

WHAT IS THE PROFILE OF RESEARCHERS WHO SUCCESSFULLY PUBLISH BEYOND THEIR NATIONAL BORDERS? THE CASE STUDY OF BRAZILIAN RESEARCHERS WHO PUBLISH IN HIGH-IMPACT INTERNATIONAL JOURNALS.

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Abstract

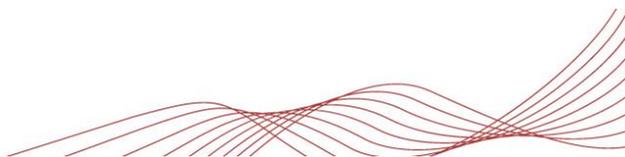
Publishing in a high impact international journal is like a dream come true shared among many faculty, students, and graduate programs directors from different nationalities. This article aims at identifying the characteristics of authors who have published in high impact international journals. Specifically, the scope of this study was authors affiliated to prestigious graduate programs in Business Management, Accounting, and Tourism in Brazil. The research was conducted based on the Ministry of Education Evaluation Reports, authors' curricula, descriptive statistics and statistical tests. The tests indicated that there is no significant difference between the average number of articles published per author with educational background in Brazil and abroad, at the undergraduate, graduate and postdoctoral levels. We found that only the average number of publications by authors with full PhDs abroad is significantly higher than the average number of publications by authors who have a full doctorate in Brazil. The average number of publications of doctors who did part of their PhD training abroad was a grey area in our results, that neither differed from the average number of publications of those who earned a doctor degree exclusively in Brazil or entirely abroad.

Keywords: Academic formation; international journals; Brazilian researchers; publish or perish.

Área Temática do evento: Educação e Pesquisa em Contabilidade.

1 INTRODUCTION

Since the amount and quality of scientific communication have become a metric of a scholar's research capacity, academic productivity became the target of intense criticism



considering its scientific and social consequences. From the 1930s, several scientists have begun to oppose to academic practices that have led to the famous phrase regarding the main goal of academicians: "Publish *or* Perish". Movements such as *slow science* arose as a response to a portion of the scientific community unhappy and concerned with the "McDonaldization" of knowledge production. But instead of turning a point, academics have reached a new motto: "Be cited or vanish".

In Brazil, the Coordination for the Improvement of Higher Education Personnel (CAPES), a development agency for Brazilian research, also plays the role of evaluating the Graduate Education System in the country, assessing the quality of the programs in a tri-annual basis. The assessment is based in many criteria but relies heavily in some publishing metrics to be attained by graduate programs' faculty and students. It grades all graduate programs from 2 to 7, with grades 6 and 7 indicating programs with international level quality.

One of the CAPE's goals is that graduate programs should present world-class performance. The "internationalization", as it is called, should be carried out through the exchange of students, mainly offering scholarships to support periods of study abroad (locally called "sandwich" scholarships) and by hosting international students in Brazilian programs; through financial support to host Brazilian faculty members in international programs and inviting international scholars as visiting professors in Brazilian programs; for teaching and research activities; and, finally by means of the publication of Brazilian researches' outcomes in international journals.

This paper aims to analyze who are the authors of programs in the Business Administration, Accounting and Tourism knowledge area that have managed to better fulfill this role when considering the achievement of publications in international journals. Our research question is therefore: What are the characteristics of faculty members from Brazilian Business Administration, Accounting and Tourism area's graduate programs who have achieved better performance in publishing in international journals?

It is very important for an area to identify the most successful faculty members in attaining this outcome since those programs should have their research and publishing strategies studied and possibly serve as a benchmark for other programs to enable improvements in their internationalization processes as well.

2 LITERATURE REVIEW

Academic researchers' formation is one of the factors that can contribute to a highest degree with their performance while researchers. According Meadows (1999, p. 93), "[...] It is often that an eminent researcher of today was taught by eminent researchers from the previous generation." This factor appears here represented by researchers' working conditions and these can trigger a virtuous cycle of scientific production. Meadows (1999, p. 89) states that a rich university can offer good research conditions for its academic staff. This attracts high quality researchers, which enhance the prestige of the university, so that it also attracts top students. As a result of these developments, there is an increase of revenue in this university and so the process continues.

The graduate education system in Brazil is quite recently implemented. Only in 1965 it began to be regulated in a more objective way. It was this year that the Federal Board of Education issued the Opinion 977, advised by Newton Sucupira, approved by the Education Minister on January 6th, 1966 and published on January 20th, 1966. For Cury (2005) "it can be said that from a doctrinal point of view, in official matters, this Opinion remains the major, if not the only, systematic reference in terms of graduate education in our country."

The Administration, Accounting and Tourism knowledge area is even younger. At the



end of the 2010-2012 period, CAPES lists the existence of 78 academic graduate programs in this specific area. Table 1 summarizes the implementation of graduate program by decade in this knowledge area, considering master's programs in Administration, Accounting and Tourism, respectively.

Table 1 - *Implementation of Master's programs in Administration, Accounting and Tourism, by decade, in absolute numbers and percentage*

Decade	Administration		Accounting		Tourism		Total	
1961-1970	1	1,79%	1	6,25%	0	0,00%	2	2,63%
1971-1980	12	21,43%	1	6,25%	0	0,00%	13	17,11%
1981-1990	2	3,57%	0	0,00%	0	0,00%	2	2,63%
1991-2000	10	17,86%	3	18,75%	2	50,00%	15	19,74%
2001-2010	28	50,00%	11	68,75%	2	50,00%	41	53,95%
2011-2012	3	5,36%	0	0,00%	0	0,00%	3	3,95%
Total	56	100,00%	16	100,00%	4	100,00%	76	100,00%

Source: Capes (2014)

The oldest operating master's program in the area created in Brazil, rated by CAPES is the Master's in Business Administration program from Getulio Vargas Foundation, in Rio de Janeiro (FGV/RJ). The second oldest master's program in the area, is a Master's in Accounting and Controllershship program created in 1970, in the University of São Paulo, in São Paulo (USP/SP). The oldest Master's program in Tourism was created in 1997 by the Vale do Itajaí University (UNIVALI).

Table 2 - *Implementation of PhD's programs in Administration, Accounting and Tourism, by decade in absolute numbers and percentages*

Decade	Administration		Accounting		Total	
1961-1970	0	0,00%	0	0,00%	0	0,00%
1971-1980	3	9,38%	1	25,00%	4	11,11%
1981-1990	0	0,00%	0	0,00%	0	0,00%
1991-2000	7	21,88%	0	0,00%	7	19,44%
2001-2010	17	53,13%	3	75,00%	20	55,56%
2011-2012	5	15,63%	0	0,00%	5	13,89%
Total	32	100,00%	4	100,00%	36	100,00%

Source: CAPES Triennial evaluation data (2013)

The oldest PhD program was established in 1975 in Business Administration at the University of São Paulo, in São Paulo (USP/SP). In the following year, FGV/SP and Federal University of Rio de Janeiro, in Rio de Janeiro (UFRJ) implemented their programs. The next program would only be created at the Federal University of Bahia, Salvador (UFBA) in 1993. The oldest PhD in Accounting was created at USP/SP in 1978. The second doctorate in Accounting would only be created in 2007 by a consortiums formed by Brasília University, Federal University of Paraíba and Federal University of Rio Grande do Norte (UNB/UFPB/UFRN). The first PhD in Tourism was only implemented by UNIVALI in 2013.

These programs are evaluated by CAPES and receive grade numbers ranging from 1 to 7. Programs with grades 1 and 2 are not recommended by CAPES. Programs that offer only Master's degrees can obtain a maximum grade of 5 and programs that offer doctoral degrees may receive grades 6 and 7.

According to CAPES (2014b):

Grades 6 and 7 are reserved exclusively for programs with a doctorate who had grade 5 and concept "Very Good" in all items (Proposal of the Program; Thesis and Dissertations; Intellectual Production and Social Inclusion) of the evaluation form and meet necessarily to three conditions:

Grade 6: Concepts predominantly "Very Good" in items of all items of the



evaluation form, even with possible concept "Good" on some items; performance level (training of doctors and intellectual production) differentiated in relation to other programs; and performance equivalent to that of international centers of excellence in the area (Globalization and Leadership) form;

Grade 7: concept "Very Good" in all items of all items of the evaluation performance level (training of doctors and intellectual production) highly differentiated compared to other area programs; and equivalent performance to the international centers of excellence in the area (Globalization and Leadership).

The items assessed for grading in the evaluation system have different weights: Proposal of the program, a relevant qualitative item, has no weight; Faculty, weighing 20%; Student, Theses and Dissertations, weighing 35%; Intellectual production, weighing 35% and Social Inclusion with a weight of 10%.

The evaluation system uses a academic journal classification system called Qualis. This classification is quite simple: there are eight strata called A1, A2, B1, B2, B3, B4, B5 and C, in which journals are allocated according to their characteristics, being the stratum A1 the highest and C, the lowest. The criteria for a journal to belong to an A1 or an A2 strata in the three years are

A1: H index in Scopus Base (H-Scopus) > 20 or impact factor in the Journal of Citation Reports (JCR) > 1.0, which one is more favorable to the journal.

A2: $4 < H\text{-Scopus} \leq 20$ or $0.2 < JCR \leq 1.0$, whichever is more favorable to the journal. (CAPES, 2013).

where:

The H index expresses the number of papers (H) of a journal that received H or more citations in papers of a base of journals and in the case here chosen the Scopus database. The index attempts to quantify the impact of the scientific journal papers.

The impact factor of a journal published by JCR is based on a ratio of two numbers. The numerator is the number of citations in the current year to any papers published in a journal in the last n years and the denominator is the number of papers published in the same year n. The impact factor published by the JCR considers the ISI Web of Science databases of Thomson Reuters Scientific to make the calculations.

The graduate programs' evaluation system and the Qualis system are essential for this research since they guided the sample choice which as will be explained in the next section.

3 METHODS

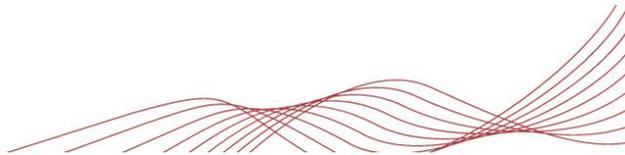
The sample is composed by the five graduate programs that received grades 6 or 7 in the Capes 2010-2012 period triennial evaluation. Their production were collected and analyzed.

These five programs were: with a grade of 7, USP Business Administration and FGV/SP; with grade 6, FGV/RJ, UFMG and USP Accounting and Controllershship. Data were collected on the CAPES Triennial 2013 website following the path Resources> Results> indicators Sheets (CAPES, 2014c) and CAPES> Recommended Courses> By Evaluation Area> Administration, Accounting and Tourism (CAPES, 2014d) on August 17th, 2014.

Firstly, we collected data about the publications of such programs in journals ranked in the Qualis' strata A1 and A2. Table 3 summarizes the number of articles published by program and by CAPES stratum.

Table 3 - *Number and percentage of publications in journals of A1 and A2 by strata and by program*

Program	A1	A1 %	A2	A2 %	Total
USP Adm.	10	9.80%	92	90.20	102
FGV/SP Adm.	24	20.00%	96	80.00%	120



UFMG	8	12.12%	58	87.88%	66
FGV/RJ	36	32.43%	75	67.57%	111
USP Accounting	5	7.81%	59	92.19%	64
Total	83		380		463

Source: Capes (2014c)

Excluding all the papers published in Brazilian journals in the Qualis' strata A1 and A2, our sample was reduced to 148 publications. Table 4 shows the remaining sample when considering only publications in international journals.

Table 4 - Publications in the Qualis' strata A1 and A2 in international journals, absolute numbers and percentages

Program	A1	%	A2	%	Sum
USP Adm.	9	25.71%	26	74.29%	35
FGV/SP Adm. Business	21	65.63%	11	34.37%	32
UFMG	7	46.67%	8	53.33%	15
FGV/RJ	35	62.50%	21	37,50%	56
USP Accounting	5	50.00%	5	50.00%	10
Total	77		71		148

Source: Capes (2014d)

Of these, 6 articles were excluded because the registered ISSN was not in accordance with the journal title in the Qualis/CAPES: one from USP Adm., one from USP Accounting, one from UFMG and three from FGV/RJ. After this, our sample dropped to 142 articles in both strata.

Of these 142 listed individually, we found that four of those were reported in more than one institution. Coauthorship were detected in articles from: FGV/RJ and FGV/SP Adm., USP Adm. and USP Accounting, FGV/RJ and UFMG (all 3 in A1 journals) and FGV/SP and USP Adm. (in an A2 journal).

After excluding the duplicates, the five programs together published 138 articles in A1 and A2 international journals, and that comprised the final sample analyzed in this study. To produce those 138 articles, 452 authors were required. Tables 5 and 6 below shows some statistics about the number of authors by article.

Table 5 - Descriptive statistics on the number of authors per article

Statistics	
Average	3,275
Median	3
Mode	2
Standard deviation	4,320
kurtosis	110,536
Asymmetry	10,014
Range	50
Minimum	1
Maximum	51

Table 6 - Number of authors per article, in absolute numbers and relative frequency

Number of authors	Number of paper	%
1	13	9,42%
2	45	32,61%
3	43	31,16%
4	23	16,67%
5	8	5,80%
6	3	2,17%
9	1	0,72%
10	1	0,72%
51	1	0,72%
Total	138	100,00%

The articles had, on average, 3.27 authors, with a median of 3 and mode of 2. Mode is an interesting information because although the average number of authors per article in Brazil has grown in recent years, this average was calculated including outliers (articles with 9 or 10 authors can be considered possible outliers and 51 authors can safely be considered as



more definitive outliers). With the exclusion of outliers, the average dropped to 2.82 and the standard deviation dropped to 1.14.

Table 7 summarizes data from the journals that more published articles authored by Brazilian scholars. It shows the number of articles published by journals in the 2010-2012 period.

Table 7 - *Journals that published more articles authored by Brazilians*

Number of Articles	Journal Title
9	Journal of Technology Management & Innovation
6	Critical Perspectives on International Business and Journal of Banking & Finance
5	The Canadian Journal of Administrative Sciences
4	Journal on Chain and Network Science
3	Journal of Knowledge Management; Organization and Technological Forecasting & Social Change
2	Electronic Commerce Research and Applications; International Journal of Innovation Management; International Journal of Production Economics; Journal of Business Ethics; Journal of Business Research; Journal of Corporate Finance; Journal of International Management; Management and Organization Review; Management Research Review; New Ideas in Psychology and Thunderbird International Business Review
1	Other 76 journals

The journal that published the greatest number of articles - the Journal of Technology Management & Innovation - is maintained by the *Facultad de Economía y Negocios the Universidad Alberto Hurtado*, Chile and classified as A2. Its editorial board has 15 academics from eight different countries, including two Brazilians affiliated to USP and UFRJ. Nine Brazilian papers were published in this journal by faculty from four programs: FGV/SP (4), FGV/RJ (1), UFMG (1) and USP Adm. (3).

The two journals that published 6 articles each one were Critical Perspectives on International Business and the Journal of Banking & Finance. Critical Perspectives on International Business has mainly UK scholars on its editorial board and has six associate editors including a Brazilian, faculty member at FGV/SP. The editorial board has 42 researchers from nine countries. Of the six articles published, four were from FGV/RJ and two from FGV/SP, one of which is authored by the associate editor. This is an A2 journal.

The Journal of Banking & Finance has two editors, six advisory board members and 90 associate editors from 20 countries. Two editors are associated with a Brazilian Central Bank and other with FGV/RJ. From the six articles published in this journal five were from FGV/RJ and one from USP Adm.. This is an A1 journal.

The Canadian Journal of Administrative Sciences has one editor, six associate editors and editorial committee formed by 86 scholars, with no Brazilian in the editorial board. Five articles were published in this journal: three from FGV/RJ, one from UFMG and one from FGV/SP. This journal is classified as an A1.

The Journal on Chain and Network Science is published by Wageningen Academic Publishers in partnership with the Department of Management Studies of Wageningen University, Netherlands. The magazine has one editor, an editorial board with three scholars and an international advisory board with 39 researchers from 17 countries, including two Brazilians, both USP Adm.. This journal, classified as an A2, published 4 articles, all of them coming from USP Adm., and authored by two editorial board members.

The Journal of Knowledge Management has one editor, a co-editor and an editorial board formed by 30 scholars from 17 countries, but none from Brazil. There were three articles published in this journal: one from FGV/SP, one from FGV/RJ and one USP Adm.. It



has two editors, an advisory editorial board composed by six scholars, and an editorial board with 83 researchers from 18 countries, including an affiliate from FGV/SP. In this journal, three articles were published: two from FGV/SP and one from an UFMG & FGV/RJ partnership. The Technological Forecasting & Social Change has an editor, four associate editors and an editorial board with 61 scholars from 18 different countries, including two Brazilians, from INPE and Unicamp. Of the three articles published in this journal, two were from FGV/RJ and one from UFMG. These three journals are classified as A1.

The profile of the eleven journals that have published two articles is similar. They have one or two main editors and editorial boards with scholars from various countries. Of the 11 journals listed in Table 7 above only two have Brazilians scholars in the editorial board: the Journal of International Management has one from PUC/RJ and Thunderbird International Business Review have FIA and USP Adm. researchers.

The 138 articles were accessed and data about the authors were collected. We were unable to verify the affiliation of four articles authors as they did not contain this information. Articles with authors indicating exclusively Brazilian affiliations were 82 (61.2%); with Brazilian and international affiliation were 45 (33.6%); and exclusively with international affiliation were 7 (5.2%). In the case of 7 articles, the authors indicated only their international affiliations even though they were scholars participating in Brazilian graduate programs.

4 RESULTS

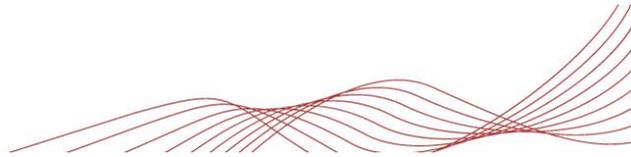
Here we present some of characteristics of the authors who have published articles in international journals. The 452 authorship necessary for the production of 138 published articles needed a correction: the articles with 9, 10 and 51 authors were excluded of our sample. Therefore, the number of authors decreased to 382 authors and 135 published articles. We then identified authors with more than one article published, and the results are presented in the Table 8.

Table 8 - *Publications by author in relative numbers and percentages, and Lotka's distribution*

Articles published	Number of authors	Percentual	Lotka
1	202	75,09%	60,80%
2	45	16,73%	15,20%
3	6	2,23%	6,80%
4	9	3,35%	3,80%
5	6	2,23%	2,40%
6	1	0,37%	1,70%
7 or more	-	-	9,30%
Total	269	100.00%	100.00%

We found that one author collaborated in six articles, six were co-authors of five articles, and 202 authors produced just one published article. The synthesis of the Table 8 shows that the 135 articles published had up to six authors, and that they were produced by 269 authors.

The curricula of those 269 authors were then searched in the Lattes Platform, and 202 were found (75%). Of those, we did not find the curriculum of 67 authors, whom 11 were faculty members in Brazil and 56 were faculty members in international educational institutions spread across 16 countries: United States - 23 (41.1%), Netherlands - 7 (12.5%), United Kingdom - 6 (10.7%), Germany - 4 (7.1%), Denmark - 3 (5.4%), Spain - 2 (3.6%),



Portugal - 2 (3.6%) and South Africa, Argentina, Belgium, Slovenia, France, India, Mexico, Pakistan, Uruguay - 1 each (total of 16.1%)

From the 202 sampled authors, we found complete information of only 197 because five curricula did not include information about the author's undergraduate education. The remaining 197 authors were graduated in 211 different undergraduate programs, given that 14 of them graduated in two programs. Table 9 shows the information about the author's undergraduate degree.

Table 9 - *Author's undergraduation, in absolute numbers*

Bachelor's degree in	n	Bachelor's degree in	n
Administration	63	Computer Engineering	4
Economy	19	Medicine	4
Accounting	14	Dentistry	4
Production Engineering	8	Psychology	4
Civil Engineering	7	Communication Social	3
Law	6	Chemical Engineering	3
Social Sciences	5	History	3
Electronic Engineering	5	Architecture and Urbanism	2
Mechanical Engineering	5	Electrical Engineering	2
Mathematics	5	Statistics	2
Computer Science	4	Journalism	2
Aeronautical Engineering	4	Tourism	2
Engineering Agronomic	4	Other 27	1

Analyzing the table 9, we concluded that 32% of the authors earned an undergraduate degree in Business Administration, 9.6% in Economics, 7.1% in Accounting and 25.9% in Engineering. While currently participating in graduate programs in the areas of Business Administration, Accounting and Tourism, 38.5% of the authors graduated in courses from these same areas.

We also analysed how long ago the authors completed their first undergraduate degree. Figure 1 and Table 10 summarise the results of this analysis.

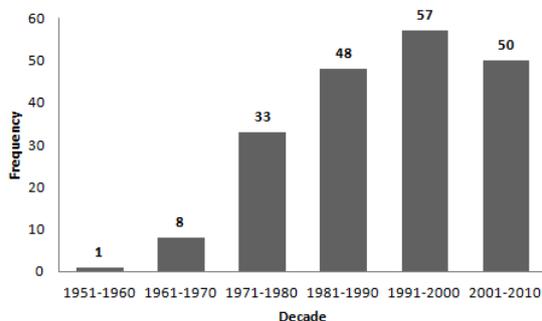


Figure 1. Distribution of the authors first baccalaureate degree year, per decade.

Table 10 - *Descriptive Statistics of the authors first baccalaureate degree year*

Statistics	
Average	21.13
Standard error	0.81
Median	19
Mode	26
Standard deviation	11.33
Variance sample	128.30
kurtosis	-0.69
Asymmetry	0.46
Range	50
Minimum	2
Maximum	52

Most of the authors (78.6%) completed their degrees between 1980 and 2010. On average, the authors graduated 21 years before this paper, with the mode being 25 years and the median of 19 years. The newest graduated authors did it 2 years ago and the oldest



graduate authors did it 50 years ago in relation to the three-year period we were analysing. As 75% of the authors in the sample published a single article, we conducted the same time analysis only considering authors who have made more than one contribution.

For the 58 authors who have made more than one contribution, we analysed the Lattes Platform curricula, and collected information about their graduation. It was found that there is a certain similarity in the distribution when considered sample with the 197 authors. Figure 2 and Table 11 summarises the results of our analysis.

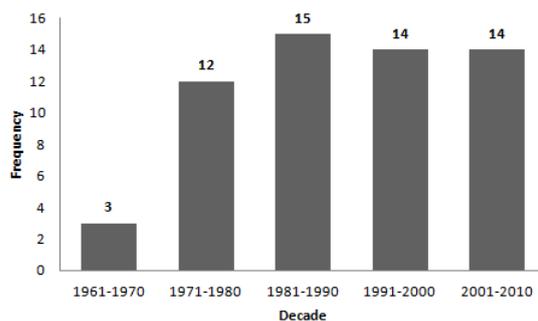


Figure 2. Distribution of the authors first baccalaureate degree year per decade, excluding authors with only one contribution

Table 11 - Descriptive Statistics of the time elapsed since the author's first baccalaureate, excluding authors with only one contribution

Statistics	
Average	22.66
standard error	1.53
Median	22.5
Fashion	26
Standard deviation	11.63
Variance sample	135.35
kurtosis	-0.77
Asymmetry	0,34
Range	44
Minimum	5
Maximum	49

The correlation between the time after graduation and the number of articles in which one is coauthor is 0.11 when considering all the authors, and 0.12 when considering only those who published more than one article. Most of the authors graduated from Brazilian institutions (97.4%), and others graduated from institutions from Albania, Canada, United States, Peru and Portugal. The authors who graduated in Brazil had a mean of 1.46 published articles whereas the authors that graduated in other countries had an average of 2.4 articles.

The KS test has sig. 0.200 for the normality of the distribution of those who graduated abroad and the SW has sig. 0.314 indicating that the distribution is normal. The KS test has sig 0.000 for the normality of the distribution of those who graduated in Brazil and the SW has sig. 0.000 indicating that the distribution is not normal. The MW test has sig. 0.075 indicating that the average of articles published by this two groups is statistically similar.

Of the 197 authors, 192 are Master's or PhD holders. There are five authors with only a baccalaureate in the sample (e. g. they do not have master's or doctoral degrees and are already authors of articles published in international journals). Of these five authors, three graduated in Medicine, one in Economics and Marketing. One of the three graduated in Medicine, completed also three specializations.

Out of 202 authors, 184 were Master's degree holders and together participated in 189 programs. Areas in which they performed the Master's are shown in Table 12.

Table 12 - Authors' Master's degree, in absolute numbers

Master	n	Master	n
Business Administration	113	Agribusiness	2
Accounting	12	Systems Analysis and Applications	2
Production Engineering	11	Applied Computing and Automation	2
Economy	11	Civil Engineering	2
Political Science	4	Philosophy	2



Statistics	4	Latin America Studies	2
Dentistry	4	International Relations	2
Sociology	4	Other 12	1

We observed that the concentration of the author's Master's degrees in the Business Administration and Accounting area higher than in the undergraduate level: 61.4% had their Master's in Business Administration, 6.5% in Accounting and 5% in Economics and Production Engineering, respectively.

As shown in Figure 3 and Table 13, the authors completed their Master's degrees mainly in the 2000s (46.5%). Authors with Master's degrees completed on an average of 14 years prior to the data collection. The oldest Master's degree of the sample was completed in 1972. The author with the most recent master's degree graduated in 2012. One of the authors completed their Master's degree in 2013, which means that he was graduate student at the end of 2010-2012 period.

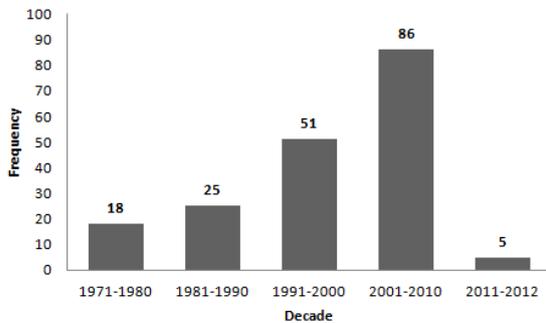


Figure 3. Distribution of the author's Master's year of per decade

elapsed since the author's master's degree year

Statistics	
Average	14.70
Standard Error	0.75
Median	12
Fashion	7
Standard deviation	10.21
Variance sample	104.18
kurtosis	-0.47
Asymmetry	0.72
Range	40
Minimum	0
Maximum	40

Table 13 - *Descriptive statistics of the time*

Among the group of authors who had a curriculum in the Lattes Platform, 57 had a Master's degree and were authors of more than one article. Figure 4 and Table 14 show the information about this specific group of authors.

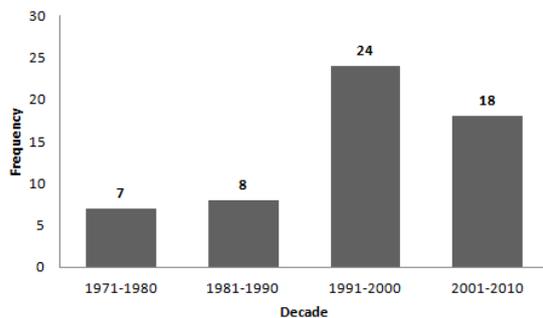


Figure 4. Distribution of the author's master's year per decade, excluding authors with only one contribution

Table 14 - Descriptive statistics of the time elapsed since the author's master's degree year, excluding authors with only one contribution

Statistics	
Average	17.28
standard error	1.33
Median	16
Fashion	19
Standard deviation	10.05
Variance sample	101.03
kurtosis	-0, 68
Asymmetry	0.52
Range	36
Minimum	2
Maximum	38

Considering the authors who have published more than one article, the average



completion time of the Master's degree was 17 years before the data collection, i. e. 3 years longer than the average of the whole group, which was 14 years, what can be explained due to the fact that this average takes into account the author holding the oldest Master's degree.

We also identified the countries in which the researchers have pursued their Master's degree. From the total, 171 Master's degrees were completed in Brazil, seven in the United States, two in Portugal, and one in Canada, Holland, Italy and the United Kingdom, respectively.

Regarding to the authors who have a second master's degree, they have earned it in government (2) in the UK, and Economics (1), Mathematics (1) and Sociology (1) in the United States.

A subset of 166 authors have a Master's degree from Brazil. The KS test for normality of this subset has sig. = 0.000 and the SW test has sig. = 0.000, indicating that it did not follow a normal distribution. Since the sample is > 30, we used the KS test.

A subset of 16 authors have at least a Master's degree abroad. The KS test for normality of this subset has sig. = 0.000 and the SW test has sig. = 0.000. Because this group has a sample size smaller than 30 units, the most appropriate test for testing normality is the SW. The sig. of this test indicates that the distribution is not normal.

Authors with a Master's degree exclusively from a Brazilian program produced an average of 1.50 articles, and authors with at least a Master's degree abroad produced an average of 1.83 articles. An MW test was used to verify whether the mean difference is statistically significant, and obtained a sig. = 0.181, which indicates that the averages are not different.

Of the 202 authors who had curriculum Lattes, 163 had a doctorate degree at the end of this three-years period, i.e. in 2012 and three authors had two doctorates. Table 15 shows information about author's PhD degree.

Table 15 - Author's PhD degree, in absolute numbers

PhD	n	PhD	n
Business Administration	108	Accounting and Finance, Agricultural and Food Economics, Agribusiness, Applied Computation, Communication Social, Law, Mechanical Engineering, Epidemiology And Public Health, Human Resource Education, Industrial And Business Studies, Management Science, Mathematics, Medicine, Operations Research, Philosophy, International relations, Technology and Innovation Management, Urban Planning	1
Economics	9		
Production Engineering	9		
Accounting	8		
Political Science	4		
Electrical Engineering	3		
Dentistry	3		
Statistics	2		
Sociology	2		

We can observe the predominance of PhD's degrees in Business Administration, Economics, Accounting and Production Engineering. The four areas together account for the formation of 80.9% of the sample authors. Authors who had two doctoral formations had their second PhD in Management (2), and in Human Resource and Education (1).

We also analyzed the year that these doctorates were completed and the time that has elapsed since then. Figure 5 and Table 16 summarizes the results.

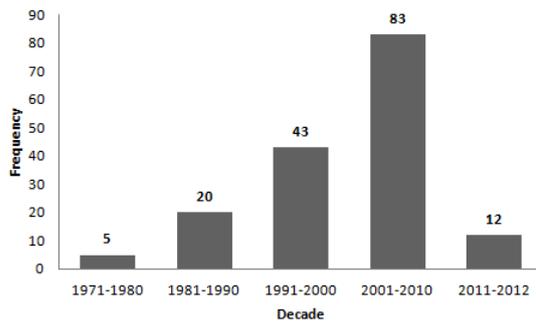


Figure 5. Distribution of the author's PhD completion year, per decade

Statistics	
Average	11.37
Standard error	0.74
Median	9
Mode	3
Standard deviation	9.47
Variance sample	89.73
Kurtosis	0.34
Asymmetry	1.04
Range	40
Minimum	0
Maximum	40

Table 16 - Descriptive statistics of the time elapsed since the author's PhD completion

The distribution of the completion of the first doctoral degree per decade shows a strong concentration in the 2000's (50.9%). The average of the time elapsed since the completion of doctorate in 2012 was 11 years. The mode was 3, and the median was 9. The three younger doctorates were completed in 2012 and the oldest in 1972. Similarly to the analysis for baccalaureate and Master's degree completion, we conducted an additional analysis exclusively with doctors who have published more than one article internationally: they were 55 authors.

PhD age, without authors with only one contribution

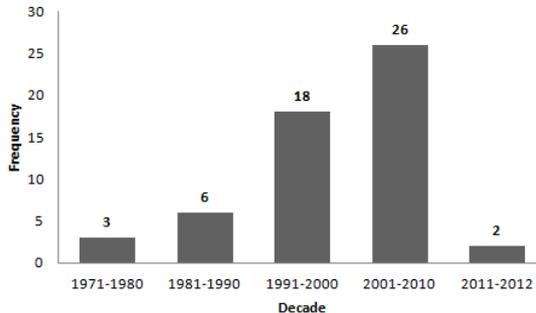


Figure 6. Distribution of the author's first doctorate's year per decade, without authors with only one contribution

Statistics	
Average	12.65
Standard error	1.30
Median	11
Mode	12
Standard deviation	9.64
Variance sample	93.01
Kurtosis	0.75
Asymmetry	1.12
Range	39
Minimum	1
Maximum	40

Table 17 - Descriptive statistics of the author's

The completion time average is slightly higher for the group that published more than one article. The latest doctor degree was awarded in 2011 and the oldest in 1972.

It is important to note that although only 163 authors had completed their doctorate by 2012, others were still attending graduate programs at that time. From these authors, 8 completed their doctorates in 2013 and 3 in 2014 (data collected in Oct. 2014). And about the authors who were doctoral students during the period: 8 one started in 2008, one in 2010, three in 2011 and three in 2012). Countries that doctorates were completed are: Brazil (134), US (14) UK (11), Canada (2), Germany (1), Scotland (1), Spain (1), France (1) and Portugal (1). The institution was also identified in addition to the country, as follows in Table 18:



Table 18 - *PhD Institutions*

Institution	n	Institution	n
University of São Paulo (Brazil)	66	Lancaster University	2
Getúlio Vargas Foundation - São Paulo (Brazil)	24	Manchester Business School	2
Getúlio Vargas Foundation - Rio de Janeiro (Brazil)	8	Pontifical University Catholic of Rio de Janeiro (Brazil)	2
University of Minas Gerais (Brazil)	8	University of Brasília (Brazil)	2
University of Rio Grande do Sul (Brazil)	5	University of Santa Catarina (Brazil)	2
University of Campinas (Brazil)	4	University of Sussex	2
University of Rio de Janeiro (Brazil)	4	Other 32 universities	1
University of Illinois	3		

The first four institutions are not a surprise given that the analysis came from the sample of articles published by USP Administration and Accounting programs, and Business Administration in FGV/SP, FGV/RJ and UFMG. It should be taken into account even though 17 of the researchers who did their doctorates in Brazil, had had a research period in international institutions.

Authors who completed their doctorate exclusively in Brazil (n = 115) published 1.47 articles. Those who completed their doctorate with a research period abroad (n = 17) published an average of 1.52 articles. Those who completed their full doctorate abroad (n = 31) published on average 2.10 articles.

The normality of the distribution was tested for articles published by doctors who did their doctorate exclusively in Brazil with the KS test sig. = 0.000 and the SW test sig. = 0.000. Two tests also were conducted for the group of authors with a sandwich period and the KS test sig. = 0.000 and SW sig. = 0.000. Finally, the normality test for those with doctorate exclusively abroad and the KS test sig. = 0.000 and SW test sig. = 0.000. That is, one can identify the three distributions are not normal.

Then we proceeded to a MW test to identify if the differences were statistically significant. Table 9 illustrates the results:

Table 19 - *Significances of MW Tests*

PhD.	Brazil	Sandwich	Exterior
Brasil	-		
Sandwich	0,378	-	
Exterior	0,040	0,450	-

Therefore, with a 5% significance level, the average of publications from researchers who did their doctorates exclusively in Brazil is statistically different from the researchers who did their doctorate fully abroad.

The average of those with a sandwich period was not statistically significant with both those with a doctorate exclusively in Brazil or those with a doctorate exclusively abroad.

We also analyzed the curricula of authors who had completed a postdoctorate. Of the 202 authors with Lattes, 51 said they had completed a postdoctoral research. Postdoctorates have met the greatest geographic plurality: 11 countries, as shown in Table 20.



Table 20 - Countries in which postdoctorates were completed

Countries	n.	Countries	n.
Brazil	16	Belgium	2
USA	16	Australia	1
France	4	Denmark	1
UK	4	Scotland	1
Canada	3	Spain	1
Portugal	2		

We conducted an analysis of the year the post-doctorates were completed, as seen in Figure 7 and Table 21, below.

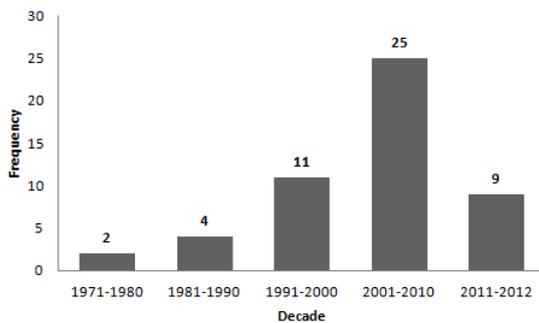


Figure 7. Distribution of the author's post-doctoral year, by decade

Table 21 - Descriptive statistics of the author's post-docs age

Statistics	
Average	9,75
Standard error	1,36
Median	5
Fashion	5
Standard deviation	9,72
Variance sample	94,55
Kurtosis	0,39
Asymmetry	1,12
Range	38
Minimum	0
Maximum	38

At the end of three-year period, post-doctorates were completed in an average of nine years. The oldest post doctorate was completed in 1974 and the latest in 2012.

The post-docs of the authors who have published more than one article were also isolated from the others. Figure 8 and Table 22 show the analysis results.

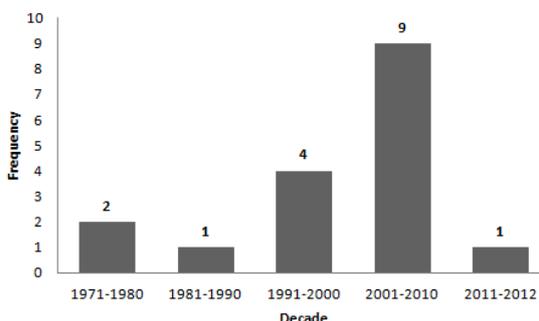


Figure 8. Distribution of the author's postdoctoral year per decade, without authors with only one contributions

Table 22 - Descriptive statistics on the age of the author's postdocs, without authors with only one contribution

Statistics	
Average	12,82
Standard error	2,77
Median	9
Fashion	3
Standard deviation	11,41
Variance sample	130,28
Kurtosis	0,06
Asymmetry	1,04
Range	38
Minimum	0
Maximum	38

The average time of completion of the author's post-docs was three years higher than the one that included isolated publications.

The institutions where the postdocs were made were also the object of investigation, as Table 23 shows:



Table 23 - *Postdoctoral Institutions*

Institution	n	Institution	n
Getúlio Vargas Foundation - São Paulo	6	University of Illinois	3
Columbia University	3	Conservatoire National des Arts et Metiers	2
École des Hautes Études Commerciales de Montréal	3	Other 31 universities	1
University of São Paulo	3		

The authors postdoctorate completed abroad (n = 35) published an average of 1.65 and authors with postdoctorate completed in Brazil (n = 16) published an average of 1.31 articles.

The normality of the distribution of authors with postdoctorate abroad was tested with KS test sig. = 0.000 and SW test sig. = 0.000. Since $n > 30$ then the most appropriate test is KS, and it discards the data distribution normality. The normality of the distribution of authors with postdoctorate abroad was tested with KS test sig. = 0.000 and SW test sig. = 0.000. As $n < 30$ then the most appropriate test is the SW, and he dismisses the normality of the data distribution. We then conducted the MW test and it was found that a 5% significance level the difference is not statistically different (sig. = 0.360).

Finally, we studied the time elapsed between each formation stage: baccalaureate, Master's, and PhD. The purpose is to consider whether the intervals between the completion of the undergraduate, master's and doctoral degrees are changing over time. For this analysis, we considered the dates of completion of the first undergraduate, Master's and doctoral degrees when the author had more than one.

On this subset we have studied curriculum of 180 authors who held undergraduate and master's degree. To reach that number were disregarded the authors with no information about graduation (n = 4) or without master (n = 16). Table 24 summarizes the descriptive statistics, per decade.

Table 24 - *Descriptive statistics on the time between the completion of undergraduate and master's degree*

Statistics	1960-1970	1971-1980	1981-1990	1991-2000	2001-2010	Total
Average	10.29	6.93	9.30	5.65	3.82	6.54
Standard error	1.95	0.99	0.89	0.44	0.28	0.36
Median	10	5,5	7	5	3	5
Mode	#N/D	3	7	4	3	3
Standard deviation	5.15	5.42	6.10	3.13	1.85	4.84
Variance sample	26.57	29.37	37.17	9.79	3.42	23.43
Kurtosis	-1.98	3.21	0.41	-0.20	1.25	3.09
Asymmetry	0.05	1.80	1.05	0.64	1.08	1.71
Range	13	23	26	13	9	26
Minimum	4	2	0	0	0	0
Maximum	17	25	26	13	9	26

The first column had a longer period because there was only one author formed in the 1950s, then it was incorporated into the 1960s. It can be seen that since the 1980s there began a decrease in the interval between the completion of the baccalaureate and master.

The authors with longer intervals had a range over 20 years and they were graduated in Aeronautical Engineering and Agricultural Engineering (21), Production Engineering and Food Engineering (22), Electrical Engineering (25), and Metallurgical Engineering (26). They all graduated between 1980 and 1986. They completed their undergraduate and Master's



degree in Brazil and all of them were authors of only one article.

The authors with shorter interval completed their Masters in the same year who have completed their graduation or in the following year. The undergraduate and masters were in Dentistry (1) and Administration (3). The graduation in Dentistry and in Administration were both in Brazil and the other two in Administration were in Albania and in the United States, and the master's degree were in Brazil, in the case of Brazilian graduation, and Italy or the United States, in the case of foreign degrees. These four authors published an average of 1.5 articles.

We also analyzed the time between the completion of the Master's and doctorate. From the curricula, 16 contained no information about masters and 39 contained no information about the doctorate then leaving 152 resumes to be analyzed.

Table 25 - *Descriptive statistics on the time between the completion of the master's and Ph.D. degree*

Statistics	1971-1980	1981-1990	1991-2000	2001-2011	Total
Average	5	8,36	6,47	4,52	5,86
Standard error	0,65	0,56	0,34	0,22	0,22
Median	5	9	6	4,5	5
Fashion	4	9	5	5	5
Standard deviation	2,74	2,81	2,45	1,67	2,66
Variance sample	7,53	7,91	6,01	2,78	7,09
Kurtosis	0,23	-0,48	1,08	1,47	0,90
Asymmetry	0,23	0,50	0,91	0,65	0,85
Range	11	9	13	9	14
Minimum	0	5	1	1	0
Maximum	11	14	14	10	14

As there was only one individual who finished a Master's degree in 2011 in the sample, he was included in the 2000's. In the same way that the interval between the completion of baccalaureate and Master's degree, the completion interval between master and PhD also experienced a reduction trend since the 1980s. The authors with greater interval between the completion of master's and PhD have intervals over 10 years. And they completed their masters in Brazil (7), in the United States (2) and the UK (1) and published on average 1.8 articles.

Those whose intervals were shorter completed his doctorate in the same year they completed the master or in the following year. The masters were completed in the United States (3), in Business Administration, Mechanical Engineering and Economics, and in Brazil in Economics. The doctorates were completed in Brazil (3), in Administration (2) and in Mechanical Engineering (1), or in the United States, in Economics (1). They published on average 1.25 articles.

We had in our sample 51 curricula with information on PhD and postdocs (see Table 26).



Table 26 - *Descriptive statistics on the time between the completion of doctoral and postdoctoral*

Statistics	1971-1980	1981-1990	1991-2000	2001-2010	Total
Average	7	8.89	6.94	5.30	6.47
Standard error	2.89	2.03	1.19	0.49	0.57
Median	7	9	7	5	5
Mode	-	-	4	4	4
Standard deviation	5	6.09	5.05	2.57	4.32
Variance sample	25	37.11	25.47	6.60	18.68
Kurtosis	-	2.12	-0.43	0.63	2.12
Asymmetry	0	1.14	0.45	0.56	1.15
Range	10	21	18	12	22
Minimum	2	1	0	0	0
Maximum	12	22	18	12	22

Repeating the trend of previous analysis, the interval between the completion of PhD and postdocs showed a decrease trend from the 1980s. Some authors have even completed the postdoc in the same year they have completed their doctorate. The author who spent more time lapse to complete postdoctoral, made it 22 years after obtaining the PhD.

5 CONCLUSIONS

This study aimed to analyze the profile of authors who have published in international journals between 2010 and 2012 in the area of Administration, Accounting and Tourism.

The first finding was the obvious concentration of baccalaureate, Master's and PhD degrees in Business Administration and Accounting, and unexpected but still unsurprisingly, in the areas of Economics and Engineering, mainly Production Engineering.

The growing proliferation of researchers' formation from the 1980s was also not surprising. In addition to the growth of the graduate system as a whole in Brazil since 1980s, 1979 precedes in three and a half decades 2014, and this is the currently prevailing retirement deadline for men.

We have also identified a greater dispersion of formation abroad and among more universities at the highest academic degrees. This finding is corroborated research of Soares (2011), which is restricted to researchers from the Accounting area.

We conducted statistical tests to identify whether the stages of academic training abroad have impacted the ability to publish articles in international journals. The tests indicated that the average number of published articles from authors with formation in Brazil or abroad, at undergraduate, graduate and postdoctoral were not statistically significant different.

We found out that only the average of publications of authors with full doctoral completed abroad is statistically higher than the average number articles published by authors who completed the full doctorate in Brazil. The average number of publications authored by doctors who completed a research period abroad fell within a gray area that did not differ significantly from the average of those who earned a doctorate exclusively in Brazil, nor from who earned a full doctorate abroad.

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