application, and include, for example, Medicine, Dentistry, Education, Engineering, Law, Administration, Economics, and Accounting, among others. An enormous challenge emerges based on this difference between scientific and professional research, when it comes to determining the role of a graduate program in training researchers. When an institution, whether it is a research support agency, a university or a school with some courses, defines the forms of evaluation, it is promoting what should be prioritized in the programs under its aegis. This situation makes it difficult to define rules that are valid for all programs, whether scientific or professional.

As a case study, the graduate programs in Administration will be considered Administration, which is still taught in the first year of undergraduate courses, emerges as a field of knowledge from pioneering studies on the so-called US Factory Floor in the early twentieth century (Morgan, 2006). It is, therefore, a recent area in the process of academic legitimacy, and as expected, given its relative newness, is based on related disciplines that possess greater theoretical traditions, such as Economics, Engineering, Sociology, and Psychology. I understand that a graduate program in Administration needs to contemplate, in the training of its students, some important dimensions:

- Knowledge and technology transfer to society
- Impact of research and publication
- Non-traditional teaching
- Internationalization and nationalization

KNOWLEDGE AND TECHNOLOGY TRANSFER TO SOCIETY

Large Brazilian public universities, where most of the scientific production in the country is concentrated (Scimago Institutions Rankings World Report, 2017), still face a great deal of prejudice regarding their association with business. This prejudice is founded in concerns about scientific research being manipulated by the immediate interests of companies or governments. Nevertheless, similar experiences in different countries must be analyzed to explore this debate, which is decisive for the future of Brazilian universities.

Interesting conclusions can be drawn from international experiences. In his book *MIT and the Rise of Entrepreneurial Science,* Etzkowitz (2002) provides a historical account of MIT's pioneering role in creating forms of interaction with the industry and then diffusing these models to other schools. This interaction is stimulated by the perspective that science can be an important driver for knowledge-intensive economic development.

Etzkowitz (2002) explains that initiatives to transform research into applications in society emerged in the early nineteenth century in Germany, although on a limited scale. These initiatives also occurred in England and other countries with a strong scientific research tradition. Until the late nineteenth century, basic and applied research had no significant demarcation in the United States. The author indicates that the injection of funds into academia by large and prosperous industries created in the late nineteenth century was accompanied by fears that the donors were trying to influence the research agenda. The creation of a basic research ideology was part of the effort made by universities to establish a secure space for science, even when funded by these contributors. This distinction between basic and applied research continued until World War II, when scientists who had gained experience within the basic research culture became involved in war-related engineering projects, such as the radar, which also led to the development of radio astronomy and elucidation of theoretical issues in cosmology during the post-war period. This theoretical merger among those researchers during the war eliminated some of the gaps between basic research and engineering

The university-business relationship dilemma faced by the US and other countries, in the middle of the previous century, still persists in Brazil. Graduate programs in Administration in Brazil can contribute to this debate by presenting methods for university-business interaction.

Knowledge and technology transfer to society can take place through: (1) Creation of startups, (2) Patents, (3) Licensing, and (4) Traditional means such as the production of academic and scientific articles.

Several studies offer new pedagogical and methodological approaches to entrepreneurship teaching (Garbuio, Dong, Lin, Tschang, & Lovallo, 2017). There seems to be a clear "window of opportunity" for Master's degrees and professional doctorate programs (recently regulated in the country) to play a relevant role in this transference. The entrepreneurial university concept (Etzkowitz, 1983) and the role of international university rankings, which have technology and knowledge transfer in common (despite the different nomenclature), can be important stimuli for university-business interaction. The university and its graduate programs in Administration can play a major role in the innovation ecosystems of their regions and in Brazil (Clarysse, Wright, Bruneel, & Mahajanb, 2014).

IMPACT OF RESEARCH AND PUBLISHING: IMPACT FOR WHOM?

In the 1990s, academics in the field of Administration faced questions that were representative of the stage of maturity of their particular regions in Brazil, such as: "How many of your works were approved by the congresses?," "Will you be presenting at EnANPAD?," "Are you presenting any work at the Academy of Management?," "Are you going to the Strategic Management Society?," and "Are you going to the Academy of International Business?". The publications submitted in congresses augmented the evaluation scores of lecturers and of programs sponsored by research-support agencies. The new century saw increasing pressure in Brazil on academics in the field of Administration to submit papers to national and, more importantly, to international journals. As a result, submission of articles to congresses lost its relevance for evaluation by development agencies and consequently for graduate programs in Administration. This occurrence risked weakening the debates crucial for the advancement of knowledge. The questions have changed, and at great speed: "How many articles in indexed journals have you published this year?," "What is the impact factor of the journals in which you publish?," "How many citations did your articles have?," "What is the impact of your research on society?," and "And for the productive sector?".

This is not a recent discussion, and controversy surrounds the level of impact and the risks associated with assessment metrics (Garfield, 1972; Lawler, Mohrman, Mohrman, Ledford, & Cummings, 1983; Seglen, 1997). As previously discussed, there is a growing perception that research in the field of Administration will need to impact society in addition to publication in high impact journals and the quantity of citations from published work.

Research Councils UK (RCUK) defines the impact of research as "the demonstrable contribution that excellent research does to society and the economy" (Economic and Social Research Center Council, 2017). This may involve academic, economic, and social impact. It is important that research effectively contributes to improvements in the quality of life and work environment, so that public and private companies have greater socio-environmental commitment to increase the international competitiveness of Brazilian companies and create knowledge-intensive jobs with higher salaries and so on. Nowadays, we have an academia worried about publishing articles and collecting points to maintain or raise its CAPES valuation – enclosed in its "ivory towers" and little concerned about the so-called "real world." Most leaders in the management of public, private, NGO, and startup companies neither quote nor use our research in the domain of Administration. Training in the most advanced techniques of quantitative and qualitative research is vital, but it is the prerogative of the graduate programs in Administration to train people to render relevant research effective in theory and in practice.

NON-TRADITIONAL TEACHING: BLENDED DISCIPLINES, REAL PROBLEMS, AND ARTIFICIAL INTELLIGENCE

A graduate program in Administration should provide students with the opportunity to learn by interacting with experienced lecturers. To this end, mentoring activities are an obvious path, where the trainee accompanies experienced teachers. There is however, a growing challenge to provide graduate students with the opportunity to learn from new didactic approaches. The increasing usage of didactic approaches in the format of blended disciplines, which include Distance Learning (DL) resources, videos, films, tasks for each topic, and solid and fast feedback, can be accelerated with the participation of graduate students. There are several challenges related to the adoption of blended disciplines by teachers, which are related to (1) teaching-learning processes, (2) community concerns about the quality of these courses, and (3) technical challenges and issues (McGee & Reis, 2012; Ocak, 2011). In the Swedish graduate model, for example, PhD students are employed as teachers for the duration of their course, and this experience qualifies them for selective processes after completing their PhD degrees. Artificial intelligence to customize learning experiences should soon become readily available on a large scale, as seen by the advances of the Watson program by International Business Machines (IBM, 2017). An increasing number of graduate students should have their non-traditional teaching skills developed during the graduate period.

INTERNATIONALIZATION AND NATIONALIZATION

A relevant challenge for the graduate programs in Administration concerns not only the development of a global mindset in teachers and students, but also the development of a national attitude to raise awareness of the country's specific issues. Two innovations – those of offering regular English courses to attract foreign students, and visiting international professors who offer new perspectives to the students – have stimulated the internationalization of graduate programs, including those of universities in the so-called

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"emerging markets" (Bartell, 2003; Huang, 2007). This debate has no relevant experiences to offer about Brazilian universities having campuses in other countries despite some attempts, such as that of the USP, which recently closed its campuses in London, Boston, and Singapore due to the economic crisis affecting Brazil and the university itself. Magazines published in the English language in Brazil are also becoming a trend, despite the fragile economic situation (Alcadipani, 2017). Research projects with partners in international schools are a very suitable method of knowledge development on topics of mutual interest and also for subsequent joint publication with colleagues from other countries. Scholarships for sandwich courses are also very important in creating this global mindset.

But the issue of nationalization is also critical. Programs should encourage students to undertake studies that equip them with the skills to deal with national problems. Their students should be taught to analyze big national issues, both in terms of value creation through strategies and innovations and in terms of reducing imbalances (economic, social, and regional) in a country that still figures among the most unequal in the world. It is necessary that students and researchers are able to formulate agendas and research projects that meet not only the needs of the country but also those of Latin America without simply replicating agendas and research projects imported from developed countries. The Dinter and Minter programs promoted by CAPES, which correctly prioritize the receiving entities in the most deprived regions of the country, can be important tools for understanding and formulating public and private management solutions for major national problems.

CONCLUSION

This brief reflection is yet another invitation to the debate that consolidated solutions must be provided to the challenges faced by the graduate programs in Administration. Much of what I have addressed here comes from my own experience within the Coordination of the Graduate Programs in Administration of the University of São Paulo (the PPGA-USP, in Portuguese) over the past four years. These are the challenges that we face and must resolve with our internal and external partners. After all, in the university setting, all endeavors are the result of a collective effort.

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GRADUATE BUSINESS ADMINISTRATION PROGRAMS: MEETING STAKEHOLDER EXPECTATIONS

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INTRODUCTION

Traditionally, it has been taught to business administration students at the undergraduate level that the survival of an organization depends on its relevance as perceived by stakeholders (Freeman & Reed, 1983). However, one of the most important authors in the area of business administration in Brazil stated that about 20 years ago—when I was a newcomer to the academy—I expressed my frustration with the imperfections I identified in the management of the school. The following line never ceased to echo in my mind: "We are famous for teaching business administration, not for managing." Unfortunately, I found that this phrase was not a criticism, but a fact.

The motivation for this text comes from the idea expressed by the phrase above. However, it is necessary to emphasize that this is a partial vision and that forums in which Brazilian graduate programs in business administration participate tend to focus on concise discussions instead of deepening discussions on topics that affect the management of these programs.

First, the most relevant stakeholders were listed, and their pressing interests were identified (subject to confirmation). Subsequently, using the 2013-2016 Evaluation Report – Quadrennial 2017, of the business administration, accounting, and tourism areas (CAPES, 2017), and considering only academic programs, the author analyzed the results obtained for the evaluation questions in relation to the interests of the stakeholders identified.

IDENTIFICATION OF GROUPS OF STAKEHOLDERS

In this section, six main groups of stakeholders involved with the programs are identified, and their interests, attractiveness factor, and contributions are listed. Table 1 summarizes these findings.

Student body

The first group interested in the performance of the programs is composed of the student body and can be divided into two categories: students and alumni. This group invests or invested significant amounts of financial and nonfinancial resources, expecting that the knowledge acquired as a result of its engagement would be useful to it. This depends on the objective quality of the knowledge

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and the skills acquired as a result of the group's participation in the program and the reputation it enjoys as alumni. Thus, a high-quality student body attracted by a good reputation, by becoming alumni, can have its reputation increased through society's perception of its contributions as a result of its participation in the program. Furthermore, the members of this group also make contributions through their work ability and dedication, which attracts institutional partners and contributes to a more motivated faculty.

Organizations

The second identified group was composed of the organizations that benefited from both the training acquired by the alumni who have built a career in their organizations and the relevant knowledge generated by their research. This group contributes to the program in different ways: the first and most common is by allowing program participants to conduct research; and the second is by investing in research activities and by offering research grants that stimulate the participation of professors and students in relevant research for the organizations.

Both the identified groups have a common interest in the reputation of the program. While the student body seeks, by obtaining a graduate degree, to reduce the risks considered by organizations in the hiring process, organizations expect their performance to be compatible with the expectations generated by the reputation of the program.

Discussing the several variables involved in the reputation-building process goes too far beyond the scope of this text; however, it is possible to determine that adequate management of reputation is an important factor for meeting the expectations of these two first groups of stakeholders. Thus, correct identification of alumnus profile and the generation of relevant knowledge for organizations are important objectives to be attained.

Faculty and administrative staff

The third group of interests is composed of those who collaborate with the programs more permanently: the faculty and administrative staff. This group is responsible for allowing the programs to conduct the activities most important to their missions—namely teaching, research, and extension. It fits into all the widely known aspects of human resources management, and identifying its ambitions and interests to serve them properly is an essential condition for an organization to play its social role.

In this respect, despite the natural differences between the profiles of the two groups, their interests are congruent. As employees, they want their performance to be recognized inside and outside the program, and they want it acknowledged that their daily lives have social relevance. In this sense, educational institutions, by their nature, have a significant advantage over the others, because their mission is unquestionably to make society better. Professors seek not only adequate conditions to conduct their research but also to positively influence the lives of students and guide them to achieve their full potential. Furthermore, a student body with the necessary dedication and preparation to build relevant research positively affects teachers' satisfaction with the program.

High-quality professors are desired by all programs, but the problem of how to attract them is a constant challenge. Here, again, it seems that reputation plays a decisive and synergistic role in the interests of the first two groups because it is decisive in the choice of the candidate for the faculty. Thus, because reputation generates expectations, it allows candidates with the desired profile to be attracted.

It is important to note, however, that without adequate administrative support, even the best faculty in the world will perform poorly. Although teaching, research, and extension usually have teachers and students as protagonists, these are not feasible without administrative support. Therefore, being attentive to the interests of this subgroup of employees is an institutional task of the programs. Attracting administrative staff of great potential to the program, training them, and properly recognizing their performance are tasks of great complexity and, therefore, demand constant dedication.

Assessment bodies

The fourth group of interest is composed of entities such as *Coordenação de Aperfeiçoamento de Pessoal de Nível Superior* (CAPES), *Associação Nacional de Pós-Graduação e Pesquisa em Administração* (ANPAD), European Foundation for Management Development (EFMD), Association to Advance Collegiate Schools of Business (AACSB), Association of MBAs (AMBA), which contribute to the improvement of the performance of the programs by evaluating and indicating opportunities for improvement. This group plays an important role, because, by indicating the degree quality using its methodology, it contributes to the building of reputation, which will influence the first three groups mentioned above.

Compliance with the standards of evaluation cannot be considered an end, but a means, of meeting the interests of other stakeholders. It is possible to observe that, explicitly or not, these institutions claim that they are relevant because of their capacity to improve the performance of the programs evaluated by them. In this sense, using a highly qualified technical staff, they offer invaluable help to the processes of continuous improvement that

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every organization pursues. Moreover, these institutions provide a nonendogenous view of the performance of the programs, which creates a discomfort necessary to avoid accommodation and self-indulgence.

Other graduate programs in business administration

Other graduate programs are also a group of interest. Because they are peers and have a high similarity of interests, participants in this group can offer many opportunities for cooperation through the sharing of scarce resources. This sharing is aligned with the interests of society, because it will benefit from better results and greater effectiveness. Furthermore, a set of partnerships among the programs would lead, through the exchange of experiences and natural learning, to a constant evolution of the standards of quality on which it is based to fulfill the programs' missions.

The number of cooperation agreements suggests that the programs are focused, at a greater or lower extent, on their immediate environment. Synergies among the programs should be fully explored. It is important that the programs demonstrate a reciprocal vision of partnership rather than competitiveness, considering that the success of all depends on the success of each.

Society

Another group of interest is society as a whole, because the programs may generate social impact. Although a consolidated methodology for measuring this dimension is not yet available, it is natural to expect some attention from the programs directed to this issue because their legitimacy, and therefore their sustainability, depends on how well they can contribute to improved social well-being. Society's positive perception of the programs' ability to contribute to its development may foster their reputation and ensure their existence in a competitive environment.

Table 1 summarizes the information on the main stakeholders, their focus, what attracts them, their contributions, and their relationships.

Table 1. **Stakeholders, motivation, and contributions**

Group	Focus of interest	Attractiveness factor	Relevant contributions
Students	Knowledge and Career	Reputation	Reputation, Research
Organizations	Collaborators and Knowledge	Reputation and Alumni Profile	Reputation, Financing, and Field of Research
Social body	Work Conditions	Reputation and Availability of Resources	Knowledge Generated and Administrative Support
Assessment bodies	Quality	Regulatory or Voluntary	Reputation and Counseling
Other Programs	Synergies	Possibility of sharing resources	Effectiveness
Society	Social Impact	Relevance	Reputation

ANALYSIS OF THE 2013–2016 EVALUATION REPORT

This section aimed at comparing, through the evaluation report, the perception of the areas and performance of the programs, using as reference the interest of the identified stakeholders.

For that, the author selected the items that were more related to each interest and observed the concepts obtained, thus gaining an aggregated view of the perceived performance.

General considerations

The way the data were organized in the report did not allow for an immediate separation between the performance of the business administration and public administration programs. As a result, some analyses reported in this section may be distorted. However, it is believed that this did not significantly affect the insights generated.

Programs' proposals

What was most striking in the analysis of the concepts attributed to the evaluated programs was that although 60% of them reached a very good (VG) concept, only 47% reached this concept in item 1.1, which refers, according to a free interpretation, to the quality of the content delivered to students.

In item 1.2, in turn, which refers to the process of continuous improvement in attracting students and improving the social impact generated by alumni, only 40% reached a VG

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concept. Thus, in each of these items—which together represent 80% of the evaluation criteria of the program proposal—less than half of the programs evaluated obtained a VG concept.

Therefore, there is space for improvement in the performance of issues directly affecting the student body (current students and alumni), organizations, and society.

Faculty

Concerning faculty, 76% of the programs evaluated reached the maximum score. In the sub-items of item 1.1, which refers to the level of training and diversity, 83% reached a VG concept. In item 2.2, which refers to the evaluation of the dependence of the program on nonpermanent professors, 91% reached the maximum score. Conversely, when assessing the involvement (measured by hourly workload) of permanent teachers, as well as their ability to obtain research funding outside the program, only 45% obtained the maximum score. The two other evaluation factors related to the faculty, participation in an undergraduate program and participation in events aligned with their field, obtained excellent scores, with 72% for the first and an undeclared value for the second, but that indicates almost complete adherence to the parameters required for a maximum score.

In this context, although it is difficult to control—especially in times of scarcity of government resources due to economic crisis—the obtaining of funding for research is undoubtedly the factor that deserves the most attention. This points out the need for further investigation on access to private financing, which naturally implies that the identification of the private entities that the research developed is relevant and applicable.

Student body, theses, and dissertations

A high percentage of the evaluated programs obtained a VG concept in this category (63%). The two items in which less than 50% of the programs obtained a VG were those referring to the propagation of guidelines among members of the permanent group of professors and the participation of students in events in the area. Concerning the first item, the author failed to establish a clear relationship between stakeholder interests and the proposed measurement. Apparently, the pursuit of this evaluation criteria may lead to a significant reduction in the freedom of students to choose, as a referee, the teacher whose line of research is better aligned with their interests and motivations. Therefore, a lower percentage of maximum scores does not seem relevant. Otherwise, it may be needed for improving the degree of satisfaction of students and its consequences.

Furthermore, although, the country's economic situation seemed to influence the participation of students in the events in the area, a lower percentage of maximum scores may indicate the need for structuring events of lower cost to overcome these constraints.

Intellectual output

Intellectual output was the category in which fewer programs obtained a VG concept (37%). The item referring to the evaluation of the relevance of academic production was the worst, with only 24% of the programs evaluated reaching the maximum score, which may be a consequence of the distribution of concepts by quartiles in the second indicator. It should be emphasized that the results were not worse because of the other two evaluation criteria: distribution of production by NDP, with 54% of maximum scores; and the other intellectual outputs, with 56% of maximum scores.

These results stand out because they are indicative of the knowledge generated by research, which is related to the first item of the evaluation of the proposals (quality of content delivered to the students) as well as to the issues regarding the attraction of nongovernmental financing to research.

Although the overall volume of intellectual output may have been increased, it is important that the level of scientific accuracy of publications increases more strongly.

Social insertion

Social insertion obtained the second-last worst score, with 55% of maximum scores, surpassing only intellectual output. It is important to note that the most positive item refers to the degree of transparency of the program (71% of VG concept); meanwhile, in the other two items (impact and integration), 50% of the programs evaluated obtained the maximum score.

Given these results, there may be an excellent space for meeting the interests of two groups of relevant stakeholders: other programs and society as a whole. This is a space that, to be more occupied, depends less on the availability of financial resources. Concerning the other programs, cooperation positively influences the availability of resources, because its immediate consequence is greater efficiency in the allocation of resources.

MAIN FINDINGS FROM THE ANALYSIS

Some important findings for the development of graduate programs in business administration in Brazil have arisen from

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the research and subsequent analysis reported in this text. In this last section, they are highlighted and commented on briefly.

The first finding was that reputation affects the relationship of the programs with their stakeholders significantly. What is established with stakeholders can easily be classified as service provision; thus, reputation building is relevant in the process of attracting students, organizations, and the social body, and of the development of the mission of the programs. Therefore, it is a factor that requires special attention.

Thus, the adequate management of reputation and all the manageable variables associated with it are critical factors for the success of the programs. In this sense, it is important to focus on the construction of well-defined profiles of alumni aligned with the expectations of the organizations where they work. Furthermore, relevant research has a positive impact on the whole of society and contributes to strengthening ties with potential funding organizations.

However, as observed in the 2013–2016 evaluation report, the factors that most affect reputation building (quality of delivered content, the relevance of scientific production, and social impact) received a worse evaluation.

In this case, there is a clear opportunity for improving these aspects of the programs, and it should be taken as soon as possible.

The second finding is that there are opportunities for increasing integration between the programs. Historically, the continental dimension of the country might have negatively affected this process. However, given the financial constraints of graduate funding in Brazil, moving forward in this area can make a significant difference in the future performance of the programs.

This text aimed, albeit minimally, at fostering debate about the role of the programs in which the professionals of the business administration field participate. Contributions and criticisms of this approach, if any, will be a good measure of how much this aim has been achieved.

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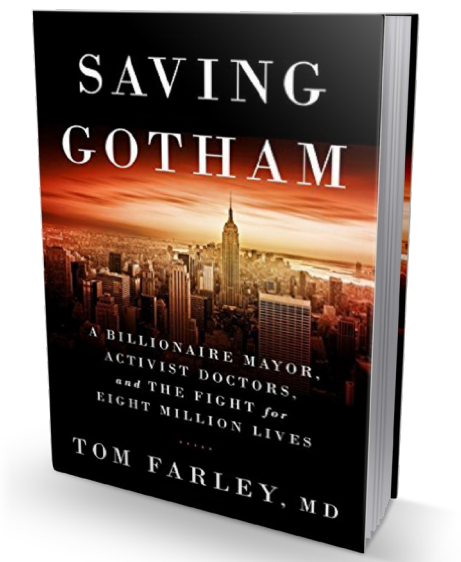
BOOK REVIEWS

Original version

THE TALE OF A TURNAROUND IN THE NYC HEALTH DEPARTMENT

SAVING GOTHAM: A BILLIONAIRE MAYOR, ACTIVIST DOCTORS, AND THE FIGHT FOR EIGHT MILLION LIVES

Tom Farley, M.D. New York, USA: W.W. Norton & Company Inc., 2015, 320p.



By

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When Tom Farley took office as Commissioner of the New York Health Department in 2009, replacing Thomas Frieden, he felt like "taking over as manager of the Yankees after they had won the World Series seven years in a row." Farley took the helm of a successful change started by Frieden in the centenary New York City Department of Health and Mental Hygiene, created in 1866 with responsibilities from street cleaning and sanitary permits to fight against infectious diseases, such as cholera and yellow fever.

In 2002, Frieden was nominated Commissioner of Health by the new elected mayor, the billionaire Michael Bloomberg and, to accept the position, proposed that the fight against smoking should be a high priority as a public health issue. This proposition did not seem obvious in a city still suffering with the 9/11 events few months earlier and was still afraid of chemical terrorist attacks. Nevertheless, Frieden compared the death toll related to smoking with "three jumbo jetliners crashing into a mountain every day."

Coming from the financial market, Bloomberg understood numbers. Frieden's presentation showed him what is generally called as an epidemiologic transition. In affluent societies, sanitation, vaccination, and nutrition had controlled infectious (or communicable) diseases, such as cholera, which were not the big killers anymore. Cancer, diabetes, and cardiovascular diseases, also known as non-communicable diseases (NCD) emerged at the frontline of killer diseases, instead. In the United States, for example, while 5% of deaths are caused by infectious diseases, 88% are related to NCD.

Changes in disease numbers pointed to a great need for reshaping the City Health Department. NCD are related to lifestyle, and fighting their causes would be necessary to prevent them. Smoking, unhealthy diets (based on sugar, salt, and junk food), sedentarism, and alcohol abuse are the new enemies. However, controlling the behaviors of the population and altering the "toxic" environment would demand new competencies and long-term strategies to be developed by the Health Department.

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Frieden started by building political support with the full personal commitment from the new mayor. Bloomberg embraced Frieden's ideas, and smoking became not only the biggest public health agenda of the city, but a top priority of his administration. According to the mayor's statement, "NCD, especially heart disease and cancer, far outstripped all other causes of death in our city and the single most effective thing that we could do to reduce them was to discourage smoking." This speech sounded more like a discourse coming from a public health professional than from a politician, as Farley notes in the book's preface.

High-level political support was mandatory for making the changes in the city's public health administration; however, it was not enough to convince the public, the media, and of course, the tobacco industry. To influence the City Hall to approve laws restricting access to cigarettes, technical support was needed, not only from traditional public health doctors, but also from lawyers, media, and other specialists.

Data should be provided to support the scientific arguments proving the rationality behind controversial measures such as banning smoking from public spaces due to second-hand smoke. Computer systems were installed in doctors' offices to register data on patient behavior, not without some resistance. Opinion polls also become a data source in evaluating the efficacy of the measures, along with studies on previous cases, such as the California smoking ban acts in place since 1994. Promotion of research findings by the Health Department published in prestigious scientific journals are also effective.

Frieden's work in the Health Department deeply changed New Yorkers' behaviors. Banning smoking in public places, limiting advertising, and increasing taxes on cigarettes led to a reduction in the city's number of smokers, and deaths caused by smoking decreased by 11.2%, from 2003 to 2008. Considering that this is New York City, it is not an exaggeration to say: "If you can make it there, you can make it anywhere."

Smoking was just a part of the problem. Excessive trans-fat, salty food, and sweet soda consumption were also habits to be changed to save more lives. However, establishing limits on food and drink consumption seemed like too much government intervention in citizens' lives, especially under Bloomberg's republican administration, usually considered less interventionist.

If taxes on cigarettes and the Smoke-Free Air Act had made healthy choices easier and unhealthy choices harder, the same could be true for eating. Differently from smoking, there was less evidence on the best ways to fight endemic overweight, usually tackled by individual treatment and not by public policy interventions. While doctors work hard to save individual lives, those who work in public health must act to save millions of lives at once. Considering the number of deaths related to diabetes and heart diseases due to overweight, there was a mission to be accomplished.

Equipped to its new mission, the City Health Department achieved some degree of success with new ban policies. Trans-fat consumption at fast food chains, such as McDonald's, KFC, Pizza Hut and others, dropped by an average of 2.4 grams per meal, down by about half a gram between 2007 and 2009, after the trans-fat ban took effect in 2006. Actions from the Health Department led some restaurants to reformulate or replace their menus with less trans-fat and healthier meals.

The fight to reduce soft drinks consumption was a major challenge. The battle to establish sweet soda consumption limits was held at the state's Supreme Court, which refused to reinstate the portion cap of 16 ounces proposed by the Health Department. It was a major victory for the American soft drink industry that held the argument that they were defending the New Yorkers' freedom of choice. However, the intense dispute was covered by the media, and public opinion was divided, with around 40% of New Yorkers in favor of the portion cap.

After his successful performance at the New York Health Department, in 2009, Frieden was called by the Obama administration to take over as the Director of U.S. Centers for Disease Control and Prevention (CDC). Tom Farley, had worked for the Center for Disease Control's Epidemic Intelligence Service and the Louisiana Office of Public Health, and was already working as Frieden's advisor since 2007, when was nominated as the commissioner at the NYC Health Department, to replace Frieden in Bloomberg's third term as a mayor, from 2009 to 2014.

After his time as Health Commissioner for the Bloomberg administration, Farley started writing *Saving Gotham*, which is a vivid report on the behind-the-scenes transformation of the Health Department, led by Frieden and Farley himself along with a number of other "activist doctors" (as stated in the book's subtitle.) The eight years of Frieden at the Health Department is narrated in the book's first part, while the second part tells about Farley's time in office.

The New York experience told in this book is an inspiration for policy makers and society in general. For more than 150 years, governments had assumed that the only diseases worth preventing were caused by infections; now it is clear that the reductions in non-infectious diseases will come from gradual interventions to improve and save the lives of the population. As in the title of the last chapter based on Bloomberg's speech at the United Nations: "That is, ultimately, government's highest duty."

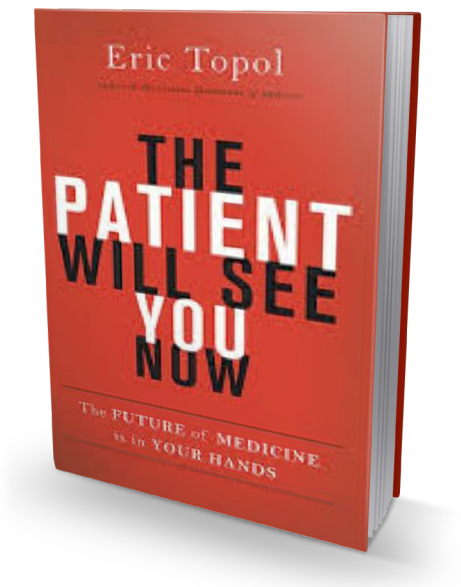
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BOOK REVIEWS

Translated version

IS THE FUTURE OF MEDICINE VIRTUAL?

THE PATIENT WILL SEE YOU NOW. The future of medicine is in your hands.
Eric Topol. New York, USA: Basic Books, 2015. 364 p.



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A new phase in the doctor-patient relationship has been inaugurated, even though a good part of the academy and the market is resistant to accepting it. Recent examples that demonstrate this reality demand attention on the part of industry leaders, which justifies the review of this book. Eric Topol, a cardiologist, is considered an authority regarding the future of medicine; he presents his vision in this work divided into three sections, the first comprising four chapters, the second five, and the third six. The primary themes of the text are the democratization of access to health care and the revolution of the doctor-patient relationship through the empowerment of the patient using technology. The author analyzes the forms of healthcare in the United States and how technology can modify them.

In the first section, Topol points to the rapid spread of smartphones, which resulted in the above-mentioned empowerment or, as mentioned in the book, "the rise of smart patients." This change in the doctor-patient relationship is considered by the author the greatest evolution since the invention of the printing press, allowing the democratization of access to information and putting at stake the paternalistic training of doctors, which, according to the author, still persists despite all the discourse to the contrary.

The author cites various applications for mobile phones that can perform several tests, providing results with great speed. He also brings creativity to the discussion, which simplifies and reduces costs related to a series of ancillary tests for diagnoses of questionable necessity. The first section ends with a narrative of the case of Angelina Jolie and her determination to use the available technical-scientific knowledge to decide, as a patient, if she wanted to undergo a surgical procedure to avoid the risk of developing breast cancer due to a genetic mutation.

In the second section, the author discusses the sequencing of the genome and its patentability, exploring the possibility of creating a system that would allow the combination of all available information about a particular human being, as if it were a geographic information system (GIS). Topol stresses that the genetic sequencing of fetuses to assess important chromosomal alterations is already underway and that this procedure will allow a better understanding of the inter-relationships between genes, impacting the prevention of diseases and providing the diagnosis for a series of conditions that remain unclassified in addition to providing treatment for others.

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The advancement of technology will allow diagnosis and interventions at molecular levels, by modifying the activity of medical knowledge and economic actors. Several tests currently performed in diagnostic centers can be made by smartphones, with daily mapping. The author presents the history of the company called Theranos, which aims to allow, through nanotechnology, a series of tests with only a drop of blood, for a substantially lower price, guaranteeing patient access to the results (note - Theranos appeared in the business media in 2015 as unable to deliver the results it promised).

Topol believes that, in the near future, nanochips will be inserted into the human body, generating a series of information to be interpreted in microseconds by our own smartphones. This would reallocate the position of the medical team from centerpiece to subsidiary components in diagnoses and treatments. The greater the amount of data generated, the greater the need for it to be interlinked, providing a general and specific overview. This would reduce the effect of the information asymmetry that exists today, working in favor of the patient who currently seeks several physicians of distinct specialties, who usually act in isolation without analyzing the whole picture, and whose diversified prescriptions can generate unwanted drug interactions.

The eighth chapter of the book is devoted exclusively to the discussion of the costs of the medical system as a whole and, especially, in the North American reality. The author compares prices, demonstrating the large variation observed between medications and tests, depending on the market, although the price of inputs is similar. Topol states that the system operates on the logic of fee for service, rather than motivating prevention. The current model leads to wastage of one-third of all resources spent on health in the country, which is equivalent to six percent of the total of its (high) gross domestic product.

The costs of various inputs, as a rule, are not known by doctors, due to confidentiality agreements signed between companies operating in the industry and hospitals, rendering the transparency desired in the 21st century unviable. In addition, faculties fail to demonstrate the importance of young residents knowing costs, blocking their access to an important criterion for the financial sustainability of health systems.

The last chapter of the second section conveys the role of virtual medicine (telehealth), which has been reducing the number of visits of patients to doctors, despite the increase in longevity and chronic diseases. It is evident how this model can be exploited to increase access to information and reduce costs.

The third and final section of the book begins with a discussion about the sustainability of hospitals given the technology and the lack of transparency of these institutions, especially regarding medical errors and other safety problems, which impairs accountability. The first chapter of the section discusses whether, in the future, there will be hospitals that operate in the current model. The new proposal (which already exists in other countries, such as Brazil) can be the transfer of a number of services to the citizen's residence, as a paradigm of access to health care.

Further ahead, the author discusses the still fictitious possibility of creating a database with all the information of patients who suffered and/or suffer from the same condition, the treatments given, and the results achieved. This possibility would allow scientific breakthrough, outlining the best treatments for each type of disease and genetic profile of the patient, in addition to enabling new discoveries with the exchange of knowledge and data. The data would further predict when, how, and why a particular person would develop a certain disease. Among the concerns outlined in the book, one is based on the real possibility that the vast personal information of patients generated by technology could be accessed by hackers, who could use such data to achieve some profit.

Another existing tension pointed out by the author is between the democratization of access to health care and the individualization of treatments. Today these are opposed, given that democratization presupposes cost reduction, while the individualization of treatments is based on its possible increase, given the reduction in economies of scale.

The book reviewed is innovative, bringing possibilities that, if they occur, will change the roles of health professionals and patients, bringing breakthrough medicine and the best treatments to all citizens. However, the interests imposed by the economic-financial market, the prevailing paternalistic culture in medicine, the low or almost no access to the internet in many regions of the globe, the regulatory bureaucracy and the capture by its agents, besides the risks inherent in the violation of information security, can be obstacles to the implementation of the democratization of health, which may maintain, for many, the reality suggested in the field of science fiction.

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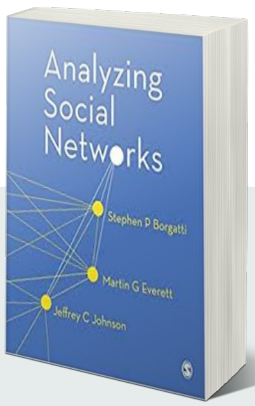
BOOK RECOMMENDATIONS

Translated version

Social network analysis: The initial bibliography

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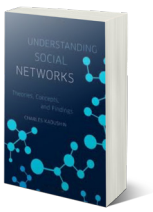
The social network analysis (SNA) approach covers a wide range of methodological tools and aims at integrating concepts from mathematics (graph theory) to economy sociology (relational mechanisms). It also receives contributions from various disciplines, including physics, statistics, economics, and psychology, among others. In business administration studies, where it is used in an increasing number of articles, this approach is considered mainstream. With the rapidly increasing computational capacity and wide sources of data in various online environments, social network analysis is now a promising approach in Big Data analysis. How can a neophyte enter this vast field? These books provide a means to approach this challenge from a theoretical and methodological point of view while focusing on the relationship between social network analysis and economic sociology.



ANALYZING SOCIAL NETWORKS

Stephen P. Borgatti, Martin G. Everett, and Jeffrey C. Johnson. Los Angeles, CA: SAGE, 2013. 296 p.

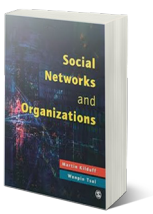
Borgatti and Everett published several articles in the *Social Networks* journal. Johnson is a well-known authority on the use of ethnographic methods for social network data collection. This book integrates qualitative and quantitative methods in SNA, with concepts explained in an accessible way. It covers topics from data collection to the most common analyses. All explanations are based on Ucinet software.



UNDERSTANDING SOCIAL NETWORKS: Theories, concepts, and findings.

Charles Kadushin. New York, NY: Oxford University Press, 2012. 252 p.

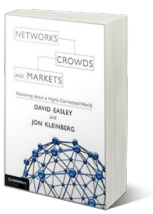
Kadushin is one of the pioneers in using social network analysis to understand the dynamics of American elites. This book offers a unique discussion of SNA concepts from a sociological perspective. Especially recommended for readers who need to be "convinced" that the approach has a high potential for theoretical dialogue. The book contains minimal use of formal mathematics, which makes the concepts accessible to the general public.



SOCIAL NETWORKS AND ORGANIZATIONS.

Martin Kilduff and Wenpin Tsai. Thousand Oaks, CA: SAGE, 2003. 172 p.

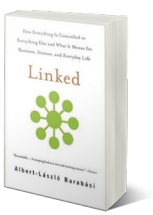
Kilduff and Tsai offer important insights into the adoption of social network analysis in the context of organizational behavior. Like Kadushin's text, this work deepens the discussion of whether SNA could be considered a theory. One of the book's most important features is a discussion of the cognitive dimension in the formation and evolution of networks.



NETWORKS, CROWDS AND MARKETS: Reasoning about a highly connected world.

David Easley and Jon Kleinberg. Cambridge, UK: Cambridge University Press, 2010. 819 p.

Kleinberg and Easley are professors in computer science and information science at Cornell University. Compared with the books presented above, it brings a more concise theoretical explanation of concepts. This book is suitable for researchers familiar with quantitative methods, which require some degree of formalization (in mathematics or graphs), and those who appreciate the intersection between economic reasoning and social network analysis.



LINKED: How everything is connected to everything else and what it means for business, science, and everyday life.

Albert-László Barabási. New York, NY: Plume, 2003. 298 p.

Barabási borrows concepts from the emerging "network science," strongly influenced by physics. The driving question of the book is this: "How do networks form?" He emphatically shows that actual networks are different from the utopian vision of flat and egalitarian forms. Using clear language, he makes accessible to the general public widely cited but often misunderstood terms as "small world," "hubs and connectors," and "six degrees of separation."

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Translated version

Qualitative research: Case study

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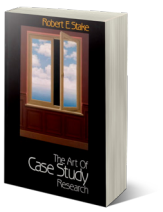
There is an intense debate between fans of quantitative and qualitative research in the social sciences, and even more so in Business Management. Among qualitative methods, the case study has the most fans and critics. Some regard it as a methodology, others as a technique to be employed with different theoretical lenses: positivist, constructivist, interpretationism, or from the perspective of critical theory. In case studies, the researcher explores a single defined system (a case) or several ones (multiple cases) over time, by collecting comprehensive data. Multiple sources of information may be employed (comments, interviews, reports, audiovisual material, etc.). FGV EAESP Graduate Program Professor **Maria Tereza Leme Fleury** and students **Larissa Marchiori Pacheco**, **Karina Ribeiro Fernandes**, and **Pablo Leão** present the main references on this method.



BUILDING THEORIES FROM CASE STUDY RESEARCH

Kathleen M. Eisenhardt. Academy of management review, v. 14, n. 4, p. 532-550, 1989.

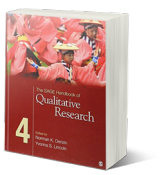
This is a seminal text, which may bridge the gap between using the case method and theory formulation. In this article, Eisenhardt suggests that the process begins with the question of research, followed by the selection of cases, choice of instruments and protocols of research, choices in field, data analysis, formulation of hypotheses, and literary corroboration. She explains how to conclude a study, its strengths and weaknesses, and literature development.



THE ART OF CASE STUDY RESEARCH.

Robert E. Stake. London: Sage, p. 1995.192

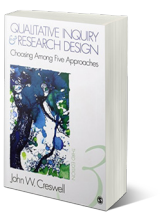
Stake emphasizes that a case study should be seen as a research strategy; it is a process and product of research, focusing on experiential knowledge and contextual relationships. Research may be based on exclusive cases, as the triangulation of data occurs throughout the process to avoid interpretation errors. He suggests a dense case description, enabling readers to make their own interpretations and generalizations.



THE SAGE HANDBOOK OF QUALITATIVE RESEARCH

Norman K. Denzin and Yvonna S. Lincoln (Ed.). Los Angeles: Sage, 2011. p. 784

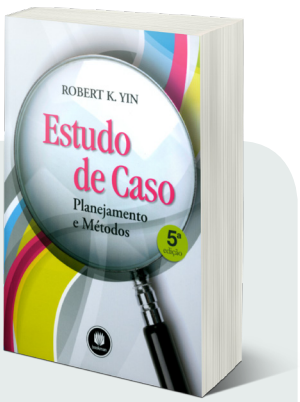
The authors discuss and respond to five common misconceptions about the method as follows: (1) theoretical knowledge is more valuable than practical knowledge; (2) a single-case study does not contribute to scientific development; (3) it is useful for generating hypotheses, whereas others are appropriate to test hypotheses and build theories, (4) verification bias, which confirms preconceived ideas; (5) as a base study, it hampers the development of propositions and theories.



QUALITATIVE INQUIRY AND RESEARCH DESIGN: Choosing among five approaches

John W. Creswell and Cheryl N. Poth. London: Sage publications, p. 449. 2017

The authors explain the definition and background of research using case studies, types, and variation in analysis intentions. They present detailed procedures for implementation, discussing important management aspects while they are being performed. Furthermore, they mention the researchers' motivation for choice of research. This discussion is relevant because it makes researchers aware of the need to establish limits that properly define the cases, as some of these studies may lack a well-defined beginning and end.



CASE STUDY: Planning and Methods

Robert K. Yin. Porto Alegre: Bookman, 2015. 290 p.

Robert Yin has been the main reference in this methodology. Using a comprehensive approach, he defines the method, elaborating upon the decision of when to use it, and suggests ways to execute a project. Moreover, he highlights important points for data collection and its principles. Finally, he discusses the choices in analyzing data and preparing a final report.

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EDITORIAL INFORMATION 2017

STATUS OF ARTICLES		**2016**	**%**	**20171**	**%**
AUTHORS	**Submitted**	**943**	**100%**	**895**	**100%**
EDITORIAL OFFICE (format review)	Inapproppriate[2]	376	40%	285	32%
	Withdrawn before the blind review process	63	7%	74	8%
	Sent for desk review	**504**	**53%**	**536**	**60%**
EDITOR-IN-CHIEF (desk review)	Rejected	237	25%	231	26%
	Rejected and resubmission	30	3%	28	3%
	Awaiting desk review	3	0%	10	1%
	Sent to the Scientific Editorial Board	**234**	**25%**	**267**	**30%**
Scientific Editorial Board (preliminary review)	Rejected	67	7%	102	11%
	Rejected and resubmission	11	1%	9	1%
	In preliminary review stage	16	2%	27	3%
	Sent to Evaluators	**140**	**15%**	**129**	**14%**
REVIEWERS	Rejected	45	5%	60	7%
	Rejected and resubmission	21	2%	7	1%
	In double blind review	48	5%	30	3%
	Sent to authors for improvement	**26**	**3%**	**32**	**4%**
AUTHORS	In Improvement stage	6	1%	9	1%
	Withdrawn after the blind review process	1	0%	0	0%
Scientific Editorial Board (reevaluation)	Reevaluation after authors' improvements	9	1%	**2**	**0%**
AUTHORS	Approved	**10**	**1%**	**15**	**2%**
	Rejected after Reevaluation	0	0%	**6**	**0%**
Editorial Office	**Published**	0	0%	**0**	**0%**

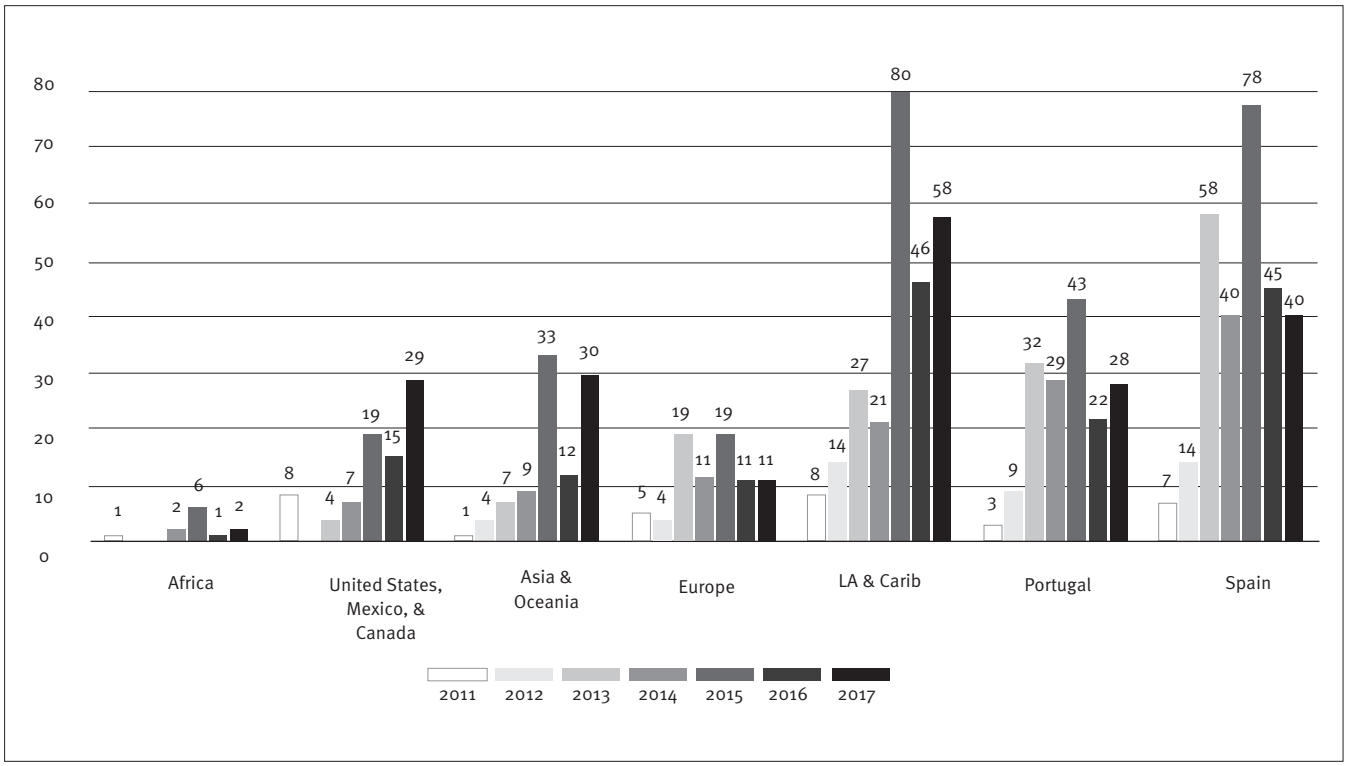
[1]Status as on 01/17/2018.

[2]In the initial screening, the Editorial Office evaluates the formatting of articles and checks them for plagiarism using the iThenticate® software according to the norms established in the RAE Manual.

Note: The percentage data mentioned in this table refer to the total number of submitted articles.

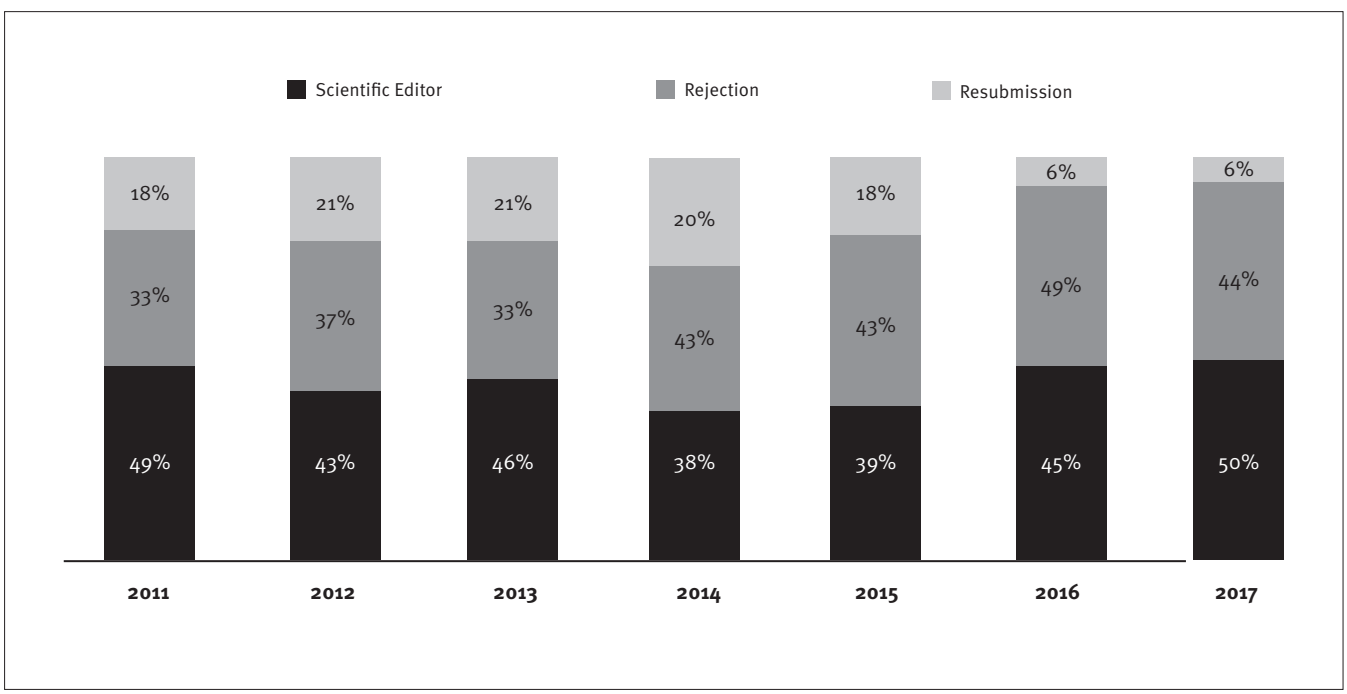
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SUBMISSIONS FROM INTERNATIONAL AUTHORS



Note: Articles submitted for desk review, following screening for formatting and similarities.

EVOLUTION OF THE DESK REVIEW (ANNUAL)



Note: The percentage values shown in this figure refer to the total number of articles sent for desk review to the Editor-in-Chief.

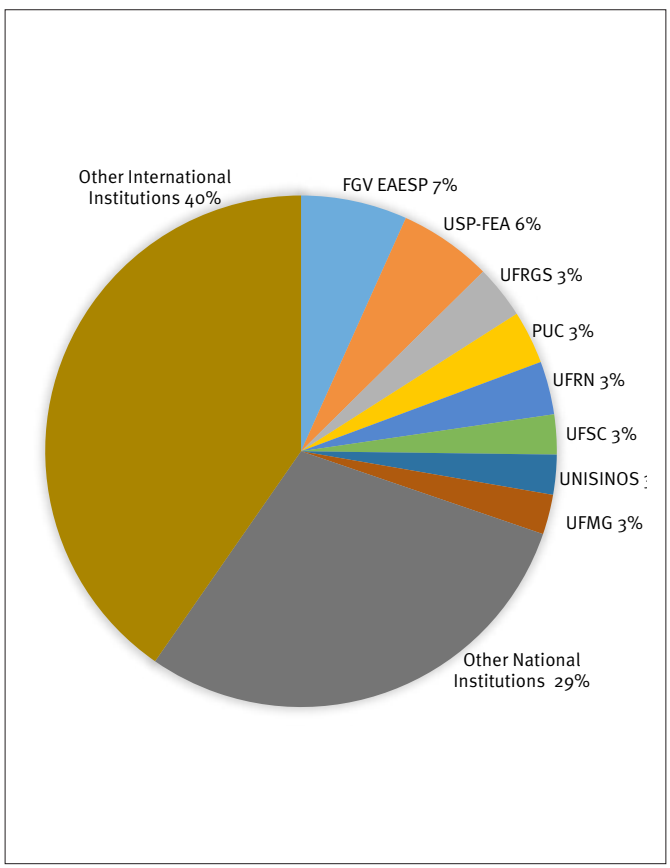
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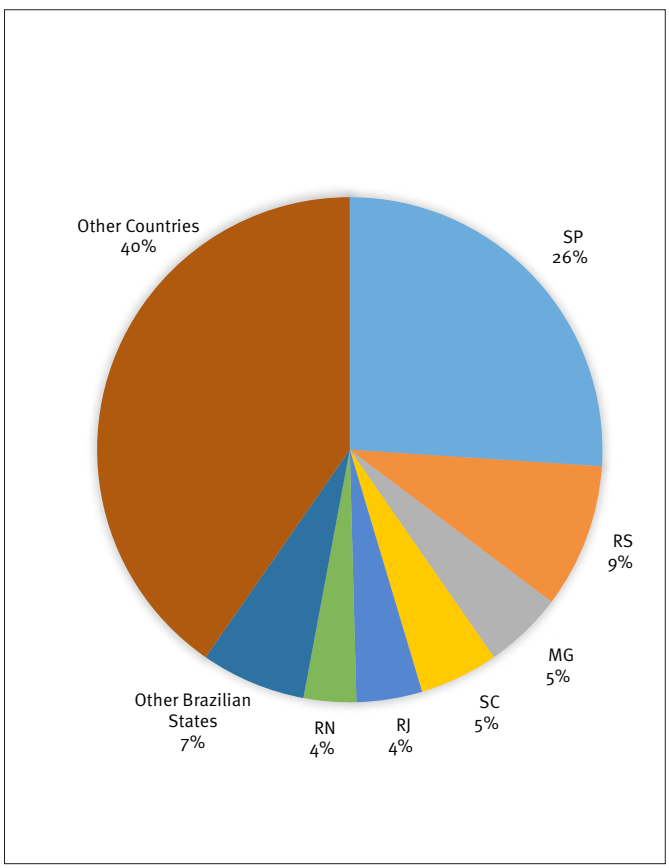
PUBLISHED ARTICLES

	2016	2017
Total number of published articles	45	42
Submitted for double-blind review	41	32
Invited	4	11
Geographical collaboration of authors		
Brazilian authors only	16	23
International authors only	21	14
International collaborations only	8	5

Institutional diversity (%)



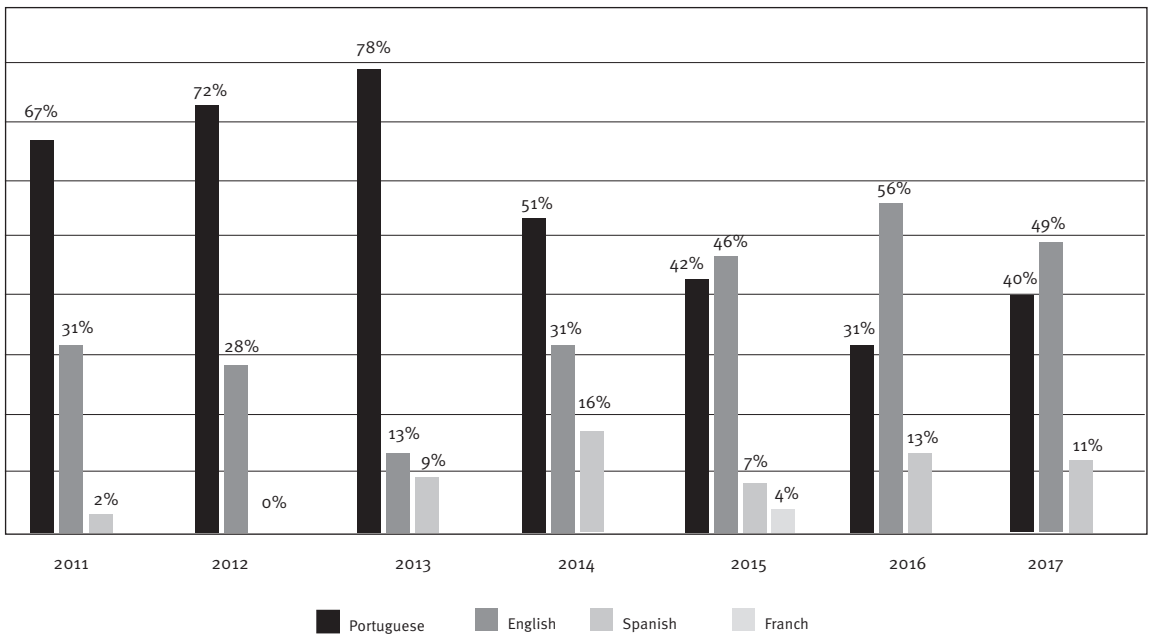
Geographical diversity (%)



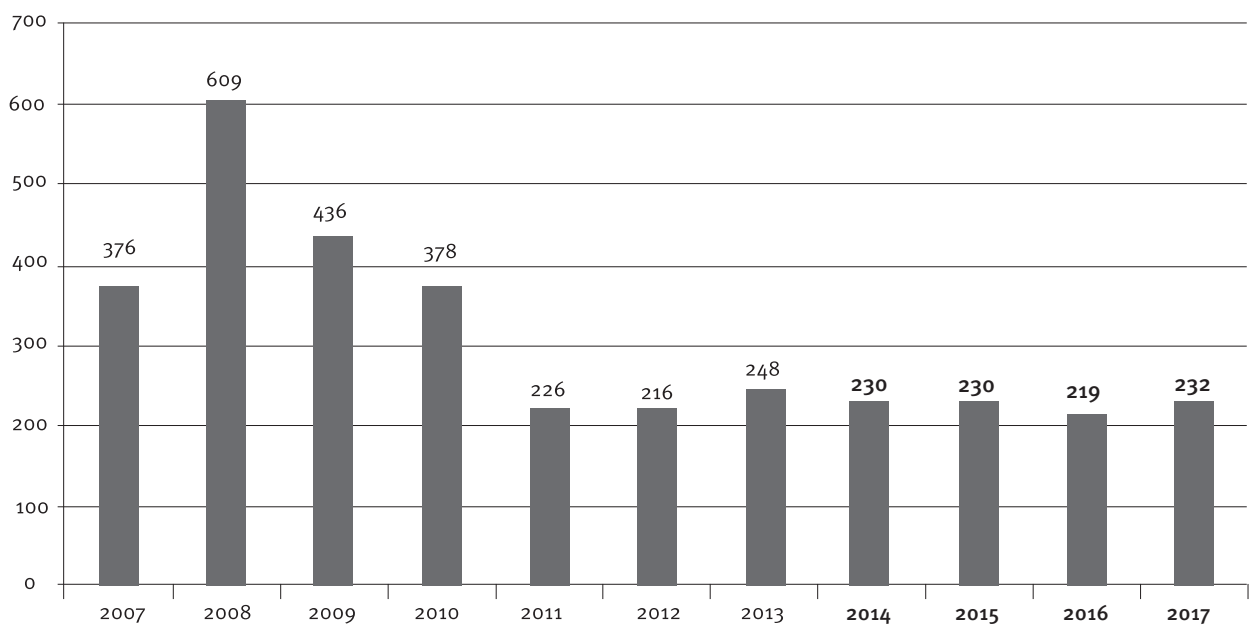
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PUBLICATION LANGUAGES



ANNUAL AVERAGE NUMBER FROM THE PROCESS OF EVALUATION UNTIL APPROVAL (IN DAYS)



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RAE thanks the researchers who contributed their experience and wisdom to the service of improving the submitted articles—a voluntary job that is fundamental to the improvement of our texts. Over the past year, we have witnessed the building of numerous partnerships between members of the Scientific Editorial Board, guest scientific editors, authors, and reviewers, enriched by open and frank dialogue on both sides. We highlight the participation of editors from the forum "The business of eating: Entrepreneurship and cultural politics" and thank Professors Jeffrey Pilcher, Krishnendu Ray, Eliane Brito, and Marina Heck for conducting the editorial processes for the year 2017.

In the previous period—from January to December 2016—we depended on the help of 303 contributors. In the current period—from January to December 2017—the number of contributors was 357, whose names are listed in page 107.

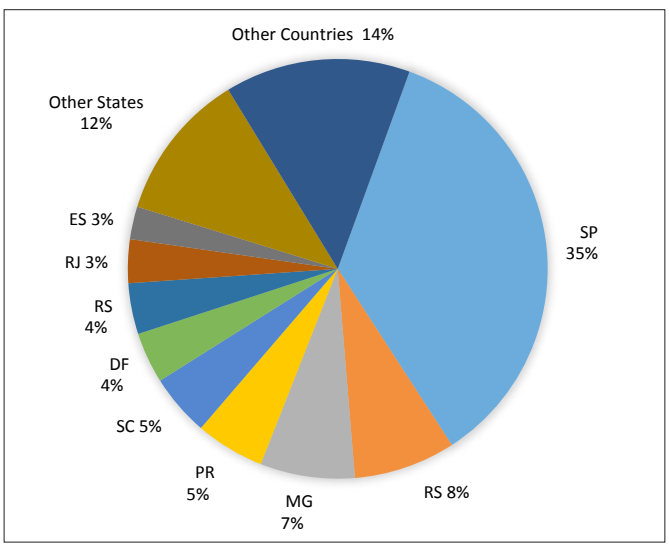
We take this opportunity to honor the members of the Scientific Editorial Board and Reviewers, who were selected as the best editors and reviewers, respectively, of the year. Their contribution was crucial to maintaining the quality of *RAE* articles. The choice was based on three criteria: the number of evaluations performed, compliance with deadlines for responding to authors, and quality of the evaluation performed.

On average, each scientific editor participated in the preliminary review and follow-up process for 3.5 articles and took 9.39 days to provide their feedback. On average, each reviewers who collaborated on our blind review process in 2016 performed 2.4 reviews and required 18.08 days to complete their feedback. We acknowledge the services provided by the following contributors:

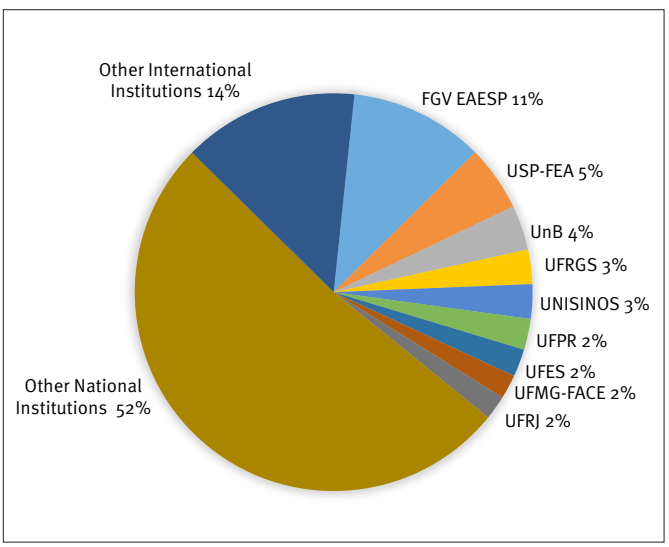
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Institutional diversity of the Scientific Editorial Board and Reviewers



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