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## The Internationalization of Psychology Journals in Brazil: A Bibliometric Examination Based on Four Indices<sup>1</sup>

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**Abstract:** There is considerable variability among psychology journals in Brazil, in terms of presence on the international stage. However, research as to why is very scarce. This study empirically examined the relationship between several indices of internationalization and real-world internationalization, among these journals. 661 articles from the top-17 psychology journals in Brazil were coded for: English-language text, editorial board makeup, lead author institution, and article type. Analyses revealed that successful internationalization was associated with: (a) lead author institution from a native English-speaking country; (b) empirical articles; and (c) editorial board members from a native English-speaking country. Use of English-language text was not associated with successful internationalization. These findings suggest that the path to internationalization for psychology journals in Brazil may depend on increased publishing of findings from English-speaking countries; or at the very least: increased collaboration between Brazilian and native English-speaking scholars.

**Keywords:** globalization, scientific journals, psychology, Brazil, bibliometric analysis

## A Internacionalização dos Periódicos de Psicologia no Brasil: Uma Análise Bibliométrica Baseada em Quatro Índices

**Resumo:** Há uma variação considerável na presença internacional entre os periódicos de psicologia no Brasil. No entanto, a investigação a respeito do porquê é muito escassa. Este estudo examinou empiricamente a relação entre vários índices de internacionalização e a internacionalização real entre essas revistas. 661 artigos provenientes das 17 melhores revistas de psicologia foram codificados para: texto em Inglês, composição do conselho editorial, instituição do autor principal e tipo de artigo. As análises revelaram que a internacionalização foi associada a: (a) instituição do autor principal de um país nativo de língua inglesa; (b) artigos empíricos; e (c) membros do conselho editorial nativos de um país de língua inglesa. Não foi encontrada associação entre o uso do texto na língua inglesa e a internacionalização bem sucedida. Estes achados sugerem que o caminho para a internacionalização de periódicos de psicologia no Brasil pode depender do aumento da publicação de resultados de países de língua inglesa; ou, pelo menos, uma maior colaboração entre estudiosos brasileiros e nativos de língua inglesa.

**Palavras-chave:** globalização, periódicos científicos, psicologia, Brasil, análise bibliométrica

## La Internacionalización de las Revistas de Psicología en Brasil: Un Examen Bibliométrico Basado en Cuatro Índices

**Resumen:** Existe una considerable variabilidad en la internacionalización de las revistas de psicología en Brasil, pero la investigación de por qué es muy escasa. Este estudio examinó la relación entre varios índices de internacionalización y la internacionalización real. 661 artículos de las 17 mejores revistas de psicología fueron codificados para: texto en inglés, composición del comité editorial, institución del autor, y el tipo de artículo. Los análisis revelaron que la internacionalización se asoció con: (a) la institución del autor en un país de lengua inglesa; (b) los artículos empíricos; y (c) los miembros de la comité editorial de un país de lengua inglesa. El uso del idioma inglés no se asoció con la internacionalización. Estos hallazgos sugieren que la internacionalización de las revistas de psicología en Brasil podría depender del aumento en la publicación de resultados de los países de lengua inglesa; o al menos una mayor colaboración entre los estudiosos brasileños y los estudiosos nativos de lengua inglesa.

**Palabras clave:** globalización, revistas científicas, psicología, Brasil, análisis bibliométrico

Over the last decade, psychology journals in Brazil have undertaken a commitment to internationalization. Evidence is seen in summary materials (abstracts and titles) and supplementary issues, many of which now appear in English (Fradkin, 2015). Evidence is also seen in the increased presence of Brazilian journals in the international

Scopus database (Gamba, Packer, & Meneghini, 2015). Furthermore, rankings of Brazil's higher-education programs by the Coordination for the Improvement of Higher Education Personnel (CAPES), a federal agency of the Ministry of Education, include internationalization indices as part of their assessments (Menandro, Linhares, Bastos, & Dell'Aglio, 2015). While Brazil has secured in-roads in the lingua-franca market, in psychology Brazil still lags globally. With Brazilian journals in psychology ranked in the 3rd through 5th quintiles internationally (SCImago Journal & Country Rank - <http://www.scimagojr.com/>), there is much work to be done to reach

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developed-nation status.

In 2015, a supplementary issue of *Psicologia: Reflexão e Crítica* (Gomes & Fradkin, 2015a) focused almost exclusively on the internationalization of Brazil's psychology. Raising the quality of Brazil's output in this field and competing in the global market were frequent themes throughout that issue, as they are throughout most Latin American congresses as well. At that time, only one of Brazil's psychology journals (*Psychology & Neuroscience*) had a foothold in the international market, with a recently-formed partnership with the American Psychological Association (APA). Since then, *Psicologia: Reflexão e Crítica* itself, has graduated to the "big leagues," now in partnership with the international publisher Springer (Remor, 2016). With two of Brazil's psychology journals now on the worldwide stage, we ask: What differentiates these journals from the rest?

To address this question, we begin with our conception of internationalization. As internationalization is a latent variable, we must measure it through observable variables, or proxies. As socioeconomic status is measured through income and/or education level (Williams & Collins, 1995); and depression, through attributional style (Hu, Zhang, & Yang, 2015); so internationalization must be measured – but through which variables? When we consult the Scientific Electronic Library Online (SciELO), the bibliographic database that hosts more than 1,200 Iberoamerican scientific journals, we find that scientific director, Rogério Meneghini, provides specific recommendations for the internationalization of emerging-nation journals. Meneghini (2013) recommends: (1) the use of English language; (2) the inclusion of non-Brazilian internationals in the editorial process; and (3) the publishing of work by non-Brazilian authors. As Meneghini's name, along with that of SciELO's Abel Packer, is considered synonymous in many circles with the rising profile of Brazil's scientific journals, we will use his recommendations in this study. In addition, we will include: (4) study style. We now address these variables one-by-one.

As the scientific world communicates in English (Gibbs, 1995), use of English-language text is critical. While there is a place for local language (for addressing regionally-specific health risks, for example), publishing in English is essential (Meneghini & Packer, 2007; Vasconcelos, Sorenson, & Leta, 2007). For emerging nations like Brazil, this prospect can be daunting – the translation, the expense, the standards of the global market – but Brazilians must remember: To disseminate our science, we must publish in English. This is non-negotiable; English is the lingua franca. We now shift focus to the editorial board.

A journal's editorial board reflects its worldliness, its prestige, its vision, and its scope (Bedeian, Van Fleet, & Hyman, 2009). For emerging-nation journals, Meneghini (2013) recommends enrollment of international editors – those with name recognition and track records with successful, lingua-franca journals. He recommends periodic meetings between these parties and the national editorial board; and

predicts their presence will attract higher-grade reviewers for submissions. And the higher-grade reviewers – lingua franca, naturally – will in turn attract higher-grade submissions. This leads us to our next point: the publishing of work by foreign authors.

The publishing of work by foreign authors distinguishes international from emerging-nation journals. Meneghini (2013) reports that less than 15% of the content from journals edited in England, Netherlands, and Switzerland originates from authors inside these countries' borders. By contrast, more than 70% of the content from the BRICS nations (Brazil, Russia, India, China, South Africa) originates from authors inside these countries' borders (Meneghini, 2013). What this sets forth is the hallmark of international research: *knowledge forged from the far reaches of the globe that has an entirety much larger than its parts*. Part of this diversity in country of contribution evolves organically: as the contents of a journal reach a more-diverse and sophisticated audience – at that point, submissions widen, too. But in the meantime: global contributions lead to global readership. We now address the variable: study style.

Generally speaking, psychology journals spread their knowledge through empirical reports and descriptive/summary reports. For the most part, international journals contain a higher percent of empirical reports, and domestic journals a higher percent of descriptive/summary reports (VandenBos & Winkler, 2015). As there is variability in study style among Brazilian journals, we will include this variable in our study. This addition brings our indices to four. As these indices, to date, have not been empirically examined, we will refer to them hereafter as *presumed*. Thus, our presumed indices of internationalization include the three (3) variables from Meneghini (2013), plus the variable study style.

The aim of this study, therefore, was to empirically examine the relationship between the presumed indices of internationalization and real-world internationalization, among the top journals in psychology in Brazil. Based on the weight of findings from past research, we hypothesized that, in relation to Brazilian psychology journals of lower internationalization, Brazilian psychology journals of higher internationalization would have a higher prevalence of: (a) English-language text; (b) editorial board members from native English-speaking countries; (c) lead authors affiliated with institutions in native English-speaking countries; and (d) empirical articles.

## Method

A bibliometric analysis was conducted on the top-ranked Brazilian psychology journals from the year 2015. This analysis assessed the relationship between the presumed indices of internationalization and the journals' status in terms of internationalization.

## Sample

SCImago provides a ranking of scientific journals based on the number of citations received by a journal and the importance or prestige of the journals where such citations came from. Of the 1,044 worldwide psychology journals listed in the 2014 SCImago Journal Ranking (SJR), 17 (1.6%) were included from Brazil. These journals comprised this study's sample. From the output of these journals for the year 2015 (759 articles), 672 research articles were included in the study. Excluded were: editorials, book reviews, interviews, corrections, letters, obituaries, and re-publications of historical works.

## Measures

**English-language text.** English-language text refers to the language of the body of the article, independent of the title and the abstract. Inclusion of English-language text was recorded dichotomously (English/no-English) article-by-article within each issue of each journal for the year. Prevalence of English-language text was calculated separately for each journal in the study:  $n \text{ articles}_{\text{ENGLISH}} \div n \text{ articles}_{\text{TOTAL}}$ .

**Editorial board makeup.** Editorial board makeup articulates the percentage of each journal's editorial board that is affiliated with an institution based in a lingua-franca, i.e., English-speaking, country. These figures included editorial board personnel only, excluding titled editorial staff such as editors, associate editors, assistant editors, copy editors, layout people, and technical personnel. Prevalence of editorial board lingua franca was calculated separately for each journal in the study:  $n \text{ editorial board}_{\text{LINGUA FRANCA}} \div n \text{ editorial board}_{\text{TOTAL}}$ .

**Lead author institution.** Lead author institution differentiates between articles in which the lead author is affiliated with an institution in a lingua-franca, English-speaking, country, and articles in which the lead author is not affiliated with an institution in a lingua-franca country. Lead author institution was recorded dichotomously (lead author lingua franca/no lead author lingua franca) article-by-article within each issue of each journal for the year. Prevalence of lead author lingua franca was calculated separately for each journal in the study:  $n \text{ articles}_{\text{LEAD AUTHOR LINGUA FRANCA}} \div n \text{ articles}_{\text{TOTAL}}$ .

**Study style.** Study style differentiates between articles based on empirical reports vs. articles based on descriptive/summary reports. Inclusion criteria for empirical reports was that the article be data-driven and offer findings of statistical report. Study style was recorded dichotomously (empirical/non-empirical) article-by-article within each issue of each journal for the year. Prevalence of empirical articles was calculated separately for each journal in the study:  $n \text{ articles}_{\text{EMPIRICAL}} \div n \text{ articles}_{\text{TOTAL}}$ .

**Publication house.** Publication house articulates the publishing structure through which the journal disseminates its

work. This information was gathered from each journal's web site and reported dichotomously (international publication house/no international publication house).

## Procedure

**Data collection.** Research articles (e.g., research reports, reviews, and theoretical articles) were included in the study. Non-research articles (e.g., editorials, book reviews, interviews, corrections, letters, obituaries, and re-publication of historical works) were excluded. From a starting pool of 759 articles, 87 non-research articles were excluded resulting in 672 research articles for the sample. Articles were coded for language, lead author institution, and study style. Articles were then scored dichotomously for text language (English or no-English), lead author institution (from lingua franca or non-lingua franca country), and study style (empirical or non-empirical). Information on each journal's publication house and editorial board makeup was gathered from the journal's web site. (Raw data for language and lead author institution available upon request.) As two of the journals were published through international publishing houses, we used the variable publication house (international or Brazilian) to differentiate journals of higher versus lower internationalization status.

**Data analysis.** Analyses were performed using SPSS version 16.0. First, frequencies of the dichotomous variables (English text, lead author institution, study style) were tallied and converted to percentages of each journal's total articles (e.g., English-language text =  $n \text{ articles}_{\text{ENGLISH}} \div n \text{ articles}_{\text{TOTAL}}$ ). Editorial board makeup was converted to percentage for each journal ( $\text{Lingua-franca editorial board} = n \text{ editorial board}_{\text{LINGUA FRANCA}} \div n \text{ editorial board}_{\text{TOTAL}}$ ). The variable publication house was used as a proxy for successful internationalization, thereby defining the two groups for comparison: journals of higher internationalization ( $n = 2$ ) and journals of lower internationalization ( $n = 15$ ). Prior to hypothesis testing, the variables were examined for normality of distribution. The Shapiro-Wilk test revealed non-normality; therefore transformations were attempted. When transformations failed to normalize the data, a nonparametric approach was opted for. The Mann-Whitney  $U$  test was selected. The Mann-Whitney  $U$  test is used frequently when data are non-normally distributed (Bergmann, Ludbrook, & Spooren, 2000), and is effective when working with small samples (Acion, Peterson, Temple, & Arndt, 2006). To test Hypotheses 1-4, significant main effects for English text, editorial board makeup, lead author institution, and study style were separately examined with the Mann-Whitney  $U$  test set at  $p < .05$  two-tailed. In addition, a  $t$ -test was conducted to ascertain differences in the SCImago Journal Ranking (SJR) indicator, between international and Brazilian journals.

## Results

### Descriptive Statistics

As shown in Table 1, all Brazilian journals in our sample rank in the third, fourth, or fifth quintiles internationally, placing them below the international average. On the domestic front, eight of the seventeen journals are currently indexed by the SciELO database, attesting to their presence in the Latin American and Caribbean markets. It should be noted that of the nine journals not indexed by SciELO, two of them recently withdrew from SciELO upon partnership

with international publishing houses (*Psychology & Neuroscience* and *Psicologia: Reflexão e Crítica*). Also shown is the CAPES Qualis indicator, a rating administered by the Brazilian Ministry of Education, which assigns the majority of our journals (14/17) their highest or second highest rating (A1 or A2, respectively). As measured by the SCImago Journal Ranking (SJR) indicator, Figure 1 reveals an impact differential of 26 to 1 between the top-five international psychology journals ( $M = 7.36$ ,  $SD = 1.73$ ) and the top-five Brazilian psychology journals in our sample ( $M = 0.28$ ,  $SD = 0.05$ ),  $t(4.007) = 9.11$ ,  $p = .001$ , two-tailed.

Table 1  
*Descriptive Statistics of the Top Brazilian Psychology Journals*

Rank Brazil	Rank World	Quintile World	Journal	Worldwide (N)	Est.	SJR Rating	Impact Factor	SciELO Inclusion	Qualis Rating <sup>a</sup>	Publication House
(1,044)										
1	611	3 <sup>rd</sup>	Psicologia e Sociedade		1986	0.36	0.16	Yes	A2	Brazil
2	676	4 <sup>th</sup>	Paidéia		1991	0.30	0.30	Yes	A1	Brazil
3	725	4 <sup>th</sup>	Psicologia: Teoria e Pesquisa		1985	0.26	0.23	Yes	A1	Brazil
4	736	4 <sup>th</sup>	Psychology & Neuroscience		2008	0.25	0.58	No <sup>b</sup>	A2	Int'l
5	748	4 <sup>th</sup>	Psicologia: Reflexão e Crítica		1988	0.24	0.27	No <sup>c</sup>	A1	Int'l
6	787	4 <sup>th</sup>	Revista Latinoamericana de Psicopatologia Fundamental		1998	0.22	0.06	Yes	A2	Brazil
7	799	4 <sup>th</sup>	Revista Brasileira de Orientação Profissional		2000	0.21	0.11	No	A2	Brazil
8	800	4 <sup>th</sup>	Psicologia Escolar e Educacional		1996	0.21	0.18	Yes	A2	Brazil
9	894	5 <sup>th</sup>	Psicologia Clínica		1989	0.15	0.08	No <sup>d</sup>	A2	Brazil
10	927	5 <sup>th</sup>	Psicologia USP		1990	0.13	0.14	Yes	A2	Brazil
11	943	5 <sup>th</sup>	Estudos de Psicologia (Natal)		1996	0.13	0.12	Yes	A1	Brazil
12	945	5 <sup>th</sup>	Arquivos Brasileiros de Psicologia		1949	0.13	0.05	No	A2	Brazil
13	953	5 <sup>th</sup>	Psicologia em Estudo		1996	0.12	0.06	No <sup>e</sup>	A1	Brazil
14	961	5 <sup>th</sup>	Ágora: Estudos em Teoria Psicanalítica		1998	0.12	0.04	Yes	A2	Brazil
15	1,012	5 <sup>th</sup>	Revista Brasileira de Neurologia e Psiquiatria		1997	0.10	0.00	No	B4 <sup>f</sup>	Brazil
16	1,034	5 <sup>th</sup>	Revista da Abordagem Gestáltica		1995	0.10	0.02	No	B1	Brazil
17	1,038	5 <sup>th</sup>	Tempo Psicanalítico		1978	0.10	0.00	No	B1	Brazil

*Note.* Most recent rankings by SCImago (for the year 2014); SJR Rating, SCImago Journal Rank indicator; Est., established; Impact Factor, 2014 citations of articles published 2012-13; Int'l, international.

<sup>a</sup>Qualis 2014 Psicologia rating (except when noted).

<sup>b</sup>Indexed in SciELO 2008-2014; withdrawn from SciELO upon partnership with APA in 2015.

<sup>c</sup>Indexed in SciELO 1999-2015; withdrawn from SciELO upon partnership with Springer in 2016.

<sup>d</sup>Indexed in SciELO 2005-2015; indexing interrupted Sept., 2015.

<sup>e</sup>Indexed in SciELO 2000-2014; indexing interrupted Sept., 2015.

<sup>f</sup>Qualis 2014 Medicina I rating.



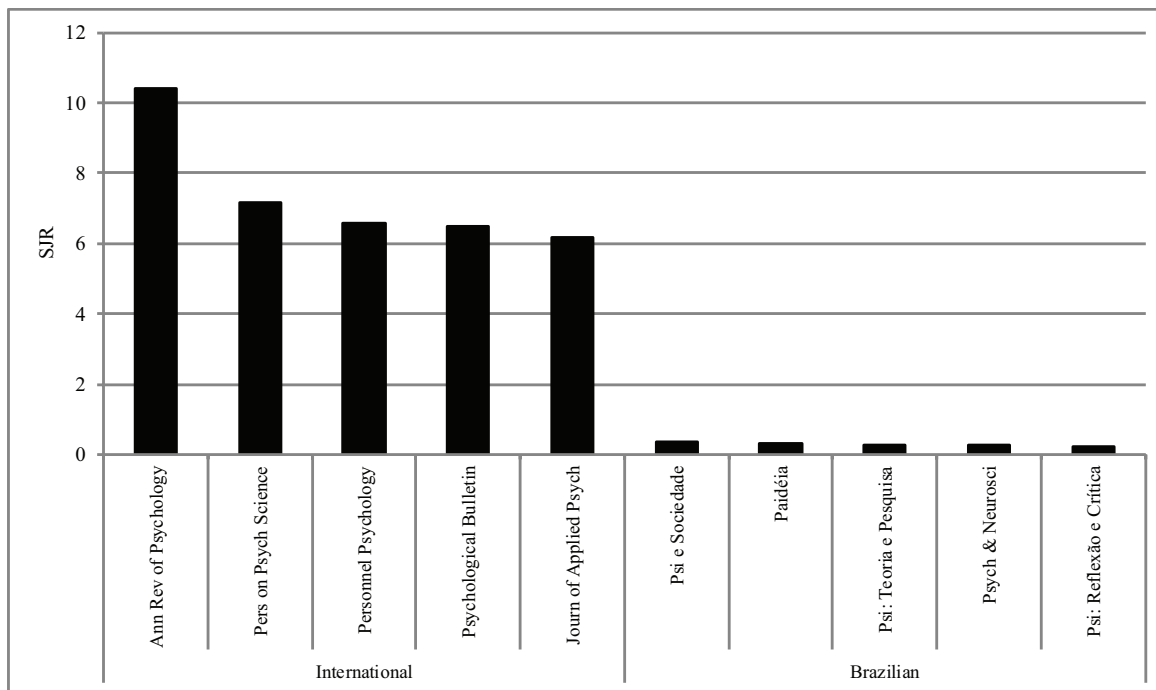


Figure 1. SCImago Journal Ranking (SJR) of highest-ranking international (left) and Brazilian (right) psychology journals. SJR, SCImago Journal Rank Indicator; Ann Rev of Psych, Annual Review of Psychology; Pers on Psych Science, Perspectives on Psychological Science; Journ of Applied Psych, Journal of Applied Psychology; Psi e Sociedade, Psicologia e Sociedade; Paidéia, Paidéia (Ribeirão Preto); Psi: Teoria e Pesquisa, Psicologia: Teoria e Pesquisa (Brasília); Psych & Neurosci, Psychology & Neuroscience; Psi: Reflexão e Crítica, Psicologia: Reflexão e Crítica.

### Between-Groups Differences

Table 2 presents data for the four variables of interest. Hypothesis 1 predicted that there would be a higher prevalence of English-language text among the journals of higher internationalization than among the journals of lower internationalization. A Mann-Whitney test revealed that the prevalence of English-language text was not different between the journals of higher internationalization ( $Mdn = 66.5\%$ ) and the journals of lower internationalization ( $Mdn = 0.0\%$ ),  $U = 3.00$ ,  $p = .058$ . In the absence of a significant main effect, Hypothesis 1 was not supported.

Hypothesis 2 predicted that there would be a higher prevalence of lingua-franca editorial-board members among the journals of higher internationalization than among the journals of lower internationalization. A Mann-Whitney test revealed that the prevalence of lingua-franca editorial-board members was higher among the journals of higher internationalization ( $Mdn = 21.7\%$ ) than among the journals of lower internationalization ( $Mdn = 6.9\%$ ),  $U = 1.50$ ,  $p = .041$ . In the presence of a significant main effect, Hypothesis

2 was supported.

Hypothesis 3 predicted that there would be a higher prevalence of articles with lead authors based at lingua-franca institutions among the journals of higher internationalization than among the journals of lower internationalization. A Mann-Whitney test revealed that the prevalence of articles with lead authors based at lingua-franca institutions was higher among the journals of higher internationalization ( $Mdn = 10.5\%$ ) than among the journals of lower internationalization ( $Mdn = 0.0\%$ ),  $U = 0.00$ ,  $p = .003$ . In the presence of a significant main effect, Hypothesis 3 was supported.

Hypothesis 4 predicted that there would be a higher prevalence of empirical studies among the journals of higher internationalization than among the journals of lower internationalization. A Mann-Whitney test revealed that the prevalence of empirical studies was higher among the journals of higher internationalization ( $Mdn = 89.0\%$ ) than among the journals of lower internationalization ( $Mdn = 16.0\%$ ),  $U = 1.00$ ,  $p = .036$ . In the presence of a significant main effect, Hypothesis 4 was supported.

Table 2  
*Top Brazilian Psychology Journals: 2015*

Journal	Total Docs.	English Text (%)	EB Lingua Franca (%)	LA Lingua (%)	Empirical Studies (%)
Psicologia e Sociedade	63	0.0	6.5	0.0	6.3
Paidéia	39	100.0	10.5	2.6	89.7
Psicologia: Teoria e Pesquisa	59	0.0	13.0	0.0	55.9
Psychology & Neuroscience	41	100.0	30.0	17.1	87.8
Psicologia: Reflexão e Crítica	103	33.0	13.3	3.9	90.3
Revista Latinoamericana de Psicopatologia Fundamental	39	7.7	25.0	2.6	0.0
Revista Brasileira de Orientação Profissional	19	5.3	13.3	0.0	52.6
Psicologia Escolar e Educacional	59	0.0	0.0	0.0	37.3
Psicologia Clínica	25	0.0	0.0	0.0	16.0
Psicologia USP	51	5.9	8.7	0.0	11.8
Estudos de Psicologia (Natal)	23	4.3	0.0	0.0	39.1
Arquivos Brasileiros de Psicologia	31	0.0	12.5	0.0	38.7
Psicologia em Estudo	44	100.0	5.0	0.0	6.8
Ágora: Estudos em Teoria Psicanalítica	18	0.0	6.9	0.0	0.0
Revista Brasileira de Neurologia e Psiquiatria	16	0.0	0.0	0.0	50.0
Revista da Abordagem Gestáltica	18	5.6	8.3	0.0	0.0
Tempo Psicanalítico	24	0.0	0.0	0.0	0.0

*Note.* EB Lingua Franca (%), % editorial board members affiliated with an institution in a lingua franca/English-speaking country; LA Lingua Franca (%), % articles in which lead author is affiliated with an institution in a lingua franca/English-speaking country.

## Discussion

This study is the first we are aware of that empirically examined the relationship between commonly accepted variables of internationalization and internationalization itself, among psychology journals in Brazil. Inconsistent with Hypothesis 1, as well as recent research (Packer, 2016; VandenBos & Winkler, 2015), is the finding that English-language text is not more prevalent among journals of higher internationalization. Consistent with Hypothesis 2 is the finding of a higher prevalence of lingua-franca editorial-board members among journals of higher internationalization. Consistent with Hypothesis 3 is the finding of a higher prevalence of lead authors based at institutions in lingua-franca countries, among journals of higher internationalization. And consistent with Hypothesis 4 is the finding of a higher prevalence of empirical articles among journals of higher internationalization. To some it may appear that the key to internationalizing these journals lies in removing Brazilian input from the journals. We would counter that point though. To do so, we now look at the findings.

With regard to English-language text, emerging nation journals that publish articles in English have the potential to reach the global market. Those journals not publishing in English will never reach the global market, i.e., the science that they publish will be lost. This notion of *lost science* (Gibbs, 1995) drives Brazil and other emerging nations to

increasingly publish articles in English. This trend can be seen in the SciELO database, in which publication of English-language articles has risen from 48% to 62%, from 2011 to 2015 (Packer, 2016). SciELO's goal for the year 2019 is an English-language publication rate of 75% (Packer, 2016). And finally, based on data from the Web of Science (WoS), Gamba et al. (2015) remind us that the 2012/2013 citations for English-language articles were approximately twice those for Portuguese articles (0.72 and 0.36, respectively), published in Brazilian journals of psychology. This last finding highlights the importance of English-language publication in disseminating the science from Brazil.

But just because a journal publishes articles in English, that of itself is not assurance of strong science. In fact, a recent study (Fradkin, 2015) on the translational integrity of summary materials in Brazilian psychology journals found substantial variability in the integrity of such materials. The study also found a significant relationship ( $r = 0.62, p < .001$ ) between the translational integrity of the journal and the overall impression the journal made with native English-language scholars (Fradkin, 2015). This suggests that the simple presence of articles in English is not a guarantee of scientific rigor. This same caveat applies to internationalization: While English is required to reach the lingua-franca market; by itself, it is not sufficient for the task. Thus, what Finding 1 suggests is that Brazil's commitment must go farther, in terms of the quality and readability of its English.

Finding 2, which found a higher prevalence of lingua-franca editorial board members among journals of higher internationalization, is consistent with Meneghini's (2013) recommendations. As is Finding 3, which found a higher prevalence of articles with lead authors based at lingua-franca institutions among those journals of higher internationalization. These findings, however, might court controversy. To some, these findings may suggest that the key to the internationalization of scientific journals in Brazil lies in removing Brazilian input from the journals. That is not the case, however. Rather, the key to internationalizing Brazil's journals entails *supplementing* Brazilian input with lingua-franca expertise. Expertise, in terms of seasoned editors, reviewers, publishers, and authors. Professionals are needed from the lingua-franca world to raise the standards of the journals in Brazil. Assistance is required in: peer-review, editorial decisions, structured abstracts, lingua-franca level English, along with content focus for a global audience. These areas, and more, are summed up by VandenBos and Winkler (2015), in their comparison of differences between regional and international journals. Of the four variables examined, having articles with lead authors based at lingua-franca institutions is statistically the strongest ( $U = 0.00$ ,  $p = .003$ ) of the group, in its relationship with successful internationalization. Hopefully, this finding will encourage Brazilian journals to be more proactive in promoting international collaboration. If for no other reason, the process of collaborating with scholars who speak fluent lingua franca can do nothing but enhance Brazilian lingua-franca language skills.

The significance of Finding 4, which found a higher prevalence of empirical studies among journals of higher internationalization, should provide motivation for non-data-driven scholars to shift their focus, when they can, to design studies methodologically more suited for the global market. While there will always be journals that will publish descriptive/summary reviews, there are many more that will publish data-driven/empirical reports, especially in the lingua-franca market.

In the realm of peer-review, an alternate proxy to consider would be the proportion of international reviewers screening papers at the journal. would be the proportion of international reviewers screening papers at the journal. At present, this information is not regularly disclosed; however, a template can be viewed in an end-of-year assessment for the journal *Psychology & Neuroscience* (Mograbi, 2014). As this variable could be predictive of journal internationalization status and quality of content, we recommend it be examined in the future. And if the variable shows promise, we would further recommend that it be mandated for disclosure for all Brazilian scientific journals; and serve as a criterion for the CAPES Qualis journal ranking. Such policy revision could be promoted by Associação Nacional de Pesquisa e Pós-graduação em Psicologia (ANPEPP) – an organization committed to the betterment of graduate programs in psychology; and one that has a history of facilitating change.

This study, using a sample of the top-ranked Brazilian psychology journals, aimed to empirically examine the relationship between four commonly-presumed indices

of internationalization and the journals' status in terms of internationalization. Although much has been written about the internationalization of Brazil's higher-education programs (Bastos, Tomanari, Trindade, & Andery, 2015; Bianco, Hutz, & Yamamoto, 2015; Menandro et al., 2015) and scientific journals (Gomes & Fradkin, 2015b; Hanes, 2014; Meneghini & Packer, 2007; Packer, 2016), this is the first study we are aware of that has empirically examined these relationships, within a bibliometric format.

Nonetheless, this study may provoke debate about internationalization, as a concept; as a term. In a study such as ours, internationalization refers to a second-tiered science rising to a top-tiered status. Hypothetically, that success might be inferred when the top-five Brazilian journals in our field rank in the 1<sup>st</sup> (top) quintile internationally. However, other scholars might contend that internationalization is achieved when journals publish for a truly global audience, in an assortment of publication languages. Among the journals in our sample, this criterion is met most closely by *Revista Latinoamericana de Psicopatologia Fundamental*, a Brazilian publication that publishes summary materials (titles and abstracts) in Portuguese, Spanish, English, French, German, and Chinese, and texts in an assortment of Portuguese, Spanish, English, and French. This publication, however, has an impact factor of 0.06 (SCImago), which reflects weak dissemination of its findings, in relation to the other journals in our sample (Table 1). Thus, we see that there are two divergent models (lingua-franca vs. multicultural) that use the term internationalization for very different meanings. Moving onward from semantics, we will now discuss the study's limitations.

One limitation of this study was discussed earlier: the non-normality of the data, which precluded parametric analyses. Another limitation was the small size of the groups that we compared ( $n$  higher internationalization = 2;  $n$  lower internationalization = 15). In response to these limitations, we employed the non-parametric Mann-Whitney  $U$  test (Bergmann et al., 2000). We wish to report, however, that the Mann-Whitney findings were consistent with Pearson Product-Moment correlations, which we ran parallel to the analyses reported here.

Another limitation – or challenge, if you will – was the operationalization of study styles. While we used *empirical* and *non-empirical* to distinguish the two styles, some may take issue with our terminology. While we acknowledge that we could have been more specific in our choice (e.g., *data-driven* and *non-data-driven*), we chose *empirical* because the term is used more commonly in science. With regard to these descriptives, future studies might consider slightly different operationalizations of this variable when designing their methodologies.

A further limitation concerns directionality. We should ask ourselves, for example, with regard to Finding 4: “Does higher internationalization lead to greater publication of empirical papers?” or “Do journals publishing a higher proportion of empirical papers offer a more attractive business model to international publishing houses?” The reader must be wary; they must be circumspect; they must move slowly in assumptions of causality.



A final limitation worth mentioning would be the generalizability of our findings. As this study was specific to Brazilian journals of psychology, its findings best apply within that purview. While aspects of our methods could certainly be used in further studies on the internationalization of emerging-nation journals – of different nations, different disciplines, for example – we by no means present these findings as a template, ready-made, to solve the challenges of emerging-nation journals. We present these data and these findings as they pertain to psychology journals in Brazil – at this point in Brazil's history and her growth. And methodologically: as this study is cross-sectional in nature, causality cannot be inferred. And, finally, as this study is a snapshot of one year's worth of issues, we should refrain from projecting outcomes for the future.

Nonetheless, there are implications in this study; and bits of our report propel us forward. If for nothing else, this study offers an empirical evaluation of Meneghini (2013) and SciELO's (Packer, 2016) ideas on internationalization, as they pertain to emerging-nation journals. In this aspect, the study confirms several of their ideas (lingua-franca editorial board; lead author lingua-franca institution) as extremely viable; and concludes that one (English-language text) must be refined and more thought out. So, as to the presumed nature of these indices of internationalization, we are happy to report that they are viable foundations we can build from. And building from foundation is what scientific research is. As to the implementation of these variables tied to internationalization, we must be cautious in our assumptions of direction. We must remember that modifying editorial-board makeup to majority lingua-franca membership will not, in and of itself, bring a Springer or a Wiley to the table. And more importantly: that modified editorial-board makeup, in and of itself, will not magically increase our quality of science. We might be more astute in seeing that a higher quality of science would be more likely to attract seasoned lingua-franca scholars – to serve advisorships on editorial boards. And the same sensibility might increase submissions from lead authors from lingua-franca institutions. And in this cycle, our journals spread their wings; and what was once earth-bound, now will fly. As the young bird leaves its nest, so our science finds its wings; and through this process, science is evolving.

This is not to say that Brazilian journals should not strive to internationalize; they should. In fact, these variables we examined could serve as starting points. Starting points to spread the knowledge that the journal is professing; to upgrade its quality and worldliness; and to diversify its science through global authorship – these starting points can serve as a beginning. The good news is that, to many lingua-franca scholars, Brazilian science is very much an unknown factor. Thus, through the internationalization of her science, Brazil can make a clean and fresh impression to a world of scholars in the waiting.

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