



International business research output and rankings of Asia-Pacific universities: A 40-year time-series analysis

Rachida Aïssaoui¹ · Michael J. Geringer¹

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Abstract This study measures and ranks the performance of countries and academic institutions based on a 40-year analysis of publications appearing in 14 leading business and management journals. The focus is on the evolution of Asia-Pacific institutions in international business research output during this period. In addition, an examination is performed to identify factors associated with Asia-Pacific institutions that have achieved the highest rankings. This research shows that the Journal of International Business Studies and the Journal of World Business were central in spreading international business research, as well as in supporting research by authors from the Asia-Pacific region. Further, schools such as Harvard, Wharton, and University of South Carolina have maintained the highest ranks in research output throughout the 40-year period, but recent years have witnessed the emergence of the Chinese University of Hong Kong and University of Hong Kong, among others, in those top ranks.

Keywords Institutional research output · Ranking · International business · Asia-Pacific · Leading journals

Economic globalization represents one of the most prominent trends of the past 50 years. To promote international competitiveness and economic prosperity in the face of this transformative globalization process, nations are competing to develop and exploit human capital with leading-edge knowledge in order to encourage corresponding innovative outcomes. Numerous studies have suggested that a country's innovative capacity, absorption of new technologies, and economic growth and prosperity are

✉ Rachida Aïssaoui
aissaoui@ohio.edu

Michael J. Geringer
geringer@ohio.edu

¹ Department of Management, College of Business, Ohio University, Athens, OH 45701, USA

enhanced by education and its ability to improve the quality of a nation's human capital (e.g., Cohn & Addison, 1998; Hanushek & Woessmann, 2008; McMahon, 1999; Schultz, 1961). Faculty members at research universities are an important element of such efforts, as they occupy a recognized place in the creation, refinement, and transfer of knowledge (Markkula & Kune, 2015). Indeed, success in fostering a vibrant university system can enhance a nation's or region's ability to attract and retain leading scholars, students, and research programs (Birx, Anderson-Fletcher, & Whitney, 2013). In this way, universities can contribute to the development of internationally competitive knowledge and innovation clusters, both within specialized areas of expertise as well as more broadly (e.g., Bramwell & Wolfe, 2008; Leih & Teece, 2016). Business schools are a key element in generating and transferring new knowledge and thereby enhancing the development of human capital and associated economic development (Rynes, Bartunek, & Daft, 2001).

With increasing internationalization of markets and competition, international business (IB) has become an increasingly important managerial issue. Although a relatively young and cross-disciplinary area of enquiry, IB has begun to mature into a more competitive field of study (Aharoni & Brock, 2010; Shenkar, 2004), one "at a watershed in its evolution" (Dunning, 2008: 247). Recognition of the importance of IB knowledge and skills has been widespread among academic institutions, which have undertaken continued efforts to internationalize teaching and research. Indeed, the Association to Advance Collegiate Schools of Business (AACSB), a leading organization involved with the accreditation of business schools worldwide, argues that globalization may be the most fundamental challenge impacting contemporary business education (AACSB, 2011). Consistent with the AACSB's call for a fundamental reconsideration of the role of IB within university business schools, examination of the emergence and growth of leading educational institutions associated with globalization-related disciplines is essential.

One means of assessing contributions to the development of the field of IB, and to changes in relative ranking of various institutions in promoting IB research, is through evaluation of research output of authors affiliated with these institutions. Publications, particularly peer-reviewed articles in leading journals, play an important role in advancing the body of academic knowledge and in facilitating advancement in management practice (Ahlstrom, 2010). Publications thus represent an important consideration in evaluation of scholars and institutions with respect to hiring, promotion, tenure, compensation, accreditation of schools, and reputation and ranking of institutions, *inter alia* (Adler & Harzing, 2009; Chan, Fung, & Leung, 2006; Jin, 2009a, 2009b; Jin & Hong, 2008; Kumar & Kundu, 2004; Lahiri & Kumar, 2012; Usdiken, 2014). Examination of institutional research output may assist current or future scholars in decisions regarding where to pursue graduate education or subsequent employment, both specifically in IB and in affiliated disciplines, as well as helping to identify human capital clusters associated with research output. Such analysis may yield valuable insights into key institutional sources of contributions to development of the field of IB, identify important trends, and provide information useful to university administrators and other public or private sector stakeholders in evaluating prior and future allocation of resources (Tuselmann, Sinkovics, & Pishchulov, 2016).

In response to these calls for internationalization of research and teaching, there have been several efforts aimed at identifying important contributions to the evolution of IB as a focus of academic inquiry. Such analyses seem appropriate, given the increased

emphasis on evaluation of teaching and research in IB (e.g., AACSB, 2011) as well as in management as a whole. Those studies look at rankings of institutions and scholars and they have become instrumental for students and faculty as they select a school, as well as for administrators in their resource allocation decisions. Various recent studies reveal the increased role of non-American institutions and scholars (Chan et al., 2006; Morrison & Inkpen, 1991), in particular the rising role of Asia-Pacific institutions, in both management research overall and IB research in particular (Ahlstrom, 2010; Bruton & Lau, 2008; Mudambi, Peng, & Weng, 2008). For instance, Jin (2009a) and Jin and Hong (2008) showed how Asian institutions have not only increased their rankings in the field of economics, they are also at par with major American universities.

Despite this, there has not previously been an in-depth examination of how internationalization of IB-related research has evolved, including the associated development of high performing educational institutions in the Asia-Pacific region, and little is known about factors facilitating this trend. The general absence of studies based on institutional research output and focusing on the Asia-Pacific region is regrettable given the growing importance of this region in world economies as well as in IB research (Jin, 2009b; Kothari & Lahiri, 2012; Lahiri & Kumar, 2012). In addition, the growing importance of scholarly publication for both faculty members and their institutions ensures that there will be sustained interest in this subject, particularly within the Asia-Pacific region (Chan et al., 2006; Mangematin & Baden-Fuller, 2008). In addition, uncovering factors associated with the internationalization of IB research in the Asia-Pacific region and the emergence of educational institutions with high IB-related research output may provide insights of value to other regions and institutions.

This study's purpose is to offer an examination of the evolution of the role of Asia-Pacific institutions in the production and dissemination of IB knowledge and factors that may be associated with the emergence of leading universities in the Asia-Pacific region, based on the IB publications of authors affiliated with each institution. If these questions have been raised to assess the contribution of Asia-Pacific institutions in management research generally (Chan et al., 2006; Mangematin & Baden-Fuller, 2008), there appears to be no prior study focused specifically on a long-term investigation of institutional output in IB research by Asia-Pacific institutions. The current study, a time-series analysis covering a 40-year period from 1970 to 2009, enables tracing of the evolution of the Asia-Pacific region and its institutions from the initial years of IB research. Furthermore, interest in improving understanding of the internationalization of IB research in this region suggests the potential benefits of analyzing these data from both macro and micro perspectives.

After reviewing the limited prior studies on IB-related research output in the Asia-Pacific region, this paper presents and explains the methodology used to collect and analyze the study's data. This paper then focuses on investigating macro-trends, namely how the Asia-Pacific region and its countries have evolved in terms of their contribution to IB research. This paper then provides a micro-perspective aimed at examining Asia-Pacific institutions' IB research output and their evolution therein. Beyond identifying institutions with the highest research output, further in-depth examination is provided to uncover some of the factors associated with these institutions' ranking. This paper concludes with a discussion of implications for institutional- and regional-level initiatives to develop and expand performance in terms of IB-related research

output, along with an examination of potential limitations of the study and suggestions for further research on this topic.

International business research and Asia-Pacific institutions

Articles that rank institutional research output in IB at the global level have identified a subset of Asia-Pacific institutions that rank among the top universities. For example, in their retrospective of research publications in the *Journal of International Management (JIM)*, Kothari and Lahiri (2012) identified 13.81% of the articles published in *JIM* from 1998 to 2010 as having been produced by authors affiliated with Asia-Pacific universities. By contrast, authors affiliated with European institutions contributed 21.95% of the articles that appeared in *JIM* during this period.

There are also studies that deal with institutional research output among Asia-Pacific institutions in publications that cater to other business disciplines like economics (Jin, 2009a; Jin & Hong, 2008), or marketing. Cheng, Chan, and Chan (2003), for example, ranked research output during 1991–2000 in 20 leading marketing journals by 106 institutions from the Asia-Pacific region. They found that out of a total of 6155 marketing articles written by 6419 authors at 516 institutions, 321 authors and 106 universities were from the Asia-Pacific region. Adjusting the results for fractional authorship and page size, Asia-Pacific universities produced 3.84% of all the published pages in the sample journals. The top five Asia-Pacific universities were the University of New South Wales, the National University of Singapore, Hong Kong University of Science and Technology, the University of Auckland, and the University of Western Australia.

Morrison and Inkpen (1991) identified two non-North American (i.e., US and Canada) institutions among the 36 universities with the highest research output in their study of IB research in the period 1980–1989 (i.e., Tel Aviv University and INSEAD). Kumar and Kundu's (2004) ranking of institutions during the period 1991–2000 identified 13 non-US universities among the top 50 institutions for IB, including five from the Asia-Pacific region (i.e., The Chinese University of Hong Kong, University of Hong Kong, Hong Kong University of Science & Technology, Nanyang University of Singapore, and National University of Singapore). Within this time period, the authors found the number of non-US institutions among the top-rated universities expanded from 11 during 1991–1995 to 16 during 1996–2000.

Chan et al. (2006) found that the share of North American (US and Canada) institutions in total publications in four leading journals during the ten years from 1995 to 2004 was 49.1%, followed by the United Kingdom (12.62%), Hong Kong (5.95%), Sweden (3.62%), and Germany (3.58%). Over time, however, they found that authors from North American institutions dropped from 53.9% of all articles in 1995 to 43.7% in 2004. There was an upward trend in publications by authors from Asia-Pacific institutions (from 10.9% in 1995 to 19.2% in 2004) and European institutions (20.6% in 1995 and 32.6% in 2004). Only two US schools were among the top five institutions (i.e., Michigan State University, University of South Carolina) during the entire period, the three others being non-American (i.e., The Chinese University of Hong Kong, University of Leeds, Copenhagen Business School).

From the preceding review, it is evident that, similar to management research (Chan et al., 2006), the proportion of IB research produced by scholars affiliated with North

American institutions has been declining in recent years. Such a trend has been partly explained by the diffusion of the US model of business schools as it spread through Europe and, more recently, into the Asia-Pacific region (Mangematin & Baden-Fuller, 2008). In addition, as Asia-Pacific institutions began to adopt the citation model widely practiced in North America, this pressure resulted in an increased presence of Asia-Pacific institutions and authors in management research (Leung, 2007; Usdiken, 2014).

To add to this body of knowledge, this study examines IB research published in 14 leading journals over an extended period of time, from 1970 to 2009. This time period witnessed some pivotal developments for IB research. First, 1970 saw the publication of a seminal manuscript on IB research (Nehrt, Truitt, & Wright, 1970) and the launch of the *Journal of International Business Studies*. Second, in the mid-1980s, management journals evidenced a significant increase in the number of published articles from non-North America-based academics (Baden-Fuller & Hwee Ang, 2001). Finally, the 1990s witnessed the emergence of the Asia-Pacific region as a key player in the publication of peer-reviewed IB research. The next section discusses the current study's research methodology.

Research methodology

In this study, Asia-Pacific is defined to include the countries in Central Asia (Armenia, Azerbaijan, Georgia, Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, and Uzbekistan), North East Asia (China, Japan, South Korea, North Korea, Russia, and Mongolia), South Asia (Afghanistan, Bangladesh, Bhutan, India, Iran, Maldives, Nepal, Pakistan, Sri Lanka, and Turkey), South East Asia (Brunei Darussalam, Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand, Timor-Leste, and Vietnam), and the Pacific (Australia, New Caledonia, and New Zealand).

Selection of sample journals and publications

A primary focus of this study is institutional output in terms of research publications in the area of IB. Publication-based output can be evaluated on a number of different dimensions, including output appearing as refereed or non-refereed articles, books, case studies, and monographs, *inter alia*. Although many important scholarly contributions have appeared in other formats, this study focuses on the publication of articles and research notes in peer-reviewed journals. Journals, particularly those viewed as being among the “leading” or “highest quality” in their respective disciplines, typically have stringent standards for publication and high rejection rates, and those articles that are published usually reflect high standards of research scholarship. Publication rates in these leading journals are widely used by researchers, administrators, and others as proxies for assessing the research output of individuals and institutions. In fact, rates of journal publication, particularly for those journals perceived as the most prestigious or highest quality in their disciplines, have been found to be highly correlated with the perceived reputations of institutions, as well as with the pay and promotion of individual faculty members, *inter alia* (e.g., Hazelkorn, 2011; Tuselmann et al., 2016).

Evaluation of journal-based research output of academic institutions requires identification of an appropriate sample of publications, that is, journals of sufficient quality

such that the articles published therein can be considered to generally contain a substantial proportion of the journal-based contributions to a field's literature. Identification of appropriate journals has been acknowledged to be a difficult task across a variety of disciplines (Adler & Harzing, 2009; Lahiri & Kumar, 2012; Mingers & Willmott, 2013; Tuselmann et al., 2016), and even to represent "hotly debated topics" (Mangematin & Baden-Fuller, 2008: 119). In fact, this is even more problematic for young and cross-functional disciplines such as IB, where journal quality is hindered by the lack of systematic evaluation of the field's literature. The rapid proliferation of journals in the field of management in general and IB in particular, as well as the wide variation in quality attributed to these publications, suggested that some restriction in the range of journals to be examined would be appropriate.

Most prior studies examining research output have utilized samples of journals that were chosen in an arbitrary manner, either directly or through the decision regarding which journals to submit to random or convenience samples of "experts" or "members." However, several recent surveys have consistently rated one publication, the *Journal of International Business Studies* (*JIBS*), as the leading journal devoted to the field of IB and expert ratings of journals have been substantiated by objective measures of scholarly influence (e.g., Harzing, 2016; Tuselmann et al., 2016).

Because of the field's relatively young stage of development, its complexity and cross-functional nature, and the tendency of many journals to appeal to audiences of limited size and scope, it was unlikely that all or perhaps even the majority of the most significant recent journal publications in IB have appeared in a single journal and a substantial portion of IB research has been published in journals associated with other disciplines (Chan et al., 2006; Treviño, Mixon, Funk, & Inkpen, 2010). Although only one measure of contribution, citations have been argued to be a valuable objective measure for assessing contributions. Citations, argue Mangematin and Baden-Fuller (2007: 120), better reflect the "democratic" vote of the scientific community." Therefore, all of the journal citations contained in articles and research notes published in the issues of *JIBS* from 1980 to 1991 were counted, and the 14 most highly cited journals from those 12 years were identified.¹ This list of journals included both IB-specific outlets (e.g., *JIBS*, *Journal of World Business*) as well as journals from other specialized disciplines (e.g., *Journal of Finance*, *Journal of Marketing*, *American Economic Review*) and from journals dealing with more general areas of business and management (e.g., *Academy of Management Journal*, *Administrative Science Quarterly*). Although the list included primarily journals of a highly academic nature, they also included journals with a more practitioner orientation (e.g., *Harvard Business Review*, *Sloan Management Review*). While any selection of a subset of journals may be subject to criticism, it is worth noting that the journals used in this study received high rankings from journal rating bodies such as the Australian Business Deans Council (Harzing, 2016), 12 of the 14 included journals appear in the *Financial Times'* list of 50 journals used in ranking global business schools (Ormans, 2016), and a majority of the journals appear on the High Impact 45 list of high impact business- and management-related journals (Linton, 2012). Broadly employed

¹ The decision to include only the top 14 journals was based on the fact that there was a 29% decrease in the number of citations between the fourteenth and fifteenth most-cited journals.

performance metrics such as H-Index and Google Scholar are based in part on journal rankings such as these (Tuselmann et al., 2016).

Due to the wide variety of topics contained in the sample journals, only publications focused explicitly on IB issues were included in this study. These publications were identified using the definition developed by Nehrt et al. (1970: 1–2), which was subsequently reiterated as editorial policy at *JIBS* (e.g., Ricks, 1985). Using this definition, the entire population of articles and research notes published in the 14 sample journals from 1970 through 2009, inclusive, was identified and coded for use in this study. Other journal contents, including case studies, monthly columns, editorials, introductions to special issues, letters to the editor, book reviews and dissertation abstracts, *inter alia*, were excluded from analysis. This resulted in a sample of 4528 articles published by 4624 authors affiliated with 1341 academic and non-academic institutions worldwide. The cumulative frequencies of qualifying publications from each journal are listed in Table 1 for the overall 1970–2009 period.

Calculating authorship appearances: Absolute and adjusted frequencies

Reporting absolute frequencies of appearances by individual authors could result in bias resulting from multiple authorship of many sample publications. Therefore, in addition to absolute frequency of authors' appearances, calculations were made for appearances adjusted for the number of authors. Although some prior studies have given greater credit to the lead author (e.g., Howard, Maxwell, Berra, & Sternitzke, 1985), this study assigned credit proportionally, based on the number of authors. For example, the listed institution of an individual who was sole author was credited with 1.0 point, while the institution of each author in a

Table 1 Citation frequencies of the 14 leading journals in international business research, 1970–2009

	Number of articles	Frequency	Cumulative frequency
Journal of International Business Studies	1,310	28.9%	28.9%
Journal of World Business	1,022	22.6%	51.5%
Management International Review	744	16.4%	67.9%
Harvard Business Review	279	6.2%	74.1%
Strategic Management Journal	272	6.0%	80.1%
California Management Review	204	4.5%	84.6%
Academy of Management Journal	149	3.3%	87.9%
American Economic Review	111	2.5%	90.3%
Sloan Management Review	107	2.4%	92.7%
Journal of Marketing	93	2.1%	94.8%
Journal of Finance	77	1.7%	96.5%
Academy of Management Review	69	1.5%	98.0%
Administrative Science Quarterly	60	1.3%	99.3%
Journal of Marketing Research	31	.7%	100.0%
Total	4,528	100%	

dual-authored paper received .5 points. Credits were assigned separately to different branch campuses of a given university or university system (e.g., appearances for authors from the Los Angeles campus of the University of California system were calculated separately from campuses in Berkeley and San Diego). Due to variations in organizational structures within different institutions, publication credits assigned to business school programs were combined with credits for other academic departments (e.g., economics, psychology, statistics) at the same university.

Results of analyses of institutional research output

To discern trends in institutional research output, two sets of analyses were performed. This section presents results of these two sets of analyses, while the following section provides discussion of the results.

Macro analyses examining evolution of the Asia-Pacific region and its nations

The first assessment involved a macro analysis of the evolution of the Asia-Pacific region as a whole and the individual countries comprising the region, in comparison to similar data from other regions of the world. The share of total publications produced by authors affiliated with institutions from North America, Asia-Pacific, Europe, and other regions are presented in Fig. 1 for the 40 years examined. In addition, the share of total publications produced by authors who received their doctoral training from universities in North America, Asia-Pacific, Europe, and other regions are presented in Fig. 2. These analyses allow the identification of changes in the global production of IB research, with particular emphasis on the changing role of Asia-Pacific institutions.

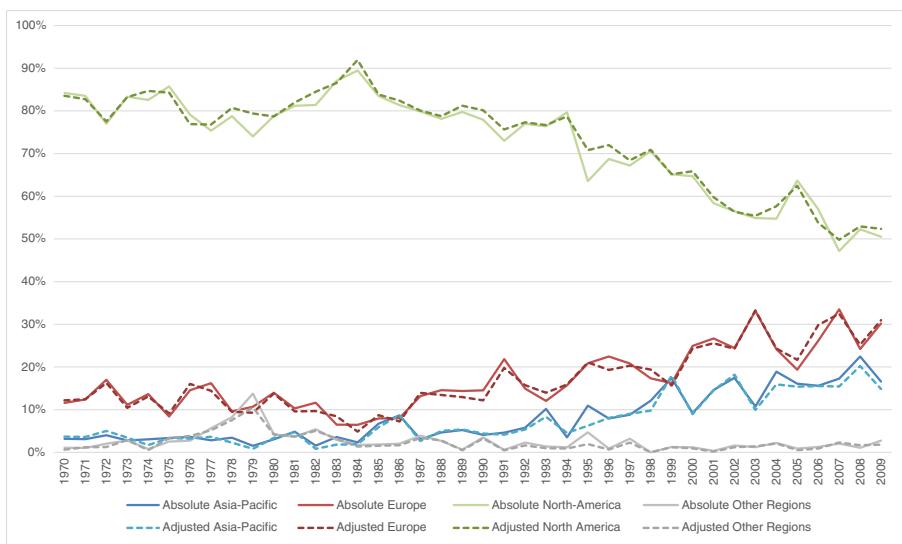


Fig. 1 Share of institutional IB research output by region, 1970–2009. Note: See note in Table 2 on how absolute and adjusted outputs were measured

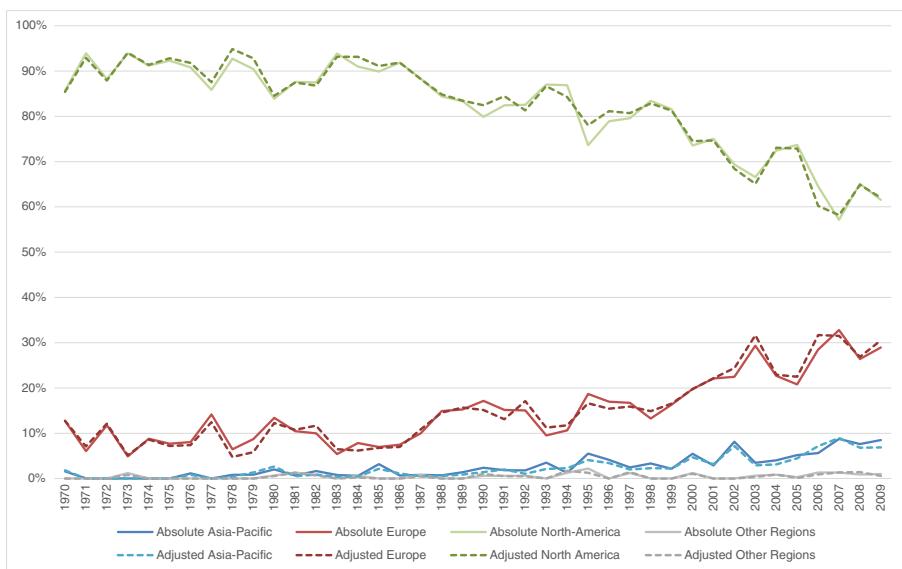


Fig. 2 Share of doctoral IB research output by region, 1970–2009. Note: See note in Table 2 on how absolute and adjusted outputs were measured

Additional evaluation of countries was first based on the research output of each nation's population of universities, and second as centers for producing scholars publishing IB research. These two assessments are presented respectively in Tables 2 and 3. As shown in these tables, there are some differences in the ranking of countries based on absolute versus adjusted measures of IB research output, although most of these were minimal in scope, especially by the 14 highest-ranked nations. The exceptions were declines of 4 ranks by China and Mexico and 3 ranks by Finland and New Zealand, while there were gains of 4 ranks by Switzerland and 3 ranks by India and Poland. In comparison, the differences in ranks were quite limited with respect to the production of doctoral trainees who published IB research, with the largest differences being the decline of three Asia-Pacific nations (4 ranks by China, 3 by Russia, and 2 by Japan) and the increase of 2 ranks by Switzerland. These differences help to highlight the role of co-authored publications in influencing institutional rankings.

Micro analyses examining research output of individual institutions

To supplement the macro analyses of regional and nation-level results, the second set of analyses comprising this study involved a micro perspective to assess research output of individual institutions. Tables 4 and 5 provide a ranking of the 25 institutions with the highest output worldwide for each of the four decades under study. An evaluation of the 25 Asia-Pacific universities with the highest research output was also performed for the overall 40-year period, 1970–2009 (see Table 6).

In addition, in an effort to identify factors that may contribute to the success of Asia-Pacific universities with the highest research output, each institution that appeared at least one time in the Top 25 rankings worldwide for absolute or adjusted output (Tables 4 and 5) was selected for micro-analysis. Therefore, the Chinese University

Table 2 Top countries in IB research output, 1970–2009, with Asia-Pacific countries highlighted^a

	Absolute output		Adjusted output	
	<i>Rank</i>	<i>Score</i>	<i>Rank</i>	<i>Score</i>
USA	1	5166	1	2924.97
UK	2	633	2	307.68
Canada	3	510	3	276.80
Hong Kong	4	250	5	100.91
France	5	195	4	104.32
Australia	6	152	8	64.53
The Netherlands	7	148	6	72.20
Sweden	8	122	9	57.63
Germany	9	121	7	64.94
Israel	10	89	10	47.28
Japan	11	85	11	47.23
Singapore	12	76	13	35.35
South Korea	13	74	14	33.41
Belgium	14	69	15	32.52
China	15	62	19	22.35
Switzerland	16	59	12	38.50
Denmark	17	58	16	29.68
Spain	18	54	18	22.85
Taiwan	19	52	17	23.25
New Zealand	20	37	23	17.42
Finland	21	36	24	15.98
Italy	21	36	20	19.60
Norway	23	33	22	17.48
India	24	31	21	18.45
Austria	25	27	25	12.83
Brazil	26	20	27	8.00
Turkey	27	19	26	8.26
Mexico	28	13	32	3.77
South Africa	29	12	30	5.67
Portugal	30	11	31	4.75
Saudi Arabia	30	11	28	6.92
Poland	32	10	29	6.37

^aCountries with less than 10 appearances were excluded from this analysis

Absolute output was measured by adding all the appearances associated with a particular country. For example, if an article was co-authored by two authors, the first affiliated with a Chinese institution, the second with an Australian institution, this publication received 2.00 points, one for China and one for Australia. Adjusted output counts an article as 1.00, and divides this score by the number of co-authors. Considering our example, both China and Australia get .50 points from this publication

Table 3 Top 25 countries in doctoral training, 1970–2009, measured by number of publication appearances of doctoral trainees, with Asia-Pacific countries highlighted^a

	Absolute output		Adjusted output	
	Rank	Score	Rank	Score
USA	1	5639	1	3083.72
UK	2	651	2	322.90
Canada	3	419	3	202.77
Germany	4	132	4	70.53
The Netherlands	4	132	5	63.68
Sweden	6	120	6	55.57
Australia	7	115	7	52.78
France	8	82	8	43.06
Belgium	9	72	9	35.99
Denmark	10	58	10	31.35
Hong Kong	11	40	12	13.69
Finland	12	35	11	16.23
Spain	13	34	13	13.31
Japan	14	31	16	10.88
New Zealand	15	28	15	11.52
Switzerland	16	23	14	12.19
Russia	17	22	20	7.89
Israel	18	21	17	9.78
Norway	19	19	18	8.67
Austria	20	18	19	8.25
Taiwan	20	18	21	7.70
China	22	15	26	3.85
Italy	22	15	22	7.27
South Africa	24	11	23	5.21
India	25	10	24	4.84

^aCountries with less than 10 appearances were excluded from this analysis

See note in Table 2 on how absolute and adjusted outputs were measured

of Hong Kong, the University of Hong Kong, the City University of Hong Kong, the National University of Singapore, and the University of Melbourne were each examined individually.

Care must be exercised in interpreting the publication track records of academic institutions. Although institutions may influence the skills, interests, and job opportunities of their affiliated authors, research output is likely influenced by a range of factors, including financial, collegial, administrative and other support, along with teaching loads, *inter alia*. Nevertheless, there were distinct differences in research output across institutions and distinct trends evident for several schools. While several North American institutions have remained prominent as likely sources of influence over the development of IB research, Asia-Pacific institutions have evidenced substantial changes in institutional research output ratings during the 1970–2009 time period, as discussed in the following section.

Table 4 Rankings of the 25 first institutions in absolute IB research output, 1970–2009, with Asia-Pacific countries highlighted

Ra nk	1970-2009	Abs outp.	Ra nk	1970-1979	Abs outp.	Ra nk	1980-1989	Abs outp.	Ra nk	1990-1999	Abs outp.	Ra nk	2000-2009	Abs outp.
1	Harvard	251	1	Columbia	74	1	Harvard	53	1	Harvard	71	1	Harvard	75
2	Wharton	160	2	Harvard	52	2	Columbia	52	2	Western Ontario	46	2	Chinese U Hong K	58
3	Columbia	154	3	Wharton	31	3	Wharton	48	3	Wharton	43	3	South Carolina	54
4	South Carolina	151	4	NYU	25	4	South Carolina	45	4	South Carolina	42	3	Univ Hong Kong	54
5	Western Ontario	118	5	Tel Aviv	18	5	Michigan	38	5	Michigan	39	5	INSEAD	50
6	INSEAD	116	6	Georgia State	16	6	NYU	36	6	INSEAD	37	5	Western Ontario	50
7	Michigan	112	7	MIT	15	7	Penn State	25	7	Rutgers	33	7	Copenhagen BS	47
8	NYU	111	8	UC Berkeley	14	8	INSEAD	24	8	Texas Austin	31	8	Leeds	46
9	Rutgers	104	9	UCLA	14	9	McGill	23	9	Michigan State	27	9	Rutgers	44
10	Chinese U Hong K	85	10	Michigan	13	10	MIT	21	9	NYU	27	10	Univ Miami	43
11	Indiana	84	11	Hawaii	12	10	Texas Austin	21	11	UC Berkeley	25	11	Indiana	40
12	Texas Austin	78	12	Kent State	11	12	Northeastern	20	12	Georgetown	23	11	Michigan State	40
13	Michigan State	76	12	Texas Austin	11	12	Rutgers	20	12	Hawaii	23	13	Wharton	38
14	Penn State	70	12	Washington	11	12	Washington	20	14	Dartmouth College	21	14	Northeastern	35
15	Northeastern	69	12	Wisconsin-Madison	11	12	Western Ontario	20	14	Indiana	21	14	Ohio State	35
16	Texas A&M	66	16	McGill	10	16	Southern Illinois	17	16	Texas A&M	20	14	Texas A&M	35
17	MIT	64	16	South Carolina	10	17	CUNY Baruch	15	17	Chinese U Hong K	19	17	City U of Hong Kong	33
18	Univ Hong Kong	64	16	Stanford	10	17	Georgetown	15	17	Columbia	19	18	York	32
19	Ohio State	62	19	Indiana	9	17	Illinois	15	19	Penn State	18	19	London BS	29
20	UC Berkeley	60	19	Penn State	9	17	Southern California	15	19	Toronto	18	19	Oklahoma	29
21	Washington	59	21	Georgia	8	17	Tel Aviv	15	21	Minnesota	17	21	National U Singapore	28
22	Hawaii	57	21	Illinois	8	22	Indiana	14	21	UC Irvine	17	21	Tilburg	28
23	Leeds	55	21	IMD	8	23	Boston	13	23	Oklahoma	16	23	Minnesota	27
24	Univ Miami	53	21	Toledo	8	23	Ohio State	13	23	Thunderbird	16	23	Temple	27
25	Copenhagen BS	52	25	Chicago	7	25	Dalhousie	11	25	MIT	15	25	London King's College	24
	Georgetown	52	25	Rutgers	7	25	Southern Methodist	11	25	North Carolina	15	25	North Carolina	24
		25		Saint Louis	7				25	Stockholm	15			
		25		Saint John's	7				25					
		25		Temple	7				25					

Absolute output was measured by adding all the appearances associated with a particular institution. For example, if an article was co-authored by two authors from two different institutions, each institution received 1.00 point. Adjusted output counts an article as 1.00, and divides this score by the number of co-authors. Considering our example, each institution received .50 points

Discussion: A time-series analysis of Asia-Pacific IB research output

Analysis 1: Regional analysis of the diffusion of IB research to the Asia-Pacific region

To what extent is authorship of IB research dispersed internationally? More specifically, how has the role of the Asia-Pacific region evolved in this domain? To address these

Table 5 Rankings of the 25 first institutions in adjusted IB research output, 1970–2009, with Asia-Pacific countries highlighted

Ra nk	1970-2009	Adj outp.	Ra nk	1970-1979	Adj outp.	Ra nk	1980-1989	Adj outp.	Ra nk	1990-1999	Adj outp.	Ra nk	2000-2009	Adj outp.
1	Harvard	166.5	1	Columbia	62.8	1	Harvard	36.5	1	Harvard	45.1	1	Harvard	40.9
2	Columbia	111.2	2	Harvard	44.0	2	Wharton	34.0	2	Wharton	27.0	2	Univ Miami	29.2
3	Wharton	99.0	3	Wharton	17.7	3	Columbia	31.8	3	Rutgers	21.1	3	South Carolina	25.5
4	South Carolina	73.9	4	NYU	17.0	4	Michigan	22.9	4	South Carolina	20.9	4	INSEAD	25.1
5	Rutgers	68.0	5	UCLA	13.5	5	South Carolina	21.8	5	Western Ontario	20.6	5	Copenhagen BS	23.8
6	NYU	63.7	6	UC Berkeley	12.5	6	NYU	21.2	6	INSEAD	20.0	6	Western Ontario	22.6
7	INSEAD	60.8	7	Tel Aviv	12.0	7	Rutgers	18.5	7	Michigan	16.0	7	Rutgers	22.4
8	Western Ontario	60.4	8	MIT	11.7	8	McGill	16.5	8	UC Berkeley	15.8	8	Univ of Hong K	22.3
9	Michigan	59.9	9	Michigan	11.0	9	Western Ontario	15.2	9	NYU	15.2	9	Wharton	20.3
10	Indiana	42.1	10	Wisconsin-Madison	9.2	10	Penn State	15.0	10	Texas Austin	14.9	10	Chinese U Hong K	19.5
11	Texas Austin	41.4	11	Georgia State	9.1	11	Northeastern	13.3	11	Hawaii	14.3	11	Leeds	18.4
12	UC Berkeley	41.1	12	McGill	8.8	12	INSEAD	13.2	12	Indiana	13.3	12	Northeastern	17.3
13	Northeastern	38.2	13	Kent State	7.8	13	Texas Austin	12.3	13	Columbia	13.3	13	Ohio State	16.5
14	Penn State	38.0	14	Penn State	7.5	14	Southern California	11.9	14	Georgetown	12.8	14	Indiana	15.8
15	MIT	37.1	14	Hawaii	7.5	15	MIT	11.7	15	Michigan State	11.8	15	Tilburg	14.9
16	Univ Miami	36.0	14	Stanford	7.5	16	Georgetown	11.2	16	Oklahoma	10.5	16	London BS	12.9
17	Ohio State	33.7	17	Washington	7.0	17	Southern Illinois	10.5	17	Dartmouth College	10.2	17	Michigan State	12.8
18	Hawaii	33.5	17	IMD	7.0	18	CUNY Baruch	10.3	18	Toronto	10.0	18	Texas A&M	12.4
19	McGill	33.3	19	Texas Austin	6.3	19	Ohio State	10.2	19	UC Irvine	8.8	19	National U Singapore	12.2
20	China U Hong K	31.3	20	Illinois	6.2	20	Illinois	9.5	20	Penn State	8.7	20	York	11.9
21	Georgetown	31.2	21	Rutgers	6.0	21	Boston	9.3	21	Minnesota	8.7	21	Simon Fraser	11.6
22	Michigan State	29.7	21	American U	6.0	22	Washington	9.3	22	Stockholm	8.3	22	Minnesota	11.4
23	Washington	29.4	23	South Carolina	5.7	23	Tel Aviv	8.6	23	MIT	8.0	23	Oklahoma	11.0
24	Tel Aviv	27.2	24	Indiana	5.5	24	Dalhousie	7.5	24	Chinese U Hong K	7.9	24	Melbourne	11.0
25	London BS	26.8	25	Colorado State	5.3	25	Indiana	7.5	25	Texas A&M	7.8	25	George Washington	10.8

See note in Table 4 on how absolute and adjusted outputs were measured

Table 6 The Top 25 Asia-Pacific institutions in IB research output, 1970–2009

University	Nation	Rank	Absolute output	Rank	Adjusted output
Chinese University of Hong Kong	Hong Kong	1	85	1	31.33
University of Hong Kong	Hong Kong	2	64	2	26.09
National University of Singapore	Singapore	3	43	3	18.84
City University of Hong Kong	Hong Kong	4	39	4	12.87
University of Queensland	Australia	5	23	8	9.15
Monash University	Australia	6	20	15	6.35
Hong Kong Polytechnic University	Hong Kong	7	19	7	9.67
University of Melbourne	Australia	7	19	5	12.00
Hong Kong Univ. of Science & Tech	Hong Kong	9	17	16	6.17
University of Sydney	Australia	9	17	11	7.42
Hong Kong Baptist University	Hong Kong	11	16	9	8.75
Nanyang Technological University	China	11	16	6	9.78
University of Auckland	New Zealand	13	15	12	7.08
China-Europe International Business	China	14	14	13	6.75
Korea University	South Korea	15	13	10	7.50
Australian National University	Australia	16	12	17	5.03
Waseda University	Japan	16	12	18	4.65
Yonsei University	South Korea	16	12	14	6.58
Beijing University	China	19	11	20	4.42
Indian Inst. of Mgmt., Bangalore	India	20	10	27	2.93
National Taiwan University	Taiwan	20	10	19	4.50
Seoul National University	South Korea	20	10	25	3.10
Keio Business School	Japan	23	9	23	3.58
University of New South Wales	Australia	23	9	21	4.16
Hitotsubashi University	Japan	25	8	22	3.83
University of Western Sydney	Australia	25	8	28	2.83

See note in Table 4 on how absolute and adjusted outputs were measured

questions, the geographic dispersion of authors across the 1970–2009 period was examined. Although assessment of both absolute and adjusted research output shows a strong correlation between these two measures ($r = .9989$), to mitigate potential bias from a single measure, the discussion will examine results for both measures.

The evolution of Asia-Pacific institutions in IB research

Previous studies have observed the move of management research in general, and of IB research in particular, away from North America (Lahiri & Kumar, 2012; Mangematin & Baden-Fuller, 2008; Usdiken, 2014), noting that the dominance of North American institutions in journal publications is decreasing as the US business school model and “publish or perish” style of scholarship are internationalizing. For instance, Lahiri and Kumar (2012) argued that North American universities are unable to maintain their

position in the Top 10 as they are being outcompeted by non-US institutions. The current study's analysis, which has an advantage from covering the entire lifespan of the first 40 years of the field of IB research post-launch of *JIBS*, extends those findings by showing how Asia-Pacific institutions have evolved in their contribution to IB research. In addition, the current study demonstrates that the nature and extent of the role of Asia-Pacific institutions has been quite impressive, despite delay in the expansion of their role in this domain.

Since the first issue of *JIBS* in 1970, the share of IB research accounted for by authors affiliated with North American institutions has dramatically decreased. In 1970, 84% of the IB research published in the top 14 journals under study came from North American institutions, when measured both by absolute and adjusted output (Fig. 1). By 2009, this proportion had dropped to just 50% in absolute measure, and 52% in adjusted measure. The predominance of North American institutions in IB research peaked in 1984 at over 90% in adjusted value (89% in absolute value), and then diminished slowly; until the late-1980s, authors affiliated with North American institutions still averaged about 80% of the articles. However, in the early 1990s, North American institutions began to lose share, first to European institutions that increased their share to a peak of 22% in absolute value in 1991, and then to Asia-Pacific institutions that witnessed a two-digit share of absolute output for the first time in 1993. This regional shift became more established after the mid-1990s, with authors from North American institutions achieving an 80% share of absolute appearances for the final time in 1994. The following year, North American institutions lost 14 points to European and Asia-Pacific institutions. From this point on, the place of Asia-Pacific institutions in IB research became not only more predominant, but also more permanent. During the last decade examined, the smallest contribution of Asia-Pacific institutions to IB research was 9% in 2000 in both absolute and adjusted values, and authors affiliated with Asia-Pacific institutions contributed up to 22% of all IB research in 2008.



Fig. 3 International business research output by Asian-Pacific countries, 1970–2009

It is worth noting, though, that this trend is not evenly spread across Asia-Pacific nations. Bruton and Lau (2008) investigated the evolution of Asian management research, defined only as management research on Asia, in ten top journals. They found that Asian management research in their sample of journals was overly focused on China, Hong Kong, Taiwan, and Japan, and that while the region is composed of 30 countries, only 14 of those countries were represented. Although this study's findings converge with Bruton and Lau (2008), they also reveal a slightly different trend. Figure 3 provides an individual assessment of each country based on its contribution to IB research within each of the four 10-year periods from 1970 to 2009.

During the first decade, authors were affiliated with Asia-Pacific institutions from only eight countries, accounting for a low 2.5% of the IB publications globally. Of the eight countries, only three were represented by more than a single institution. Two nations, India and Japan, represented more than 60% of the total regional production during the 1970–1979 period. This situation gradually evolved until the last decade, when 15 Asia-Pacific countries were contributing to a total of 15% of the IB research output globally, although Hong Kong and Australia collectively accounted for more than half of this production. The initial leading countries, India and Japan, evidenced strong volatility in their proportion of IB research output over time. Ranked number one in the first decade of this study, with 45% of the region's total research output, India experienced a dramatic drop in the following decade to 7% and subsequently its proportional contribution became marginal. Japan experienced a similar, yet less dramatic, decline. On the other hand, Hong Kong and Australia have been gradually expanding their position, from collectively representing 14% of the region's output in 1970–1979 to 27%, 46%, and 52%, respectively, in the three subsequent decades.

Interestingly, while the BRIC countries (Brazil, Russia, India and China) have been identified as representative of high potential emerging markets, with the exception of Chinese institutions, authors affiliated with institutions in the other BRIC nations in the Asia-Pacific region have had limited representation in IB research (Fig. 3). Russian institutions appeared in a top journal only in the third decade and continue to represent a marginal part of the overall research output. In the last decade, there were authors from only four Russian institutions producing IB research in the 14 top journals examined. As suggested earlier, India's institutions have seen a sharp decrease in their representation within published IB research. In contrast, China has exhibited a strong and sustained increase in presence in IB research in top journals. With a first appearance during the second decade, 1980–1989, Chinese institutions represented 1% of the overall Asia-Pacific output at the time. During the third decade, China's proportion rose to 3%, and then to 8% in the following decade. In sum, research output from the three Asia-Pacific countries forming part of the BRIC grouping appears to be below the espoused interest in and development of those economies (Estrin & Prevezer, 2011; Luo & Tung, 2007; Ralston, Egri, Karam, & Alas, 2015).

Knowledge creation versus knowledge dissemination in the Asia-Pacific region

Two main roles of universities are knowledge creation (research) and knowledge dissemination (teaching), two dimensions along which academic institutions are commonly evaluated (Brouthers, Mudambi, & Reeb, 2005; Mudambi et al., 2008). Understanding the internationalization of IB knowledge production warrants an

examination on both dimensions to better appreciate the “*what* is internationalizing?” dimension. Previous studies have lamented that despite the internationalization of traditionally North American research, such a trend generally perpetuates North American research instead of introducing new paradigms and theories. For instance, Meyer (2006) noted that Asia-Pacific institutions are challenged as they seek to participate in the global production of management research while simultaneously remaining locally relevant (see also Li, Sekiguchi, & Zhou, 2016). Similarly, Bruton and Lau (2008) drew attention to the importance of Asian management research as a means to expand researchers’ theoretical understanding and to shift paradigms, but regret that the rising predominance of Asian management research has not been translated into such a shift. Instead, the authors found that when Asian research represents an increased level of contribution in top management journals, such research generally tends “to be drawn from the same foundations as that of mature economies” (Bruton & Lau, 2008: 642).

The current study does not specifically assess the nature of the theories used in the articles examined. Instead, the evolution of Asia-Pacific research output is compared based on the two dimensions of knowledge creation and dissemination. Knowledge creation is reflected in the IB institutional research output data presented in Fig. 1. Figure 2 aims at assessing knowledge dissemination, reflected in the extent to which institutions, through their doctoral program activities, produce authors who successfully publish IB research in one of the top 14 journals under investigation. When compared, these two assessments provide additional insight into the issue of what is internationalizing. Figure 2 shows that IB research continues to be generated substantially by authors who were trained in a North American institution. While their proportion has gradually decreased between 1970 and 2009, North American institutions were still responsible for the doctoral training of 62% of all authors of IB research in 2009, both in absolute and adjusted measures. In contrast, European institutions provided doctoral training for 29% of the authors, Asia-Pacific institutions trained 9%, and only 1% of the authors who published in 2009 received their doctoral training in institutions from another region.

Interestingly, as Asia-Pacific institutions are establishing themselves collectively as a significant producer of IB research, their role as a training center, while increasing, may be viewed as being in a more preliminary stage of development. During the 1970s, the authors publishing IB research in a top-14 journal were rarely trained in an Asia-Pacific institution (Fig. 2), and it was only in the last decade that authors trained in Asia-Pacific institutions started accounting for more than 5% of the absolute and adjusted appearances in published IB research. Comparatively, European institutions are increasing their share when assessed both in terms of institutional research output based on current affiliation of the author and as a training center for doctoral students who subsequently publish IB research. In 2009, 30% of the absolute appearances came from authors affiliated with European institutions and 29% of the output produced that year came from authors who received their doctoral training at European institutions. In comparison, authors affiliated with Asia-Pacific institutions produced 17% of the research published in 2009, but only 9% of the total output came from authors trained in Asia-Pacific institutions.

This imbalance is further evidenced when examining the ranking of Asia-Pacific countries as training centers compared to their ranking as research centers. Hong

Kong was ranked 4th and 5th in terms of absolute and adjusted output, respectively, of affiliated authors of published research (Table 2). In contrast, as a training center for authors who produced published IB research, Hong Kong ranked only 11th and 12th on absolute and adjusted output, respectively (Table 3). Nine Asia-Pacific countries were ranked among those institutions whose affiliated authors produced 10 or more adjusted publication appearances from 1970 to 2009 (Table 2). As training centers, there are only four Asia-Pacific countries whose doctoral students or graduates accounted for a combined 10 or more adjusted publication appearances during the entire 1970–2009 period (Table 3).

Together, the data show that the Asia-Pacific region as a knowledge creation center was responsible for about 8% of the adjusted number of appearances for the 40-year period examined in this study (Table 7), but less than 4% of the publications were from authors who received their doctoral training in Asia-Pacific institutions (Fig. 2). This finding suggests that even as the Asia-Pacific region is establishing an increasingly important presence in the global production of IB research, the region is still strongly shaped by external influences. This finding may contribute to understanding Bruton and Lau's (2008) finding that Asian management research still struggles with the challenge of introducing a non-Western research perspective. Further review of the data shows a substantial majority of authors affiliated with Asia-Pacific institutions were trained in North America. While this trend is evolving, it may contribute to the increasing presence of Asia-Pacific institutions in the top 14 journals under study. The micro-analysis presented later in this paper develops this particular point. Before that, a ranking analysis to assess the increasing role played by Asia-Pacific institutions in IB research is presented.

Regional versus institutional research output

Another key finding concerns the evolving pattern of Asia-Pacific research output compared to the pattern observed in North America. While Asia-Pacific countries perform well collectively in terms of overall research output, it is much less the case for individual institutions in the region. Table 2 shows that there are, for the entire period 1970–2009, nine Asia-Pacific countries among the Top 25 most productive nations. During the same period, only four Asia-Pacific institutions made the Top 5%, and six the Top 10%, when measuring absolute research output (Table 7). When measured in adjusted output, only two Asia-Pacific institutions made the Top 5%, and five the Top 10%, of highest output institutions. The strong and improving standing of Asia-Pacific countries overall, compared to the still relatively low presence of the region's universities in the top institutions, is essentially due to the high number of Asia-Pacific institutions contributing to IB research. Indeed, for the overall 40-year period, the Asia-Pacific region was represented by an incommensurate proportion of institutions (18.0%) compared to the region's absolute (10.2%) or adjusted (8.3%) research output (Table 7). Conversely, North American institutions represented less than 50% of the population of institutions, but over 67% of the absolute and nearly 71% of the adjusted research output. These statistics suggest IB research in North America is more concentrated than in the Asia-Pacific region, with some North American institutions representing centers of expertise for IB research.

Table 7 Institutional research output in Asia-Pacific versus North America, 1970–2009^a

	1970–2009	Period 1 1970–79	Period 2 1980–89	Period 3 1990–99	Period 4 2000–09
Total number of institutions	883	253	337	439	621
Number of Asia-Pacific institutions	159 (18.0%)	17 (6.7%)	32 (9.5%)	65 (14.8%)	106 (17.1%)
Number of North American institutions	400 (45.3%)	169 (66.8%)	228 (67.7%)	243 (55.4%)	283 (45.6%)
Total absolute research output	7,729	909	1,380	1,930	3,510
Asia-Pacific institutions absolute output	788 (10.2%)	22 (2.4%)	56 (4.1%)	158 (8.2%)	552 (15.7%)
Number of Asia-Pacific institutions in the Top 5%	4	0	0	1	7
Number of Asia-Pacific institutions in the Top 10%	6	0	2	3	13
North American institutions absolute output	5,210 (67.4%)	737 (81.1%)	1,139 (82.5%)	1,387 (71.9%)	1,947 (55.5%)
Total adjusted research output	4,029.27	654.83	872.50	992.41	1,509.52
Asia-Pacific institutions adjusted output	333.88 (8.3%)	15.53 (2.4%)	29.73 (3.4%)	66.48 (6.7%)	222.10 (14.7%)
Number of Asia-Pacific institutions in the Top 5%	2	0	0	1	6
Number of Asia-Pacific institutions in the Top 10%	5	0	0	2	16
North American institutions adjusted output	2,855.86 (70.9%)	537.95 (82.2%)	730.90 (83.8%)	738.01 (74.4%)	849.00 (56.2%)

^a This analysis excludes non-academic institutions

However, historical fragmentation in the production of IB research among Asia-Pacific institutions appears to be waning. Starting in the decade 2000–2009, the proportion of IB research associated with Asia-Pacific institutions was nearly at par with their proportional contribution in terms of overall research output (Table 7). During that period, Asia-Pacific institutions represented 17.1% of the total number of institutions publishing IB research in top journals and 15.7% (14.7%) of the absolute (adjusted) appearances. This situation reflects a sharp reduction in dispersion from the previous period, when Asia-Pacific institutions represented 14.8% of the population of institutions publishing IB research but only 8.2% (6.7%) of the absolute (adjusted) appearances.

Additional analysis confirms that institutions from the Asia-Pacific region have an increasingly important role in the realm of IB knowledge creation, with average research output per institution demonstrating a continuing increase. The number of Asia-Pacific institutions involved in the publication of IB research is not only increasing (Table 7), but the level of publications per institution is also increasing. Figure 4a and b present the average institutional IB research output by region in both absolute (Fig. 4a) and adjusted (Fig. 4b) value.

Figure 4 shows all segments except *Other Regions* are increasing their average absolute level of research output per institution. North American institutions, on average, have gone from an absolute output of 3 appearances in 1970–1974 to 4.5 appearances in the period 2005–2009. Asia-Pacific institutions are catching up with North American institutions in terms of absolute research output per represented institution, reaching 3.9 in 2005–2009. The narrowing of the gap is particularly impressive because, a decade previously in 1995–1999, average absolute output among Asia-Pacific institutions was only 2.2 versus a North American average of 4.1 appearances per institution. In addition, when assessed on this measure of average absolute output, Asia-Pacific institutions have not merely caught up with the performance of European institutions; they have also surpassed the performance of European institutions beginning with the 2000–2004 period.

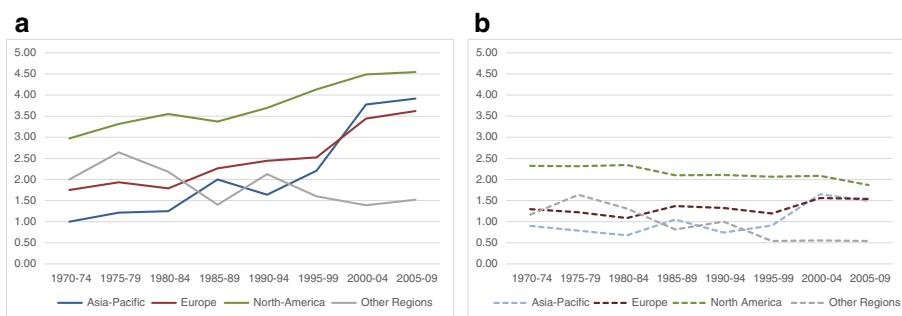


Fig. 4 **a** Average institutional IB research output by region in absolute value, 1970–2009. Note: Absolute output was measured by adding all the appearances associated with a particular country. For example, if an article was co-authored by two authors, the first affiliated with a Chinese institution, the second with a French institution, this publication received 2.00 points, one for Asia-Pacific and one for Europe. **b** Average institutional IB research output by region in adjusted value, 1970–2009. Note: Adjusted output counts an article as 1.00, and divides this score by the number of co-authors. If an article was co-authored by two authors, the first affiliated with a Chinese institution, the second with a French institution, both Asia-Pacific and Europe received .50 points from this publication

When examined through the lens of adjusted output, these trends are confirmed, with a notable exception for the average institutional output among North American institutions. Indeed, North American institutions' average adjusted output has decreased almost half a point, from 2.32 to 1.87. Furthermore, as Asia-Pacific institutions are increasing their average output, in both absolute and adjusted values, they are surpassing European institutions in absolute terms and they are at par on the adjusted output measure. Together, these trends are reflective of four major phenomena. First, as the US scholarly model, "publish or perish," has been expanding outside of the US, pressure to publish is now affecting non-US institutions (Lederman, 2010; Nkomo, 2009). This has led to increased collaboration and even sometimes to the inclusion of fictional co-authors (Benett & Taylor, 2003; Lopaciuk-Goneczaryk, 2016). For instance, Bedeian, Cavazos, Hunt, and Jauch (2010: 720) reported that about 80% of their respondents had "knowledge of instances where faculty have 'inappropriately accepted or assigned authorship credit'." Second, scientific collaboration has increased as a response to increasing professionalization of science (Luukkonen, Persson, & Sivertsen, 1992), with research projects often requiring sophisticated methods or becoming too large for an individual researcher to perform (Lee & Bozeman, 2005). Thus, pressure to publish and the professionalization of science explain the general trend experienced by all four geographic segments, whereby absolute output is increasing faster than adjusted output.

In addition, a third factor affecting those trends relates to the effects of globalization dynamics. With the amelioration of international communications, cross-national collaborations have been growing significantly across management disciplines (Leclerc & Gagné, 1994; Stokols, Harvey, Gress, Fuqua, & Phillips, 2005; Wagner & Leydersdorff, 2005). This study's findings indicate that North American institutions are expanding their scientific cooperation to other regions more than they are expanding their collaborations within North America, which then results in the observed negative correlation between absolute and adjusted output for these institutions. Conversely, the positive correlation between these two measures that was observed in the three other geographic segments, along with the North American negative correlation, seem to indicate that the former are becoming less dependent on the latter for publication in top journals. Together, these regional and country analyses are consistent with previous studies showing the increasing performance of Asia-Pacific institutions in published management research in general, and IB research in particular (Mudambi et al., 2008; Pleggenkuhle-Miles, Aroul, Sun, & Su, 2007). What remains unclear, though, is how such change has taken place and, most notably, how some institutions have emerged as among the most productive in the world within a relatively short time period. These questions are addressed in the following sections of this article.

Analysis 2: Institution-level evaluation and the ascendance of Asia-Pacific institutions into the top 25 highest research output institutions worldwide in IB research

As presented above, Asia-Pacific institutions have achieved an increasingly large role in the production of IB research (Fig. 1). From a share of only 2.4% in 1970–79, authors affiliated with Asia-Pacific institutions have achieved an increasing proportion

of the published research, representing about one out of six appearances between 2000 and 2009, when 15.7% (14.7%) of total absolute (adjusted) appearances during this period were from authors associated with an Asia-Pacific institution (Table 7). This performance is a particularly encouraging achievement for Asia-Pacific institutions, considering it was only in 1978, eight years after the creation of *JIBS*, that the first two authors from Asia-Pacific institutions appeared in articles published in this journal. The first of those institutions was Australian, as Lawrence S. Welch from the Darling Downs Institute of Advanced Education co-authored a paper with colleagues from Sweden (Wiedersheim-Paul, Olson, & Welch, 1978). The second institution was South Korean, as Woo-Young Lee from Sugang University co-authored a paper with a colleague from the US (Lee & Brasch, 1978). No other author affiliated with an Asia-Pacific institution would appear in *JIBS* until 1982.

JIBS, however, would later play a critical role in the dissemination of IB research produced outside of North America. Figure 5 shows that in the early years of *JIBS*, more than 90% of the IB research output published in *JIBS* was associated with North American institutions, compared to less than 80% for the other 13 journals. While the share of North American institutions' IB research output has subsequently diminished, North American institutions are now equally represented in *JIBS* and the other 13 journals, with a share of 58% in 2000–2004 and 53% in 2005–2009. Conversely, while the share of European institutions' output has gradually increased, European institutions are still more represented in the other journals than in *JIBS*. Importantly, this analysis shows that it was essentially in the 1990s that *JIBS* became instrumental for Asia-Pacific institutions, with *JIBS* consistently representing a higher share of the Asia-Pacific institutions' IB research output than the other 13 journals. This trend is similar for institutions from other regions—Africa, Middle East, and Latin America—whose share approximates zero when *JIBS* is excluded from the analysis.

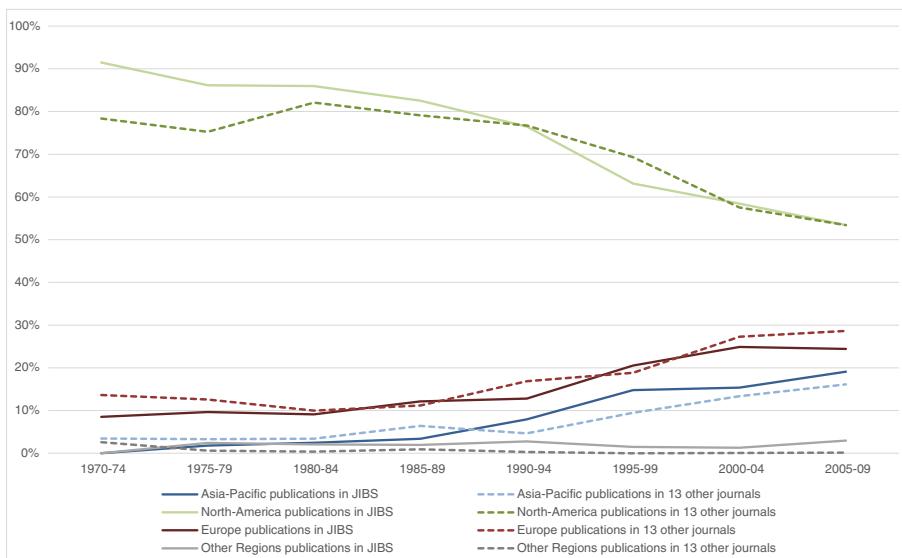


Fig. 5 Institutional IB research output by region in *JIBS* vs. other journals, 1970–2009

Top 25 rankings worldwide of Asia-Pacific institutions

Despite its later emergence as a major producer of published IB research, the Asia-Pacific region hosts some remarkably successful institutions. For instance, although never included in the ranking of the Top 25 highest output institutions in this study's first two decades of analysis, the Chinese University of Hong Kong made an entry into this prestigious ranking at the 17th position in the decade 1990–1999 with 19 appearances (24th for adjusted appearances), and then rose to the second overall position in the decade 2000–2009 with 58 appearances (10th for adjusted appearances) (Tables 4 and 5). Similarly, the University of Hong Kong was absent from the Top 25 ranking in the first three decades examined in this study, but subsequently emerged strongly to capture the third highest position in the last period (8th for adjusted appearances), in a tie with the University of South Carolina. During this last decade, two additional Asia-Pacific institutions entered the Top 25 ranking for absolute appearances: the City University of Hong Kong at the 17th position (not in the Top 25 for adjusted appearances) and the National University of Singapore at the 21st position (19th for adjusted appearances). While the University of Melbourne did not enter the Top 25 for absolute appearances, it did rank 24th for adjusted appearances for the last period.

Assessment of relative research output among Asia-Pacific institutions

Moving from research output assessed on a worldwide basis to an assessment strictly among Asia-Pacific institutions, Table 6 ranks the Top 25 Asia-Pacific institutions based on absolute number of appearances of authors affiliated with each institution. Among the 26 institutions making this ranking, 22 have an absolute output of 10 or more appearances and six institutions achieved 20 or more appearances. This performance diminishes substantially when evaluated on the basis of adjusted output, with only five institutions having 10 or more appearances and only two having 20 or more appearances. As we show in this section, rankings based on absolute output can be substantially different from rankings based on adjusted output. These differences are essentially due to the fact that absolute output assigns one point for each author in a publication, regardless of the number of authors; whereas adjusted output results from dividing one publication by the number of authors associated with this publication.

The predominance of Hong Kong institutions in this table is particularly noteworthy, with five such institutions ranking in the Top 10 highest output Asia-Pacific institutions on both absolute and adjusted bases. The second highest country on research output is Australia, with four Australian institutions making the Top 10 on an absolute basis, but only two ranking in the Top 10 when measured in adjusted output. When comparing ranking based on absolute and adjusted output measures, it is worth noting that Monash University, Hong Kong University of Science and Technology, and the Indian Institute of Management Bangalore display the largest differences in ranking between the two measures, with rankings differences of nine, seven and seven places, respectively. Each of these three universities ranks higher on absolute than on adjusted research output. In contrast, Nanyang Technological University and Korea University both rank five positions higher on adjusted than on absolute output. There is no difference in the rank order of the top four institutions on absolute versus adjusted research output.

Micro-analysis of global top 25 ranked Asia-Pacific institutions

The final set of analyses takes a more micro-analytical approach in order to identify factors that may explain the success of those Asia-Pacific institutions that achieved at least one ranking among the Top 25 institutions worldwide, in terms of absolute or adjusted research output (Tables 4 and 5). Five Asia-Pacific institutions have gained this ranking: The Chinese University of Hong Kong, the University of Hong Kong, the City University of Hong Kong, the National University of Singapore, and the University of Melbourne. Table 8 provides some key characteristics for those institutions. Table 9 provides an assessment of these five institutions' hiring practices relative to authors who published IB research included in this study's sample. More detailed discussion of each of these five universities is presented below.

The **Chinese University of Hong Kong** (CUHK) was the top-ranked institution in the Asia-Pacific region and ranked number 10 globally for the 40-year period examined, with an output of 85 absolute appearances (31.3 adjusted appearances) (Tables 4 and 5). This score is associated with 67 articles involving 40 different CUHK authors. As such, the average number of publication appearances per CUHK author is 1.68. Among these 40 authors, 23—or more than 50%—were trained in one of the 25 highest output institutions worldwide. Table 9 provides a more detailed assessment of the educational background of these authors, revealing that 68% of CUHK authors received their doctoral training from a North American institution and only five (13%) were trained in Hong Kong, a level identical to the proportion of CUHK authors who received doctoral training in UK institutions. In an attempt to assess the extent to which CUHK's research output was concentrated among a small core of researchers, analysis revealed that the five highest output authors affiliated with CUHK were responsible for 33 (39%) of the 85 appearances (Table 8).

University of Hong Kong (UHK) authors appeared 64 times (26.1 adjusted appearances) during the period 1970–2009 (Table 8), ranking 2nd regionally (Table 6) and sharing the 17th position globally with the Massachusetts Institute of Technology

Table 8 Summary data of the five top-ranked Asia-Pacific institutions

	No. of authors	No. of authors with a PhD from a top school ^a	Abs. outp.	Adj. outp.	No. of articles	No. of absolute output articles produced by Top 5 authors
Chinese University of Hong Kong	40	23	85	31.3	67	33
University of Hong Kong	33	17	64	26.1	54	24
National University of Singapore	25	13	43	18.8	33	22
City University of Hong Kong	30	12	39	12.9	31	15
University of Melbourne	13	8	19	12.0	14	11

^a A top school is defined as one that has ranked at least once in the Top 25 in any of the four 10-year periods or during the 40-year period, assessed either on an absolute or adjusted output basis

Absolute output was measured by adding all the appearances associated with a particular country. For example, if an article was co-authored by two authors, the first affiliated with a Chinese institution, the second with an Australian institution, this publication received 2.00 points, one for China and one for Australia. Adjusted output counts an article as 1.00, and divides this score by the number of co-authors. Considering our example, both China and Australia received .50 points from this publication

Table 9 The top-ranked Asia-Pacific institutions' hiring practices, 1970–2009

	No. of authors	Country of institution where doctoral training was received						
		Home country	USA	Australia	New Zealand ^a	Other Asia	UK	Other Non-Asia
Chinese University of Hong Kong	40	5 13%	27 68%	1 3%		2 5%	5 13%	0 0%
University of Hong Kong	33	4 12%	24 73%	1 3%		0 0%	3 9%	1 3%
National University of Singapore	25	1 4%	19 76%	1 4%		0 0%	2 8%	2 8%
City University of Hong Kong	30	6 20%	16 53%	3 10%		1 3%	4 13%	0 0%
University of Melbourne	13	11 85%	1 7%			0 0%	1 7%	0 0%

^a When "home country" does not refer to Australia or New Zealand

See note in Table 8 on how absolute and adjusted outputs were measured

(Tables 4 and 5). Similar to CUHK, over half of the UHK-affiliated authors received their doctoral training in a Top 25 institution (Table 8). Of the 33 authors affiliated with UHK, only four did their doctoral training in Hong Kong while 24 received their doctoral training in North America (Table 9). With 54 articles involving these authors, their average number of appearances per author amounted to 1.64, which is comparable to the average for CUHK-affiliated faculty. Another common characteristic shared by CUHK and UHK relates to the share of appearances developed by the five highest output authors: about 40%, or 24 of the 64 appearances.

The *National University of Singapore* (NUS) ranked 3rd regionally (Table 6) and 35th globally, with an absolute output of 43 appearances (18.8 adjusted appearances). Of note, while highly ranked in the region, NUS does not share the Top 25 ranking with CUHK and UHK for the overall period 1970–2009. However, NUS made the Top 25 ranking in the last decade under study, ranking 21st globally for that time period with 28 total appearances and ranking 17th globally for adjusted appearances (Tables 4 and 5). Another difference with CUHK and UHK relates to the average number of total appearances by author: while CUHK and UHK averaged 1.68 and 1.64 appearances, respectively, the average for NUS-affiliated authors was 1.32. Similar to CUHK and UHK, about half of the authors affiliated with NUS were trained in a top ranked school (13 out of 25; Table 8). NUS' ranking as 35th globally over the 40-year period under study may further be explained by its relatively heavier reliance on its five highest output authors, who were collectively responsible for more than 50% (22 of 43 appearances) of NUS' absolute output (Table 8).

City University of Hong Kong (City UHK) shared many of NUS' characteristics. Ranking number 4 regionally with 39 total appearances and 12.9 adjusted appearances (Tables 6 and 8, City UHK did not earn a spot in the Top 25 worldwide for the overall period, 1970–2009 (rank 43), but its rank of 17th in the period 2000–2009 was higher than

NUS' ranking of 21 (Tables 4 and 5). City UHK's 39 total appearances correspond to 31 articles and were associated with 30 different authors, making an average number of appearances per author of 1.3 (Table 8). The proportion of authors affiliated with City UHK who trained in a Top 25 school was 40% and the share of overall appearances made by the five most productive authors was about 40%. Relative to CUHK, UHK and NUS, City UHK is distinguishable in terms of hiring practices, displaying more diversity in that area. Out of 30 authors affiliated with City UHK, 20% were trained in Hong Kong, 10% in Australia or New Zealand, 13% in the UK, and 53% in North America (Table 9).

The *University of Melbourne*, while absent from the Top 25 ranking on absolute output, ranked 24th in adjusted IB research output for the period 2000–2009 (Table 5). During the 40-year period examined, the University of Melbourne produced 14 articles, which resulted in an absolute output of 19 and an adjusted output of 12.0 (Table 8). Interestingly, when examining the ratio of adjusted output to absolute number of articles, which reflects the extent to which authors from a given institution develop external collaborations, the University of Melbourne's ranking among the Top 25 institutions in adjusted output is the result of a tendency to develop internal instead of external co-authorship. Indeed, while this ratio ranges from 42% for the City University of Hong Kong to 57% for the National University of Singapore, 86% of the University of Melbourne's 14 articles reflected either sole-author publications or intra-institutional collaborations (Table 8). This tendency is also reflected in the institution's hiring practices, as seven of the 13 affiliated authors (54%) were also trained by the University of Melbourne. Eighty-five percent of the authors were trained in Australia, by far the highest score for this hiring practice (Table 9).

Overall, when assessed for the entire 40-year period, 27 institutions worldwide made the Top 25 list based on absolute appearances (Table 4). There were 1071 authors affiliated with these 27 institutions, including 761 (71%) who were trained in a Top 25 school. Thus, although the majority of authors from Asia-Pacific universities who are publishing IB research at the highest rates were trained at Top 25 schools, this practice seems consistent with the average Top 25 school and indeed the Top 5 Asia-Pacific institutions.

Discussion

Contributions

International business has become very important to the economic and social well-being of countries and regions and it is having an increasing impact on the development and delivery of high quality business education (AACSB, 2011; Ahlstrom & Bruton, 2009). As a result, examination of educational institutions at the forefront of the development of IB research has value for a range of stakeholders. Indeed, such institutions are increasingly being held accountable for their performance in the creation and dissemination of knowledge in IB and other globalization-related disciplines (De Zilwa, 2010; Tuselmann et al., 2016). This study represents an effort to enhance the identification and assessment of institutions involved in producing and disseminating IB knowledge, with particular emphasis on institutions in the Asia-

Pacific region. Importantly, as our study focused on examining the evolution of IB research output by Asia-Pacific universities over a 40-year period, we are able to make four contributions in this area.

First, while our findings are consistent with prior studies showing the rising place of non-US institutions in general, and Asia-Pacific institutions in particular, in top-tier publications (Cheng et al., 2003; Jin, 2009a; Jin & Hong, 2008; Lahiri & Kumar, 2012), they further show that it took about four decades for non-US institutions to be at par with US institutions in IB research output. In 1970, 84% (both in absolute and adjusted value) of the IB research published in the 14 leading journals used in this study originated from North American institutions. During the subsequent four decades of this study, the absolute and adjusted number of publications by North American authors continued to increase, decade by decade, as shown in Table 7. Yet, despite an increasing overall volume of production by North American authors over the time period of this study, the proportion of articles accounted for by North American institutions dropped to 50% in 2009 (see Fig. 1), corresponding to an increased share being primarily captured initially by authors affiliated with European institutions and, more recently, by authors from Asia-Pacific institutions.

Second, the nationality of the highest output institutions has diversified over the years, including an increasing number of Asia-Pacific universities and universities from a broader range of nations. Despite this increasing diversity of Asia-Pacific nations being represented among published authors, the initial leading nations of India and Japan have seen a diminished relative role. Correspondingly, Hong Kong and Australia, in particular, have increased their role as important sources of IB research, growing from a combined share of 14% of the Asia-Pacific region's publications in 1970–1979 to 52% in 2000–2009 (see Fig. 3).

Third, at an institutional level of analysis, while the Asia-Pacific region has a relatively low presence among the highest output institutions worldwide for IB research, there are indications that this situation is beginning to change. Indeed, five Asia-Pacific institutions have ascended into the Top 25 highest output institutions worldwide in IB research, an achievement largely driven by recent gains in research output of those institutions. Similarly, the role of each country's institutions as a training center is expanding, resulting in an increasing number of authors who were trained outside of North America, although a majority of such authors still received their doctoral training in North American institutions.

Our study makes a fourth contribution as a micro-analysis of the five most highly ranked Asia-Pacific institutions (i.e., The Chinese University of Hong Kong, University of Hong Kong, National University of Singapore, City University of Hong Kong, and University of Melbourne), identifying common factors involved in the success of these institutions. Our findings suggest that successful Asia-Pacific institutions became so in conjunction with hiring authors who had been: (1) trained in a Top 25 university and (2) trained in a North American institution (with the notable exception of University of Melbourne). Jin (2009a) made a similar observation, noting that many Asian institutions hire foreign scholars as a means to improve their rankings and reputation. As Asia-Pacific institutions increase their role as a training center for authors publishing IB research, this condition may evolve too.

Membership in the Top 25 ranking also seems to require each author to appear in an average of close to two published articles. In addition, to earn and maintain

membership in the Top 25 ranking, results suggest that a single institution need not rely exclusively or even primarily on its highest-producing “star” authors to achieve those rankings. Indeed, although absolute rankings were often impacted strongly by a single author’s research output, none of the top five Asia-Pacific institutions had more than one-third of their total publications accounted for by the top five most productive authors, suggesting that ascendance in rankings was associated with a more broad-based group of researchers. These recommendations should be viewed with some caution, though, as the analyzed sample is limited to these five Asia-Pacific institutions.

Together, findings from this study show that, although of less relevance to the most highly ranked institutions, a relatively small increase in number of publications can produce an increase in an institution’s ranking. This suggests that relative ranking can be impacted by the number of faculty actively publishing IB research in the selected journals, either on their own or co-authoring with others, as well as by the relative research output of those faculty themselves. To the extent that an institution seeks to develop or maintain its reputation as a leader in knowledge creation and dissemination, particularly within IB, ranking on this dimension can be enhanced or diminished by the institution’s success in promoting increased publication rates. Among other factors such as research support, teaching loads, or salary-based incentives, efforts to impact publication rates may include the acquisition (or departure) of active researchers or encouragement for faculty to participate in networks of research-active faculty, which can rapidly impact an institution’s average rate of publications.

Limitations and future research

The overall 40-year focus of this study began with 1970, the year that *JIBS* was founded and the seminal Nehrt, Truitt and Wright’s book appeared. This study provides an in-depth, time-series analysis that is unique in the examination of IB research and its evolution over time. Nevertheless, results and rankings reported in this study may be impacted by the choice of time periods, such as the specific 10-year periods used for sub-analyses or the use of periods of time different than 10 years in length. Future studies could assess whether substantial differences would emerge from such modifications of time periods used in analysis. Meta-research may represent an important tool in facilitating improved understanding of the research process and its value to regions and economies (Jin, 2009b). However, this study’s results were able to identify key elements and trends in the emergence and evolution of IB research during the 1970–2009 period, particularly with respect to the growing impact of Asia-Pacific institutions.

The intention is not to imply that the IB-related research output of universities is reflected by journal publication alone. The publication of other research output, such as scholarly books, monographs, chapters, case studies, and publications in non-English language outlets, has undoubtedly served to enhance the reputations of the universities with which their authors were affiliated. For example, especially in the case of individual scholars, it is plausible that the production of books or case studies might be negatively correlated with the production of journal articles.

It is not intended to imply either that this article has arrived at preeminent measures of institutional output. Certainly, there are other highly reputable journals that promote distinction for authors that publish within their pages and that might also serve as an adequate index of output within the realm of IB research. This study used 14 journals that received the highest level of citations over a 12-year period in the leading journal in IB, the *Journal of International Business Studies*. This list of journals included both IB-specialized outlets as well as journals from more general areas of management and from a range of business and economics disciplines, helping to ensure incorporation of a broader scope of potential contributions. Each of these long-established journals has been ranked among the best journals in their respective fields. Nevertheless, some newer IB journals as well as some Asian journals have evidenced increasing recognition for publishing quality IB research, and excluding such journals from consideration in this study could impact results (e.g., Adler & Harzing, 2009; Tuselmann et al., 2016). For instance, while the *Asia Pacific Journal of Management*'s impact factor was approximating 1.0 in 2010 (Ahlstrom, 2010), it was greater than 2.0 by 2015. Future research might incorporate such journals in their analysis, with the results compared to those obtained in this study.

Finally, this study does not attempt to be so presumptuous as to imply that those universities that do not appear on the lists of “high output” institutions are “marginal” or “not suitable for employment or training,” particularly in the area of IB. Certainly, there are ways to assess the quality of academic institutions other than in terms of research and scholastic output, and the data in this study show that rankings of some institutions have varied substantially over time. For example, it is entirely conceivable that the quality of instruction that a graduate student receives is not directly correlated with how prolific his or her professors were in terms of publishing articles. The intention is that the ratings presented in this study, rather than being regarded as an ultimate index of quality, should serve as a gauge for colleges and universities to assess their relative standing vis-à-vis quality journal-level output. Further, it is hoped that this study’s research output ratings will serve as an impetus for improvement for those programs that are dissatisfied with their relative standings and/or trends in those standings.

Conclusion

As noted by Jin (2009a), results of this type of study may help potential “consumers” of IB education, such as graduate students and the institutions that may seek to employ them post-doctorate, to make more intelligent and informed decisions regarding various programs and institutions. These results may also assist university administrators in making judgments regarding allocation of resources and support of programs in general and IB-related programs in particular, as well as providing statistical data to help these administrators and other authorities in assessing the relative success or shortcoming of existing policies.

We further conclude by noting that the authors and institutions ranked in this study have all made substantive contributions to the IB literature during the 1970–2009 period, though evaluation of the relative contributions of particular journal articles is inherently problematic. Publication is only one criterion for assessing the relative

output and quality of institutions and their contribution to the development of IB as a field of academic inquiry. Yet, with few exceptions, the top publishing schools and authors in this study have all been recognized for their excellence in the production of IB research.

Importantly, while various scholars have lamented the dearth of management research building on non-Western theories (Mangematin & Baden-Fuller, 2008; Meyer, 2006), the rising role played by Asia-Pacific institutions in the production of IB research indicates a promising movement towards publishing of indigenous research in management journals (Li et al., 2016), as well as in modifying traditional management theory to better fit the extant conditions in this region (Young, Tsai, Wang, Liu, & Ahlstrom, 2014).

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Rachida Aïssaoui (PhD, University of Memphis) is an Assistant Professor of strategy and international business at Ohio University. Her research focuses on organizational and institutional change, with a special interest in investigating factors affecting cultural change and globalization dynamics. Her work appears in the *Journal of International Management* and *Journal of Change Management*, and has received various awards from the Southern Management Association and the Academy of International Business Southeast.

Michael J. Geringer (PhD, University of Washington) is the O'Bleness Professor of international strategy and Director of Research, College of Business, Ohio University. His research interests have focused on issues of international strategy, joint ventures and alliances, venture creation and nurturance, strategic management of human and other core resources, organizational structure and control. He serves on 12 journal editorial boards, including the *Journal of World Business*, *Journal of International Management*, and *Thunderbird International Business Review*. His work appears in various journals, including the *Strategic Management Journal*, *Academy of Management Journal*, *Journal of Applied Psychology*, *Journal of International Business Studies*, *Thunderbird International Business Review*, *Management International Review*, *Organisational Studies*, *Journal of World Business*, and *Journal of International Management*. His research and teaching have received numerous awards, including University Distinguished Teaching Award and the Decade Award from the *Journal of International Business Studies*.

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