



Revista de Administração da Universidade Federal de Santa Maria

ISSN: 1983-4659

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Universidade Federal de Santa Maria
Brasil

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Revista de Administração da Universidade Federal de
Santa Maria, vol. 12, no. 2, 2019, April-June, pp. 255-267

Universidade Federal de Santa Maria
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EDUCATION INTERNATIONALIZATION: RELATIONSHIP BETWEEN TRAINING ABROAD AND INTERNATIONAL PUBLICATIONS PROGRAMS IN STRICTO SENSU IN ADMINISTRATION

INTERNACIONALIZAÇÃO DO ENSINO: RELAÇÃO ENTRE FORMAÇÃO NO EXTERIOR E PUBLICAÇÕES INTERNACIONAIS DOS PROGRAMAS EM STRICTO SENSU EM ADMINISTRAÇÃO

Submission: 01/06/2015

Accept: 30/06/2017

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ABSTRACT

Like many sectors of the economy, universities need to worry about increasing competitiveness. Internationalization has been an alternative that permits companies to be part of the global scenario, expanding their interaction network, but can also be explored in the field of education, mainly linked to network theory. This research examined the training of teachers of graduate programs in Administration in stricto sensu evaluated with grades 6 and 7 by CAPES in 2013. The purpose was to investigate whether the fact that the teachers have their training or part of it abroad contributes significantly to the increase of international publications. This is a qualitative research and secondary data has been worked with. The results indicate that the two countries that received most publications from Brazil in relation to the programs studied were the United States and then England, the same countries where most of the institutions have trained teachers or part of them abroad. The fact of having part or complete formation abroad can be interpreted as a greater possibility of interactions with other institutions and raise the actions in the indicators of internationalization proposed by CAPES, both for the possibility of the teacher to increase his network, and for the possibility of expanding knowledge in new languages, which would promote communication between teachers and consequently the programs evaluated.

Keywords: Internationalization of Education, Networks, *Stricto Sensu*, Universities

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RESUMO

Assim como diversos setores da economia as universidades precisam se preocupar com o aumento da competitividade. A internacionalização tem sido uma alternativa que possibilita as empresas a fazer parte do cenário global, ampliando a sua rede de interação, mas também pode ser explorada no campo do ensino, principalmente atrelada a teoria de redes. Esta pesquisa analisou a formação dos docentes de programas de pós-graduação em Administração em stricto sensu avaliados com notas 6 e 7 pela CAPES em 2013. O objetivo era averiguar se o fato do docente ter formação ou parte dela no exterior contribui de forma significativa para o aumento das publicações internacionais. Trata-se de uma pesquisa que utilizou métodos múltiplos e trabalhou-se com dados secundários extraídos da CAPES e Currículo Lattes. Os resultados apontam que os dois países que mais freqüentemente receberam publicações do Brasil em relação aos programas pesquisados, foram os Estados Unidos e em seguida Inglaterra, os mesmos países em que maior parte das instituições apresenta os docentes com formação ou parte dela no exterior. O fato de ter parte ou formação completa no exterior pode ser compreendido como uma maior possibilidade de realizar interações com outras instituições e elevar as ações nos indicadores de internacionalização propostos pela CAPES, tanto pela possibilidade do docente aumentar a sua rede, quanto pela possibilidade de ampliar o conhecimento em novos idiomas, o que facilitaria a comunicação entre os docentes e conseqüentemente os programas avaliados.

Palavras-chave: Internacionalização do Ensino, Redes, Stricto Sensu, Universidades

1 INTRODUCTION

Taking into consideration that human knowledge and talent can today be a great competitive advantage of organizations and that the university can contribute significantly to the generation and transmission of such knowledge, the role that universities play in society is extremely relevant and monitoring their evolution over the years is an essential task to understand how this knowledge can be expanded and diffused. With the help of technology and the internet, the propagation of information is becoming faster and allows both society and organizations to be part of a connected world, also increasing the offer of products and services from various parts of the planet (STROMQUIST, 2007).

Bennett and Kottasz (2011) add that aggressive competition currently makes internationalization a relevant strategic option for the university. After all, gaining a sustainable competitive advantage in an environment where several sectors perceive an increase in competition is the great challenge of several organizations. Internationalization can be presented as one of the main tools that an organization has to be part of the international scenario and obtain advantages.

Therefore, universities need to rethink their way of acting and seek strategies to remain in the market in order to articulate with other institutions and to accompany society's demands. According to Wantanabe, Gomes, and Hoffman (2013) in the academic universe, science has increasingly become a collective enterprise, with the increase in interest in cooperation between researchers in recent decades.

This research aims at answering the following question: What is the relationship between the teacher's training in *stricto sensu* Administration evaluated with grades 6 and 7 by CAPES in the evaluation of the triennium 2010, 2011 and 2012 and the number of articles published abroad?

The general objective of this research is to analyze if the institutions that have a greater number of teachers with training or part of it abroad means that they have more publications abroad.

The specific objectives are: a) to analyze the training of teachers linked to the selected programs, b) to identify the countries that had the largest number of publications of Brazilian articles, and c) to verify the relationship between teacher education and the number of articles published abroad.

According to Marin and Brazil (2004), the internationalization of higher education is one of the topics that has gained relevance due to the emergence of large economic blocks that seek to make commerce and consumption more flexible across continents. "Until recently, education had been little touched, partly due to the obscuring of its economic potential, and partly because it was thought to be a problem of the governments and that there would be little possibility of "commercialization"(MARIN and BRASIL, 2004).

Stalliviere (2008) complements that international academic cooperation, especially in the last decade has acquired fundamental importance in the institutions of higher education. "Universities are entering the new century, with the challenge of rethinking their role before society as institutions that open the multiplicity of values and opinions ..." (STALLIVIERI, 2008)

2 EDUCATION INTERNATIONALIZATION

Bennett and Kottasz (2011) define internationalization of teaching as a process of integrating an international, intercultural, global dimension with the function of the provision of teaching. For them, internationalization involves a multitude of tasks such as organization, financing and strategic decisions, such as international franchising, curriculum, research collaborations, cross-border joint ventures, setting up campuses in other countries, teachers and students in programs, as well as the recruitment of teachers with international expertise and experience.

Knight & de Wit (1997) define the internationalization of education as "the process of integrating an international/intercultural dimension for the functions of teaching, research and service institutions". Maas-Garcia and Maten-Speksnijder (2009) argue that the concept of internationalization in education is based on economic justifications. These justifications were: a) emphasis on internationalization, due to the demands of the modern, more global labor market, b) joint international research and development projects needed to compete globally in new technology, and much more c) attention to the commercialization of higher education in the international market, and d) higher education as an export product (de Wit, 2002). Harris (2008) also argues that internationalization is important for the university to raise funds because universities can increase their incomes significantly through fees charged to foreign students.

Bennet and Kottasz (2011) point two lines of internationalization of universities, the first being a cooperative approach, that is, cooperation manifests itself in academic networks through strategic cooperation agreements and institutional alliances that allow partners to a) specialize in certain lines of work; (b) access to assets owned by the other (e.g. online access to the library of a partner institution); and c) to learn about new approaches and educational innovations in the partner's country. "Institutional alliances allow rapid entry into foreign markets and acquisition of knowledge in new pedagogical and research methods developed elsewhere, for example through the use of the partner's syllabus and education programs," (BENNETT & KOTTASZ, 2011).

The second approach would be competitiveness, especially after the fierce competition in the education market. Bennett and Kottasz (2011) point out that the manifestations of a competitive approach could include the constant search for market niches in developing countries, the implementation of special and more flexible modes of study for foreign students, the creation of new units in foreign countries, without the involvement of local partners, granting incentives to reward employees to successfully implement foreign operations, price cut (i.e. student fee), hiring foreign recruitment agents, aggressive marketing and strong advertising in other countries, and finally the promotional leverage of an institution's reputation in foreign currency markets.

Horta (2009) finally points out that universities that establish themselves with global higher education have a competitive advantage. For they belong to countries with dominant scientific

systems, have more resources or gained international reputation and experience through the development of activities at the international level. They have created a brand, and these are the universities that tend to be regarded as world class quintessential universities. This further reinforces the idea that internationalization of education can be advantageous and raise the competitiveness of universities, as in the case of European universities with strong names recognized around the world.

However, Stallivieri (2008) refers to an important point to be observed by the universities that intend to internationalize, as they highlight points that can be considered obstacles to internationalization as constraints in terms of geographical location of the partner universities; existence of language barriers; areas of excellence in teaching or research, as well as the level of development of the country where the institution is located (STALLIVIERI, 2008). For the author Miura (2006), the obstacles to internationalization are the organizational aspects of universities, such as: "scarcity or deficiencies in policy or strategic plan, international relations offices, budget, activity monitoring structure, administrative body to meet the demands of internationalization among others".

3 NETWORK THEORY

According to Alves et al. (2010), with the increase of globalization companies seek ways to try to increase competitiveness and one of them is to establish relationships in cooperation networks. These relationships allow the exchange of knowledge, information sharing and better adaptation to changes and innovations that for small and medium enterprises constitute a survival mechanism.

Castells (1999), new opportunities are created all the time when one is inside the networks. But outside of them, survival will become increasingly difficult. According to Castells (1999), the importance of the technological transformation that establishes the integration in networks as a fundamental form of competition in the new global economy and highlights the elevation of the barriers that prevent the access of new isolated organizations in more advanced sectors of the economy, the entry of new competitors. In this context, cooperation and network systems would be the only way to minimize risk, split costs and keep up with constantly updated information.

Castells (1999), in a more incisive analysis, states that networks are a set of interconnected ties, where a tie depends on the type of concrete networks in which it is inserted. Alves (2008) adds that they are ways of organizing the relationships between the actors, favoring mutual cooperation and flexibility of the functional structure. This interaction, however, does not eliminate competition and conflict of ideas.

According to Ribeiro et al (2013) in order to analyze a network, it is necessary to understand its structure, as well as the relationships that constitutes it. The main structural property of the network is the density that can be understood through the extension of the interconnection between the actors, that is, the larger the interconnection, the greater the density. In the case of relations, cohesion among actors is the most representative indicator. The measures of centrality, density, and transitivity (probability of two people being connected), make up some of the main structural properties of a network (RIBEIRO et al. (2013).

Degree centrality is defined by the direct relational activity of an actor, in this sense, the one that occupies a more central position is the one with the highest number of connections, according to Ribeiro et al. (2013). Closeness centrality is a function of the proximity or distance of one actor in relation to all others in a network. The idea perceived in the analysis of this indicator is that an actor with a high centrality of approximation is the one who is better able to interact quickly with all the others. Finally, the centrality of intermediation (Betweenness) evaluates the dependence of nonadjacent actors on others that act as a sort of bridge for consolidating their in-

teraction. In this case, the more an actor finds himself in an intermediary situation, that is, other actors have to pass through him to reach out to others, the greater his control ability.

According to Freire et al. (2010) structurally the networks can be dense or diffuse, according to the position of an actor in the structure of the network and its effects in the acting position. This is to say according to the author Freire et al (2010) that the more central the position of an actor in the network, the more relationships will be established with other actors directly or indirectly by chain relations.

For Ribeiro et al (2013) knowledge networks, like most social networks, have one of their main elements of analysis in cohesion. Thus, in the collective behavior of the actors of the same group, cohesion serves as a basis for group solidarity and identity. Ribeiro et al (2013) agrees with Freire et al (2010) and also complements that structurally, besides the networks may be dense or diffuse they may have strong or weak connections. Weak connections and diffuse networks are more typical in unstable environments as they allow for greater flow of new information, while strong connections and dense networks are common in stable environments, since the exchange of information is refined and there is a high level of trust, reciprocity and social control among the actors, however, it can lead to isolation of the group and a possible difficulty of access of these actors to new information circulating outside of that restricted environment (RIBEIRO et al., 2013).

The concept of strong and weak bonds is a point highlighted by Freire et al (2010) and by Lemieux and Ouimet (2012) in the theory based on Granovetter (1973) that says that the strong bonds are those that unite because they present greater proximity and frequency. While the weak bonds are characterized by a more distant relationship, where the interaction between the actors is smaller. Lemieux and Ouimet (2012) point out that the differences between strong and weak bonds enable strong bond networks to generally acquire different configurations of weak bond configurations.

Freire et al. (2010) point out that the role of the weak bond is that of bonding in dense networks (strong bonds), in addition, it establishes communication and exchange of information between them. The author emphasizes 'the strength of weak ties', highlighting the relevance of obtaining new information outside the group of strongly connected relationships in dense networks.

In this sense, it is reinforced by Limieux and Ouimet (2012) that the networks of strong bonds are therefore much more inclined to close on themselves than the networks of weak bonds that tend normally to open outwards. Corroborating with Burt's (1992) theory, structural holes do not exist in groups with weak bonds and are also numerous in low-density groups in which there is no direct connection in several pairs of authors.

4 METHODOLOGY

A qualitative research according to Creswell (2007) is interpretative, that is, it is the researcher who interprets the data. It means developing a person's description or scenario, analyzing data to identify themes or categories, and finally, making an interpretation or drawing conclusions about its meaning, both personally and theoretically. Malhotra (2006) complements that it is an unstructured research based on small samples that provides insights and understanding of the context of the problem.

For this research was the last evaluation made available by CAPES in the year 2013 referring to the triennium 2010-2012. The data used for the development of the research are secondary, according to Mattar (2000, p. 134), the secondary data are those that have already been collected, tabulated, ordered and sometimes even analyzed and are cataloged at the disposal of the interested parties.

Information was collected on the CAPES website regarding the evaluation of the Administration programs, informing which universities obtained grades 6 or 7 in the three-year period 2010-2012, the only ones considered with a high degree of internationalization. From this information searches on the programs evaluated were carried out, their respective grades, CAPES comments on the CAPES website Evaluation Sheet. Identifying the teachers linked to the programs, a search was made in the Lattes curriculum to obtain more detailed information such as the training of the teachers participating in the programs in question (institution, year of formation, counselor, whether or not it is a “sandwich”).

The Scriptlattes program was used to consolidate the information provided by the researchers in their Lattes CV, as well as to objectively visualize information about publications in the selected years (2010, 2011 and 2012).

5 DATA ANALYSIS

CAPES offers a series of recommendations for university master's programs to be followed and if they can be followed they will have a better recommendation, that is, a higher score that can range from 1 to 7, but only grades 6 and 7 are taken into consideration to prove that the program has a high degree of internationalization.

According to information provided by CAPES (2013), there was a growth of 23% of graduate programs in Brazil compared to the triennium from 2007 to 2009 with the triennium from 2010 to 2012.

Table 1: Number of Programs and Courses Assessed by CAPES

	2010	2013
Programs	2718	3337
Courses		
Master's	2436	2893
Doctorate	1420	1792
Professional Master's	243	397
Total of courses	4099	5082

Source: CAPES, 2013

5.1 Internationalization of Graduate Programs in Brazil

Assuming that CAPES (2013) considers that a graduate program with grades 6 or 7 means that it presents a high degree of internationalization, in Brazil the last three evaluations made by CAPES presented the following result: the evaluation of the year 2007 presented 237 postgraduate programs with grades 6 or 7, of which 155 had grades 6 and only 82 grades with grades 7. In the 2010 evaluation, there was a considerable growth of grades 6 and 7, with 204 being obtained grades 6 and 294 grade 7. A growth of 110% of the 2010 assessment compared to 2007. However, from the evaluation of 2013 to 2010, there was a reduction, from 498 programs in total to 406 programs, respectively, a reduction of 18%.

The internationalization of postgraduate programs in Brazil, for the authors La Bianco et al (2010), has undeniable relevance and functions, as it is a fundamental part of efforts to broaden the program's dialogue horizon, placing its members in productive contact with a broader scientific community.

5.2 Training

In the table below, it is possible to visualize much information about the training of teachers, among them, the number of teachers in each institution, by level of education, the proportion of teachers in each level of instruction per institution and also the average training times compared within each level between institutions through the Kruskal-Wallis test. Some points can be highlighted, for example: a) all the teachers presented a doctorate; b) in relation to the percentage of teachers who presented postdoctoral studies, FGV-SP, USP, UFMG and FGV-RJ presented 42%, 40%, 36% and 28%, respectively; c) the average training time was significantly different between at least two institutions at all levels of education. To identify between which institutions occurred the significant differences were followed by the following multiple comparisons.

Table 2: Table of the number of teachers at each level of education per institution and Kruskal-Wallis test for the average time of training between institutions by level of education.

Level	IES	N	% of Teachers	Average	E.P.	1º Q.	2º Q.	3º Q.	P-Value
Master's	FGV-RJ	25	100%	21,8	1,5	18,0	21,0	25,0	0,033
	FGV-SP	31	94%	23,4	1,7	17,0	21,0	28,0	
	UFMG	22	100%	21,1	1,4	17,0	22,0	25,0	
	USP	40	93%	27,8	1,5	19,5	30,0	36,0	
Doctorate	FGV-RJ	25	100%	14,3	1,2	10,0	14,0	16,0	0,000
	FGV-SP	33	100%	16,1	1,3	11,0	15,0	19,0	
	UFMG	22	100%	14,5	1,2	12,0	14,0	19,0	
	USP	43	100%	22,8	1,4	16,0	21,0	30,5	
Post-Doc	FGV-RJ	7	28%	7,6	1,1	5,0	8,0	9,5	0,015
	FGV-SP	14	42%	7,0	1,3	4,0	7,0	8,0	
	UFMG	8	36%	7,6	1,5	5,0	8,5	10,5	

Source: Currículo Lattes, 2014

In the next table, the objective is to compare the institutions with regard to the percentages of masters, doctorates and postdoctoral studies carried out abroad. Thus, it can be verified that: a) for the doctoral level, there was a notable difference (P-Value= 0.001) among the FGV-RJ, FGV-SP, UFMG and USP institutions that presented 44%, 27 , 27%, 40.91% and 4.76% of teachers studying abroad. USP differs from all other institutions, with the lowest percentage of teachers with doctorates abroad. b) The other levels of education did not show significant differences between the institutions.

Table 3: Contingency table and Chi-Square test between the training site and the institutions at each level of instruction.

Level	Institution	Training Location						P-Value
		Abroad		Brazil		Total		
Master's	FGV-RJ	7	28,0%	18	72,0%	25	100,0%	0,079
	FGV-SP	7	23,3%	23	76,7%	30	100,0%	
	UFMG	1	4,8%	20	95,2%	21	100,0%	
	USP	4	10,0%	36	90,0%	40	100,0%	
	Total	19	16,4%	97	83,6%	116	100,0%	
Doctorate	FGV-RJ	11	44,0%	14	56,0%	25	100,0%	0,001
	FGV-SP	9	27,3%	24	72,7%	33	100,0%	
	UFMG	9	40,9%	13	59,1%	22	100,0%	
	USP	2	4,8%	40	95,2%	42	100,0%	
	Total	31	25,4%	91	74,6%	122	100,0%	
Post-Doc	FGV-RJ	7	100,0%	0	0,0%	7	100,0%	0,128
	FGV-SP	8	57,1%	6	42,9%	14	100,0%	
	UFMG	5	62,5%	3	37,5%	8	100,0%	
	USP	14	82,4%	3	17,6%	17	100,0%	
	Total	34	73,9%	12	26,1%	46	100,0%	

Source: Currículo Lattes, 2014

Analyzing the training of teachers in terms of time, as well as in the question whether it is done in Brazil or abroad, it is necessary to point out that USP has the lowest number of teachers who have a doctorate degree abroad, but it also was the institution that presented the highest average training time for their doctors. In other words, USP presented the highest average number of senior doctors, though trained in Brazil and not abroad.

Stallivieri (2008) highlights that this mobility of students, teachers and researchers is important because they intensify transnational ties voraciously, establishing connections and creating networks of universal knowledge.

In the table below, it is verified that considering the master's, doctorate and post-doctoral studies together, there was a significant difference ($P\text{-Value} = 0.020$) in the percentage of training abroad when comparing the institutions. The difference occurs exactly between USP and FGV-RJ, with USP presenting a lower percentage of training abroad.

Table 4: Contingency table and chi-square test between the training site and the institutions, considering altogether: master's, doctorate and postdoctoral studies.

Institution	Training Location						P-Value
	Abroad		Brazil		Total		
FGV-RJ	25	43,9%	32	56,1%	57	100,0%	0,020
FGV-SP	24	31,2%	53	68,8%	77	100,0%	
UFMG	15	29,4%	36	70,6%	51	100,0%	
USP	20	20,2%	79	79,8%	99	100,0%	
Total	84	29,6%	200	70,4%	284	100,0%	

Source: Currículo Lattes, 2014

The table below presents in a descriptive way the countries where the teachers of each institution carried out their studies, for each level of education.

Table 5: Frequency table for the country of training by level of teacher instruction by institution

Level	Country	FGV-RJ		FGV-SP		UFMG		USP	
		N	%	N	%	N	%	N	%
Master's	USA	3	42,86%	5	71,43%	0	0,00%	4	100,00%
	England	0	0,00%	2	28,57%	0	0,00%	0	0,00%
	France	1	14,29%	0	0,00%	1	100,00%	0	0,00%
	Canada	1	14,29%	0	0,00%	0	0,00%	0	0,00%
	Portugal	1	14,29%	0	0,00%	0	0,00%	0	0,00%
	Germany	1	14,29%	0	0,00%	0	0,00%	0	0,00%
	Total	7	100,00%	7	100,00%	1	100,00%	4	100,00%
Doctorate	USA	4	36,36%	3	33,33%	1	11,11%	2	100,00%
	England	4	36,36%	4	44,44%	6	66,67%	0	0,00%
	France	1	9,09%	0	0,00%	1	11,11%	0	0,00%
	Portugal	1	9,09%	0	0,00%	0	0,00%	0	0,00%
	Germany	1	9,09%	0	0,00%	0	0,00%	0	0,00%
	Canada	0	0,00%	1	11,11%	0	0,00%	0	0,00%
	Australia	0	0,00%	1	11,11%	0	0,00%	0	0,00%
	Spain	0	0,00%	0	0,00%	1	11,11%	0	0,00%
	Total	11	100,00%	9	100,00%	9	100,00%	2	100,00%

Post-Doc	USA	1	14,29%	2	25,00%	1	20,00%	6	42,86%
	Portugal	2	28,57%	0	0,00%	3	60,00%	1	7,14%
	France	1	14,29%	1	12,50%	0	0,00%	3	21,43%
	Canada	0	0,00%	3	37,50%	0	0,00%	0	0,00%
	England	1	14,29%	1	12,50%	0	0,00%	1	7,14%
	Spain	1	14,29%	0	0,00%	0	0,00%	0	0,00%
	Unknown	0	0,00%	0	0,00%	0	0,00%	1	7,14%
	Sweden	0	0,00%	1	12,50%	0	0,00%	0	0,00%
	Switzerland	0	0,00%	0	0,00%	0	0,00%	1	7,14%
	Italy	0	0,00%	0	0,00%	0	0,00%	1	7,14%
	Germany	1	14,29%	0	0,00%	0	0,00%	0	0,00%
	Netherlands	0	0,00%	0	0,00%	1	20,00%	0	0,00%
	Total	7	100,00%	8	100,00%	5	100,00%	14	100,00%

Source: Currículo Lattes, 2014

5.3 Publication

The 4 institutions presented a total of 1090 publications, in which 23 of these publications the publication countries were not informed, thus, they were not presented in the tables below.

The table below shows the number of publication of the institutions by the places of publication in the years 2010 to 2012. Thus, it can be highlighted that: a) institutions FGV-RJ, FGV-SP, UFMG and USP presented 39.9%, 28.8%, 9.9% and 21.6%, respectively, of FGV-RJ teachers, with a higher percentage than the others and UFMG a lower percentage than the others, b) although USP presented the largest contribution in the number of articles published (366), it was not the one that presented the highest percentage of publications abroad, while FGV-RJ was the one that presented the lowest contribution (178) in the number of articles, but it was the one that presented the highest percentage of publications abroad.

According to Miranda et al (2013) the assumption is that a faculty member who publishes is much more valuable to the educational community than the one who does not publish. So there is a growing concern about the number of publications. Moreover, many researchers such as Hudson (1996), Stallivieri (2008) Alves et al (2010), emphasize that it is not enough to publish it is important to do it in partnership to raise the quality and integrate researchers that have different abilities, in publishing with researchers in other institutions and other countries.

Place of Publication	Institution								P-Value
	FGV RJ		FGV SP		UFMG		USP		
Brazil	107	60,1%	178	71,2%	246	90,1%	287	78,4%	0,000
Abroad	71	39,9%	72	28,8%	27	9,9%	79	21,6%	
Total	178	100.0%	250	100.0%	273	100.0%	366	100.0%	

Table 6: Contingency table and chi-square test between institutions and place of publication.

Source: Currículo Lattes, 2014

The table below shows the amount of publication of the institutions by the places of publication for the years 2010, 2011 and 2012. Thus, it can be highlighted that: a) in all years there was a significant difference in the percentage of articles published abroad between (FGV-RJ, FGV-SP, USP and UFMG), b) it is worth noting that FGV-RJ decreased from 42.2% in 2010 to 38% , 0% in 2012 the percentage of publications abroad, while UFMG increased from 7.8% in 2010 to 12.4% in 2012 the percentage of publications abroad.

Table 7: Contingency table and Chi-Square test between institutions and place of publication per year.

Year	Institution	Publication Abroad						P-Value
		No		Yes		Total		
2010	FGV RJ	37	57,8%	27	42,2%	64	100,0%	0,000
	FGV SP	53	72,6%	20	27,4%	73	100,0%	
	UFMG	83	92,2%	7	7,8%	90	100,0%	
	USP	96	81,4%	22	18,6%	118	100,0%	
	Total	269	78,0%	76	22,0%	345	100,0%	
2011	FGV RJ	39	60,9%	25	39,1%	64	100,0%	0,000
	FGV SP	71	75,5%	23	24,5%	94	100,0%	
	UFMG	78	90,7%	8	9,3%	86	100,0%	
	USP	87	81,3%	20	18,7%	107	100,0%	
	Total	275	78,3%	76	21,7%	351	100,0%	
2012	FGV RJ	31	62,0%	19	38,0%	50	100,0%	0,001
	FGV SP	54	65,1%	29	34,9%	83	100,0%	
	UFMG	85	87,6%	12	12,4%	97	100,0%	
	USP	104	73,8%	37	26,2%	141	100,0%	
	Total	274	73,9%	97	26,1%	371	100,0%	

Source: Currículo Lattes, 2014

6 FINAL CONSIDERATIONS

It has been identified in this research that the four programs present all their professors with at least one completed doctorate, but the postdoctoral was only achieved by a part of the teachers, being FGV-SP with 42%, USP 40%, UFMG 36%, and FGV -RJ 28% of postdoctoral teachers. Although the average time of teacher training was significantly different between the programs, USP presented a higher average training time at all levels. Despite having the longest average time, USP was the institution that presented the lowest percentage of teachers who studied doctorates abroad, 4.76% of which were FGV-RJ, FGV-SP, and UFMG respectively 44%, 27.27% and 4.91% of the teachers who studied abroad.

The two countries that most frequently received publications from Brazil were the United States and then England, the same ones in which most institutions have teacher training as the first two countries with the largest number of trained teachers or part of them abroad.

Having part or complete formation abroad can be understood as a greater possibility of interacting with other institutions and raising actions in the indicators of internationalization proposed by CAPES, both for the possibility of the teacher to increase its network, and for the possibility of expanding knowledge in new languages, which would facilitate communication between teachers and consequently the programs evaluated.

This can be justified through the analysis of publications since FGV-RJ is the institution with the highest number of teachers trained abroad, and it was also the institution that presented the largest number of publications abroad, with 39%, while FGV-SP, UFMG and USP 28.8%, 9.9% and 21.6%, respectively. However, it is important to note that USP, despite presenting the percentage of the lowest number of articles published abroad, presented the largest number of publications in Brazil and abroad.

Some limitations were detected in this research as the lack of a pure database to deal only with internationalization criteria, specifically about detailed information of international publications. In addition, it is necessary to consider that the universities have forwarded the correct information to CAPES. It is important that all researchers linked to the program have their Lattes fully completed, correct and updated frequently. In practice, however, some incomplete information records were found in the Lattes CV, such as the failure to complete the year of publication of articles, the lack of information in which institution the researcher studied.

As a proposal of future research is the conception of a unique and standardized database suggestion for institutions to inform about their international publications as well as all internationalization actions in a way that can be used by researchers to conduct researches and searches on the theme.

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