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Research Article

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Scholarly Inbreeding in Latin American Academically Managed Journals

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Abstract

From a bibliometric perspective, scholarly inbreeding has been identified in journals through the excessive use of both author and journal self-citations. However, editorial bias toward researchers from the same institution as the editorial management team has seldom been considered. According to the Spanish Foundation for Science and Technology, this occurs when a journal publishes more than 20% of documents authored by researchers affiliated with the same institution as the editorial management team. The purpose of this study is to establish the extent to which 81 Latin American journals managed by universities publish intramural documents (defined as those published by its own faculties). Results revealed that 56% of Brazilian journals were not compliant with the 20% benchmark as well as 44% of Colombian journals, 50% of Chilean journals, and 71% of Mexican journals. Interestingly, one third of these journals published the majority of the documents in English. By examining the documents published by these journals and subsequent citations to these articles, it was established that the intramural documents of some journals registered a higher ratio of citations per document in comparison with extramural documents published in the same journals. The results presented in this study provide evidence of inbreeding in some academically managed journals from Latin America. Although no one specific reason can account for this phenomenon, plausible explanations are given that may contribute to its understanding.

Keywords: *inbreeding; scholarly; journal; editorial management; citations*
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Introduction

From a biological perspective, inbreeding has been defined as preferential breeding between close relatives. In this context, Falconer and Mackay (1996) argued that inbreeding may impact any trait under selection, such as the physiological efficiency of an organism. Although in academia, inbreeding refers to the employment of doctorates by the same institutions that formed them (Horta et al., 2010; Inanc & Turner, 2011), from a bibliometric perspective, inbreeding may be understood as the excessive use of author self-citations (Glanzel

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et al., 2004; Seeber et al., 2019) or journal self-citations (Yu & Wang, 2007; Campanario, 2017). However, editorial bias toward researchers from the same institution as the editorial management team has seldom been considered (what will be referred to as intramural publication). According to the Spanish Foundation for Science and Technology, this occurs when a journal publishes more than 20% of documents authored by researchers from the same institution as the editorial management team (Fuentes et al., 2013). Though this practice may seem harmless to most, it may actually have an effect on university rankings. Among the many parameters assessed by these rankings is research performance, which, in some cases (such as the SCImago Institutional Ranking), constitutes 50% of the overall score (SCImago, 2019). Likewise, other university rankings, such as QS World University Ranking and Academic Ranking of World Universities, assign a lower but still significant weight (20%) to research performance. Thus, inadvertently, a perverse stimulus may have been created for universities to use their own journals to improve this parameter, as a higher ranking position will facilitate university branding. From a journal's perspective, publishing more than 20% of intramural documents will limit the scope of intellectual coverage, diminishing their geographical reach and provenance. Furthermore, because peer-review is a subjective process, questions may be raised about the validity of the process. For instance, journals with a single-blind peer-review process are prone to biased peer reviews because the names of the authors are known by the reviewers (Helmer et al., 2017; Seeber & Bacchelli, 2017).

One of the early studies on editorial practices identified favoritism to friends and personal associates as one of the least ethical practices (Sherrel et al., 1989). A latter study showed that almost 25% of articles published by 28 top economic journals in 1984 were characterized by an author–editor connection that may have been through a degree-granting institution or by current affiliation (Laband & Piette, 1994). A subsequent study on economy journals (Colussi, 2015) established that researchers from the same institution as the editor tend to increase the number of published articles by approximately one article per year. Similarly, a study showed that law journals publish more articles from members from their own institutions than from faculty affiliated with other law schools (Yoon, 2013). In a seminal work, Reingerwertz and Lutmar (2018) not only established the existence of academic bias in four leading international relations journals during the years 2000–2015 but also showed that these manuscripts received significantly fewer citations.

Because all of these studies have been performed using journals mainly from Europe and North America, it became of interest to determine whether this academic in-group bias was a usual practice in Latin American journals. Thus, this study aims to establish the extent to which journals managed by universities publish manuscripts from researchers belonging to the same institution and compare with those manuscripts written by researchers from other institutions. To achieve this, all the documents published between 2008 and 2015 among 81 journals from five Latin American countries were analyzed.

Method

An initial query was made on Journal Citation Reports 2015 to establish all the Latin American journals indexed. This search resulted in 247 journals from Argentina, Brazil, Chile, Colombia, Costa Rica, Ecuador, Mexico, Uruguay, and Venezuela. All journals were evaluated to determine their publisher, selecting only journals that were managed by universities. In total, 84 journals were identified. However, *Boletin de la Sociedad Geologica Mexicana* (from Mexico) was excluded because it was indexed by Web of Science from 2012 onward. Furthermore, the journals *Revista de Biologia Tropical* (from Costa Rica) and *Revista Cientifica–Facultad de Ciencias Veterinarias* (from Venezuela) were not considered in this study because they were the only academically managed journals from each country. This exclusion was made due to the fact that very small samples would undermine the validity of study. Thus, 81 journals were used for this study: four from Argentina, 32 from Brazil, 22 from Chile, nine from Colombia, and 14 from Mexico.

To analyze the journals managed by universities, the following variables were selected: language of publication, total number of documents published by the journal, number of documents published by researchers from the same country, number of documents published by researchers from the same institution (intramural documents), number of documents published by researchers from other institutions (extramural documents), citations received by intramural documents, citations received by extramural documents, average citations per intramural document and average citations per extramural document.

Results

Table 1 summarizes the total number of documents published by each journal managed by a university and the total number of documents published by researchers from the same country and institution as the editorial management team. The data indicates that for 56 journals (two from Argentina, six from Colombia, 31 from Brazil, 10 from Chile, and seven from Mexico), more than 50% of their documents were authored by researchers from the same country as the journal. It is worth noting that Brazilian journals exhibited the highest ratio of documents published by local researchers, ranging from 74.7% (for *Journal of Applied Oral Science*) to 99.2% (*Ciencia Rural*). On the contrary, only three journals (*Journal of Applied Economics*, *Latin American Journal of Solids and Structures*, and *Electronic Journal of Biotechnology*) published less than 20% of documents written by authors from the same country.

More interesting results arise when the proportion of documents that were authored by researchers affiliated to the same institution that managed the journal was established. The majority (55.6%) of these journals accepted and published intramural manuscripts well above the 20% threshold. Whereas Argentinian journals were more compliant to the rule (only one journal exceeded the 20% threshold), 56% of Brazilian journals were not compliant, as well as 44% of Colombian journals, 50% of Chilean journals, and 71% of Mexican journals. In fact, five journals (*Caldasia*, *Medicina Veterinaria Recife*, *Geofisica Internacional*, *Revista Mexicana de Astronomia y Astrofisica*, *Veterinaria Mexico*) published more than 50% of intramural manuscripts during the period assessed. It is worth noticing that only one journal, *Journal of Applied Economics* (from Argentina), did not publish any manuscripts from researchers that belonged to the same university.

Considering the possibility that researchers might be publishing in their local language due to a language barrier, the language of publications of the journals that exceeded the 20% threshold of intramural documents was determined. As Table 2 depicts, 18 of the 45 journals from Argentina, Colombia, Chile, and Mexico published more than 50% of their documents in Spanish. In the case of Brazilian journals, 12 used Portuguese as the main language of publication. The other 15 journals published more than 50% of their documents in English. An interesting finding was that three of these journals (*Archives of Clinical Psychiatry*, *Geofisica Internacional*, and *Revista Mexicana de Astronomia y Astrofisica*) published more than 50% of intramural manuscripts.

Table 1. *Latin American Journals Indexed by Journal Citation Reports 2015 Managed by Universities Analyzed in This Study*

		Documents				
			Same country		Same institution	
Source title	ISSN	Total, *N*	*n*	%	*n*	%
Argentina						
Revista de la Facultad de Ciencias Agrarias	1853-8665	293	211	72.0%	79	27.0%
Intersecciones en Antropologia	1850-373X	296	249	84.1%	3	1.0%
Journal of Applied Economics	1514-0326	130	13	10.0%	0	0.0%
Salud Colectiva	1851-8265	265	109	41.1%	15	5.7%
Colombia						
Revista Colombiana de Ciencias Pecuarias	0120-0690	380	243	63.9%	132	34.7%
Earth Sciences Research Journal	1794-6190	145	30	20.7%	16	11.0%
Ingenieria e Investigacion	0120-5609	493	384	77.9%	238	48.3%
Caldasia	0366-5232	247	203	82.2%	132	53.4%
Universitas Psychologica	1657-9267	789	175	22.2%	71	9.0%
Revista MVZ Cordoba	0122-0268	435	292	67.1%	81	18.6%
Revista de Estudios Sociales	0123-885X	401	205	51.1%	114	28.4%
Cuadernos de Desarrollo Rural	0122-1450	150	42	28.0%	20	13.3%
Historia Critica	0121-1617	348	178	51.1%	70	20.1%
Brazil						
Acta Scientarum-Agronomy	1807-8621	641	627	97.8%	69	10.8%
Revista de Saude Publica	0034-8910	1,195	1,069	89.5%	309	25.9%
Journal of Applied Oral Science	1678-7757	813	607	74.7%	304	37.4%
Scientia Agricola	0103-9016	685	567	82.8%	204	29.8%
Revista da Sociedade Brasileira de Medicina Tropical	0037-8682	1,529	1,395	91.2%	77	5.0%
Crop Breeding and Applied Biotechnology	1984-7033	435	398	91.5%	71	16.3%
Neotropical Ichthyology	1679-6225	644	543	84.3%	93	14.4%
Latin American Journal of Solids and Structures	1679-7825	465	82	17.6%	23	4.9%
Materials Research–Ibero-American Journal of Materials	1516-1439	1,212	829	68.4%	96	7.9%
Ciencia e Agrotecnologia	1412-7054	1,155	1,138	98.5%	535	46.3%
Revista Latino-Americana de Enfermagem	1518-8345	1,270	1,113	87.6%	604	47.6%
Zoologia	1984-4670	652	595	91.3%	79	12.1%
Revista Ciencia Agronomica	1806-6690	828	814	98.3%	173	20.9%
Brazilian Journal of Pharmaceutical	1984-8250	687	461	67.1%	117	17.0%

Source title	ISSN	Documents				
			Same country		Same institution	
		Total, *N*	*n*	%	*n*	%
Sciences						
Revista Brasileria de Engenharia Agricola e Ambiental	1807-1929	1,093	1,084	99.2%	58	5.3%
Archives of Clinical Psychiatry	0101-6083	20	17	85.0%	10	50.0%
Revista de Nutricao–Brazilian Journal of Nutrition	1415-5273	573	550	96.0%	4	0.7%
Revista da Escola de Enfermagem da USP	0080-6234	1,465	1,367	93.3%	723	49.4%
Revista Brasileira de Zootecnia–Brazilian Journal of Animal Science	1806-9290	2,041	1,887	92.5%	480	23.5%
Planta Daninha	0100-8358	857	783	91.4%	155	18.1%
Ciencia Rural	0103-8478	3,166	3,141	99.2%	753	23.8%
Acta Scientiarum–Technology	1806-2563	512	454	88.7%	141	27.5%
Revista Arvore	0100-6762	982	915	93.2%	327	33.3%
Acta Paulista de Enfermagem	0103-2100	1,000	954	95.4%	154	15.4%
Cerne	0104-7760	556	548	98.6%	197	35.4%
Semina-Ciencias Agrarias	1676-546x	1,984	1,956	98.6%	418	21.1%
Bioscience Journal	1981-3163	1,344	1,311	97.5%	286	21.3%
Acta Scientiae Veterinariae	1678-0345	785	648	82.5%	293	37.3%
Materia–Rio de Janeiro	1517-7076	457	341	74.6%	28	6.1%
Revista Caatinga	0100-316X	716	707	98.7%	144	20.1%
Medicina Veterinaria Recife	1809-4678	209	206	98.6%	118	56.5%
Custos e Agronegocio On Line	1808-2882	183	119	65.0%	4	2.2%
	Chile					
Acta Bioethica	1726-569X	278	89	32.0%	40	14.4%
Archivos de Medicina Veterinaria	0301-732X	382	175	45.8%	85	22.3%
Boletin Latinoamericano y del Caribe de Plantas Medicinales	0717-7917	464	111	23.9%	34	7.3%
Bosque	0717-9200	268	130	48.5%	51	19.0%
Ciencia e Investigacion Agraria	0718-1620	351	219	62.4%	80	22.8%
Electronic Journal of Biotechnology	0717-3458	536	79	14.7%	37	6.9%
Gayana	0717-6538	188	165	87.8%	77	41.0%
Gayana–Botanica	0717-6643	298	219	73.5%	110	36.9%
Latin American Journal of Aquatic Research	0718-560X	593	272	45.9%	67	11.3%
Maderas–Ciencia y Tecnologia	0718-221X	283	63	22.3%	32	11.3%
Revista de Biologia Marina y Oceanografia	0717-3326	516	267	51.7%	52	10.1%
Revista de la Construccion	0718-915X	220	107	48.6%	65	29.5%

Source title	ISSN	Documents				
			Same country		Same institution	
		Total, *N*	*n*	%	*n*	%
Revista de Geografia Norte Grande	0718-3402	272	145	53.3%	76	27.9%
Chungara–Revista de Antropologia Chilena	0717-7356	345	176	51.0%	70	20.3%
Estudios de Economia	0718-5286	90	48	53.3%	20	22.2%
Estudios Filologicos	0071-1713	191	126	66.0%	56	29.3%
EURE–Revista Latinoamericana de Estudios Urbano Regionales	0250-7161	261	90	34.5%	46	17.6%
Magallania	0718-2244	341	136	39.9%	66	19.4%
Onomazein	0717-1285	258	109	42.2%	40	15.5%
Revista Chilena de Derecho	0718-3437	250	189	75.6%	76	30.4%
Revista de Ciencia Politica	0716-1417	291	96	33.0%	52	17.9%
RLA - Revista de Lingüística Teorica y Aplicada	0718-4883	124	68	54.8%	32	25.8%
Mexico						
Atmosfera	0187-6236	220	86	39.1%	59	26.8%
Geofisica Internacional	0016-7169	242	177	73.1%	136	56.2%
Revista Chapingo Serie Ciencias Forestales y del Ambiente	0186-3231	254	203	79.9%	62	24.4%
Investigacion Bibliotecologica	0187-358X	273	75	27.5%	60	22.0%
Convergencia-Revista de Ciencias Sociales	1405-1435	305	137	44.9%	66	21.6%
Investigacion Economica	0185-1667	194	82	42.3%	39	20.1%
Revista Mexicana de Astronomia y Astrofisica	0185-1101	247	160	64.8%	141	57.1%
Revista Mexicana de Ingenieria Quimica	1665-2738	398	126	31.7%	98	24.6%
Revista Mexicana de Biodiversidad	1870-3453	1041	855	82.1%	469	45.1%
Revista Internacional de Contaminacion Ambiental	0188-4999	304	226	74.3%	47	15.5%
Veterinaria Mexico	0301-5092	180	173	96.1%	109	60.6%
Hidrobiologica	0188-8897	310	273	88.1%	33	10.6%
Papeles de Poblacion	1405-7425	302	146	48.3%	32	10.6%
Andamios	1870-0063	364	179	49.2%	27	7.4%

Note. Data were retrieved from Web of Science for the time period 2008–2015 on January 8, 2019.

Table 2. *Language of Publication for the Latin American Journals Analyzed in This Study That Contained More Than 20% of Intramural Documents*

Source title	Language, %			
	English	Portuguese	Spanish	Other
Argentina				
Revista de la Facultad de Ciencias Agrarias	14.7	0.0	85.3	0.0
Colombia				
Revista Colombiana de Ciencias Pecuarias	41.3	1.6	57.1	0.0
Ingenieria e Investigacion	66.7	0.0	33.5	0.0
Caldasia	26.7	0.0	73.3	0.0
Revista de Estudios Sociales	5.5	0.5	94.0	0.0
Historia Critica	1.7	0.6	97.4	0.3
Brazil				
Revista de Saude Publica	39.0	60.6	0.4	0.0
Journal of Applied Oral Science	100.0	0.0	0.0	0.0
Scientia Agricola	100.0	0.0	0.0	0.0
Ciencia e Agrotecnologia	29.9	70.0	0.0	0.1
Revista Latino-Americana de Enfermagem	94.5	1.1	4.3	0.1
Revista Ciencia Agronomica	23.4	56.8	19.8	0.0
Archives of Clinical Psychiatry	100.0	0.0	0.0	0.0
Revista da Escola de Enfermagem da USP	75.8	23.5	0.7	0.0
Revista Brasileira de Zootecnia–Brazilian Journal of Animal Science	47.2	52.8	0.0	0.0
Ciencia Rural	18.6	81.3	0.1	0.0
Acta Scientiarum–Technology	68.2	31.8	0.0	0.0
Revista Arvore	10.0	89.0	1.0	0.0
Cerne	26.8	73.0	0.2	0.0
Semina–Ciencias Agrarias	26.6	73.3	0.1	0.0
Bioscience Journal	21.5	78.4	0.0	0.1
Acta Scientiae Veterinariae	47.9	52.1	0.0	0.0
Revista Caatinga	9.6	89.7	0.6	0.1
Medicina Veterinaria Recife	0.0	96.7	3.3	0.0
Chile				
Archivos de Medicina Veterinaria	31.7	0.0	68.3	0.0
Ciencia e Investigacion Agraria	92.6	0.0	7.4	0.0
Gayana	39.9	0.0	58.0	2.1
Gayana–Botanica	35.6	0.0	64.1	0.3
Revista de la Construccion	33.2	0.0	66.8	0.0
Revista de Geografia Norte Grande	2.2	1.5	96.3	0.0
Chungara–Revista de Antropologia Chilena	20.6	0.0	79.4	0.0
Estudios de Economia	62.2	0.0	37.8	0.0

Source title	Language, %			
	English	Portuguese	Spanish	Other
Estudios Filologicos	0.0	0.0	99.5	0.5
Revista Chilena de Derecho	3.2	0.0	96.4	0.4
RLA–Revista de Lingüística Teorica y Aplicada	7.3	1.6	91.1	0.0
Mexico				
Atmosfera	99.5	0.0	0.5	0.0
Geofisica Internacional	100.0	0.0	0.0	0.0
Revista Chapingo Serie Ciencias Forestales y del Ambiente	90.9	0.0	9.1	0.0
Investigacion Bibliotecologica	1.1	0.0	98.9	0.0
Convergencia–Revista de Ciencias Sociales	4.6	1.3	94.1	0.0
Investigacion Economica	1.1	0.0	98.9	0.0
Revista Mexicana de Astronomia y Astrofisica	100.0	0.0	0.0	0.0
Revista Mexicana de Ingenieria Quimica	50.8	0.0	49.2	0.0
Revista Mexicana de Biodiversidad	34.7	0.0	65.3	0.0
Veterinaria Mexico	89.4	0.0	10.6	0.0

Note. Data were retrieved from Web of Science for the time period 2008–2015 on January 10, 2019.

The next question was to determine if the high proportion of intramural documents had an effect on the journal citation rate. To answer this, the intramural documents for each journal were disaggregated and their citations estimated to later compare with those from documents authored by researchers from other institutions. Table 3 shows the ratio of citation counts per document for each of the journals that published more than 20% of intramural manuscripts. The 44 journals were grouped by country to facilitate data interpretation. In the case of the only Argentinian journal (*Revista de la Facultad de Ciencias Agrarias*), the intramural publications were cited 27.7% more often than those authored by researchers from other institutions. Contrarily, we established for two Colombian journals *(Revista Colombiana de Ciencias Pecuarias* and *Ingenieria e Investigacion*) that the publications written by researchers from other institutions were slightly more cited. The rest of the Colombian journals did not display differences in the ratio of citations per document.

Table 3. *Number of Intramural (Intra) and Extramural (Extra) Documents Published by Latin American Journals That contained More Than 20% of Intra Documents: Number of Citations Received by Intra and Extra Documents*

Source title	Documents		Document citations		Average document citations	
	Intra	Extra	Intra	Extra	Intra	Extra
Argentina						
Revista de la Facultad de Ciencias Agrarias	79	214	187	388	2.4	1.8
Colombia						
Revista Colombiana de Ciencias Pecuarias	132	248	139	330	1.1	1.3
Ingenieria e Investigacion	238	255	178	232	0.7	0.9
Caldasia	132	115	272	247	2.1	2.1
Revista de Estudios Sociales	114	287	62	173	0.5	0.6
Historia Critica	70	278	38	178	0.5	0.6
Brazil						
Revista de Saude Publica	309	886	2916	5446	9.4	6.1
Journal of Applied Oral Science	304	509	2243	3981	7.4	7.8
Scientia Agricola	204	481	1835	3032	9.0	6.3
Ciencia e Agrotecnologia	535	620	3359	2531	6.3	4.1
Revista Latino-Americana de Enfermagem	604	666	3194	3040	5.3	4.6
Revista Ciencia Agronomica	173	655	633	2457	3.7	3.8
Archives of Clinical Psychiatry	10	10	16	15	1.6	1.5
Revista da Escola de Enfermagem da USP	723	742	2289	2349	3.2	3.2
Revista Brasileira de Zootecnia–Brazilian Journal of Animal Science	480	1561	2727	6969	5.7	4.5
Ciencia Rural	753	2413	2463	7104	3.3	2.9
Acta Scientiarum–Technology	141	371	257	627	1.8	1.7
Revista Arvore	327	655	1173	2184	3.6	3.3
Cerne	197	359	560	768	2.8	2.1
Semina-Ciencias Agrarias	418	1566	850	2442	2.0	1.6
Bioscience Journal	286	1058	460	1525	1.6	1.4
Acta Scientiae Veterinariae	293	492	302	411	1.0	0.8
Revista Caatinga	144	572	224	891	1.6	1.6
Medicina Veterinaria Recife	118	91	49	10	0.4	0.1

Source title	Documents		Document citations		Average document citations	
	Intra	Extra	Intra	Extra	Intra	Extra
Chile						
Archivos de Medicina Veterinaria	85	297	195	665	2.3	2.2
Ciencia e Investigacion Agraria	80	271	315	732	3.9	2.7
Gayana	77	111	271	250	3.5	2.3
Gayana-Botanica	110	188	305	343	2.8	1.8
Revista de la Construccion	65	155	98	182	1.5	1.2
Revista de Geografia Norte Grande	76	196	100	330	1.3	1.7
Chungara–Revista de Antropologia Chilena	70	275	301	696	4.3	2.5
Estudios de Economia	20	70	51	134	2.6	1.9
Estudios Filologicos	56	135	8	25	0.1	0.2
Revista Chilena de Derecho	76	174	22	49	0.3	0.3
RLA–Revista de Lingüística Teorica y Aplicada	32	92	45	149	1.4	1.6
Mexico						
Atmosfera	59	161	270	862	4.6	5.4
Geofisica Internacional	136	106	485	274	3.6	2.6
Revista Chapingo Serie Ciencias Forestales y del Ambiente	62	192	94	245	1.5	1.3
Investigacion Bibliotecologica	60	213	33	147	0.6	0.7
Convergencia–Revista de Ciencias Sociales	66	239	34	171	0.5	0.7
Investigacion Economica	39	155	24	147	0.6	0.9
Revista Mexicana de Astronomia y Astrofisica	141	106	1178	376	8.4	3.5
Revista Mexicana de Ingenieria Quimica	98	300	392	996	4.0	3.3
Revista Mexicana de Biodiversidad	469	572	2046	1978	4.4	3.5
Veterinaria Mexico	109	71	150	117	1.4	1.6

Note. Data were retrieved from Web of Science for the time period 2008–2015 on January 11, 2019.

Interesting results emerged when Brazilian journals were analyzed. First, the intramural manuscripts published in 12 of the 18 journals received a higher ratio of citations per document than those authored by researchers from other institutions. Surprisingly, two of these journals published almost, if not all, the manuscripts in English (94.5% for *Revista Latino-Americana de Enfermagem* and 100% for *Scientia Agricola*). Secondly, the manuscripts from five of the journals received similar citations per document, independent of the main language of publication (two used English and three used Portuguese). Only one journal (*Journal of Applied Oral Science*) presented a higher ratio of citations per document for manuscripts written by researchers from a different institution.

As for six of the 11 Chilean journals, their intramural manuscripts received a higher ratio of citations per document than their counterparts. Peculiarly, two of these journals (*Ciencia e Investigacion Agraria* and *Estudios de Economia*) published the majority of the manuscripts in English. Likewise, English was the main language used by four other Chilean journals (*Archivos de Medicina Veterinaria*, *Revista de Geografia Norte Grande*, *Estudios Filologicos*, and *Revista Chilena de Derecho*) that received a similar ratio of citations per document, independent from the fact that the author was from the same institution as the journal.

The analysis also revealed that intramural manuscripts published by four Mexican journals (*Revista Mexicana de Astronomia y Astrofisica*, *Revista Mexicana de Ingenieria Quimica*, *Geofisica Internacional*, and *Revista Chapingo Serie Ciencias Forestales*) received a higher ratio of citations per document in comparison to documents authored by researchers from other institutions. Again, it seems that the language barrier was not an issue because two of these journals published all of their documents in English, whereas the other two used English as the main publication language.

Discussion

Just as livestock breeders justify inbreeding on the genetic value of their own stock, some editors may prefer researchers from their own institutions. In fact, Medoff (2003) established that editors of some economic journals used personal ties and institutional connections to simplify the search for high-quality articles. Colussi (2015) suggested that preexisting ties may reduce the cost of communication and increase collaboration, hence improving the quality of the manuscript. For instance, articles authored by former doctoral students of an editor increase citations more than 27% when the same editor is in charge of the journal (Colussi, 2015). Nonetheless, it is important not to generalize because social dynamics are different for each journal. It is important to keep in mind that not all universities offer a doctoral program in the same discipline as the scope of the journal being editorially managed.

One question that might arise is the rationality behind the 20% institutional inbreeding threshold set for scholarly journals by the Spanish Foundation for Science and Technology. Although this value was defined as one of the criteria to assess the quality of scholarly journals, no explanation was provided in the source regarding its origin. After a systematic search of the literature, no studies examining this issue of intramural publication were found. However, various studies investigating journal self-citation rate could provide a plausible explanation for this value. Already in 1963, Garfield and Sher (1963) established that 20% of the citations received by a journal corresponded to journal self-citations. Later studies considered this percentage as the standard during journal assessments (Campanario & Molina, 2009; Krauss, 2007; Tighe et al., 2011). Likewise, Thomson-Reuters (2002) published an essay stating that 82% of the journals listed on the 2002 Journal Citations Report had journal self-citation rates of 20% or less. Perhaps the Spanish Foundation for Science and Technology considered that 20% was a reasonable threshold to avoid the excessive use of Spanish scholarly journals by researchers from the same institution responsible for their editorial management. Clearly, such a behavior would have a confounding effect on the international visibility of Spanish scholarly journals. After all, journals are considered the primary mode of communication and record for scientific

research (Brody et al., 2006). Perhaps some years from now, the 20% threshold will be commonly used as a standard just as the 5% *p* value, which was set almost 100 years ago, is used in statistical analysis (Fisher, 1926).

The results of this study showed that 45 Latin American journals published more than 20% of documents authored by researchers affiliated to the same institution as the editorial management team. Although the most plausible explanation may be a language barrier, one third of the journals published the majority of the documents in English. It is possible that the scope of the journal affects the language of publication. According to the data collected from Journal Citation Reports, the categories of the 30 journals that published mainly in Portuguese or Spanish were the following: agriculture, anthropology, biodiversity and conservation, construction and building technology, forestry, geography, history, information science and library science, law, linguistics, nursing, plant sciences, psychiatry, public/environmental and occupational health, social sciences, sociology, veterinary sciences, and zoology. An analysis of the total publication output between 1996 and 2011 revealed that researchers publishing in Spanish and Portuguese tend to publish their work most in fields related to health sciences, social sciences, and arts and humanities (Van Weijen, 2012). Although some coincidence is observed, other reasons may account for this result.

Another possible explanation may be institutional building (Yoon, 2013). Because the majority of local and global rankings consider institutional research output, it seems logical that institutions may benefit from intramural documents published in their own journals. To corroborate this theory, all the journals' websites were accessed to establish the type of peer review used to evaluate a manuscript. Regrettably, most of the journals do not specify any information about the peer-review process. Undoubtedly, if all the journals indicated whether a double-blinded or an open peer-review process was implemented, this hypothesis could be more clearly tested.

One should also consider the possibility that some of these peer-reviewed journals may be used to convey manuscripts written by doctoral students during their final year of training. Currently, doctoral programs encourage students to publish their research in a peer-reviewed journal as a way of ensuring they have developed logical thinking and the ability to communicate their scientific arguments accordingly (Glew et al., 2014). However, writing a manuscript for publication differs greatly from writing an essay for a university course (Jalongo et al., 2014; Kirkpatrick, 2019). Unfortunately, it is not uncommon for a doctoral student to graduate without having formal training on how to write a manuscript. In this context, mentors have a major influence on what doctoral students learn about the formal and informal rules of their discipline (Barnes et al., 2012). Most mentors contribute in two major aspects: socially, by serving as an interface between the student and the department/faculty, and careerwise, by relating to activities that boost career development Brill et al., 2014). Nevertheless, in research-oriented disciplines, mentors engage in what has been defined as "research mentorship" (Abedin et al., 2012). Among the many skills that these doctoral students need to attain are how to conduct research, how to write proposals to obtain funds, and how to write an article using the results of their research project. Although mentors usually share their advice on how to structure an article and how to choose a suitable journal, the doctoral student may suggest other journals based on their fast publication process. Some Latin American doctoral programs include a "minimum publication requirement" to obtain a doctoral degree, similar to other countries such as China (Li, 2006). Thus, a doctoral student may be driven to submit initially to a journal whose editors are linked to the home university and that is indexed by a global citation database such as Web of Science. Additionally, because this study considered only Latin American universities, a lack of English proficiency among these students can be assumed.

Another aspect that needs to be taken into consideration is the fact that countries such as Brazil and Mexico oblige researchers to form part of a national researchers' registry to apply for research funds, which involves publishing their research findings in indexed journals. In the case of Chile, the National Fund for Scientific and Technological Development not only requires researchers a minimum number of articles published in

journals indexed by Scopus or Web of Science to apply for a research grant, but if the results of an awarded grant are not published in similarly indexed journals, the researcher may be requested a full refund of the allocated funds (Krauskopf, 2018).

Limitations

This study was confined to journals managed by universities from five Latin American countries, so it is possible that the inclusion from journals from North American countries may yield different results. Likewise, it covered an 8-year time period that ended in 2015 to allow enough time for documents to be cited.

Although the results of this study show that the consequences of inbreeding may not seem so detrimental, at least in terms of citations, it is important to consider that citation data could be manipulated through the use of self-citing (Krauskopf, 2013). Unfortunately, the origin of these citations was not available for analysis, so it was impossible to establish self-citation rate for each journal. However, a recent study (Seeber et al., 2019) established that the tendency for researchers to self-cite not only varies among disciplines, but it also relates to their institutional affiliation. On the other hand, some of these journals publish manuscripts that focus on areas of research that are of particular interest to local researchers. For instance, the majority of the articles published by the Brazilian journal *Revista de Saude Publica* relate to public health issues. Lastly, the scope of these journals converges to fields related to life sciences. Perhaps in these fields, the concentration of intramural documents on each of these journals generates a crowding effect that increases their chances of being cited (Yoon, 2013).

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