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# A bibliometric analysis of the Base/Bottom of the Pyramid research

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**Abstract.** The concept of the base/bottom of the pyramid (BoP), since its first use in the early 2000s, has been used by researchers and practitioners alike. The past 16 years has witnessed a significant increase in output of published research on the subject. This study aims to analyze the main contributions in this field, using a bibliometric approach. It considers key bibliometric indicators, such as leading authors, journals, institutions, sources, countries, and the most common keywords. A graphical visualization in bibliometric maps has also been developed, using the VOSviewer software. As expected, the results indicate a sharp increase in BoP research over the last 5 years. The most influential research is from the USA, although there has been a considerable wave of production from the global south. The results may be of interest for those hoping to gain an overview of the current state of BoP research.

Keywords: Base of the pyramid, Bottom of the pyramid, BoP, Bibliometrics, Business research, VOS viewer

## 1. Introduction

The concept referred to as base/bottom of the pyramid (BoP) was first used in the early 2000s, by Coimbatore K. Prahalad and Stuart Hart [36], in their seminal work on *The Fortune at the Bottom of the Pyramid*. This publication drew attention to the markets constituted by those living in extreme or relative poverty, who make up about two-thirds of the human population of the planet [6, 14]. There is no unified consensus in the literature whether the word base or bottom is suitable in BoP, and both terms are used to refer to Prahalad and Hart's concept [36], so the acronym BoP is used here to refer to both, or either.

Hart and his colleagues at the BoP Global Network acknowledge three main stages of evolution in BoP discourse to the present time [7]. BoP 1.0, hitherto the dominant view, emerged from the core idea of an existing fortune or latent market at the bottom of the economic pyramid, to be exploited by businesses, emphasizing its commercial potential and depicting the low-income population solely as consumers [15, 35, 36]. BoP 2.0 places its emphasis on the need for co-creation, and it has moved beyond the

focus on selling to the poor. A wider set of roles are on offer in this view for the participation of low-income populations throughout the value chain, framing their potential contribution as extending beyond their capacity to consume, including also their potential as employees, suppliers, distributors, or partners [30]. BoP 3.0, as proposed by Casado Cañeque and Hart [7], responds to additional opportunities, complexities, and challenges in the practice of BoP business, including moves toward open-innovation ecosystems, last-mile distribution, and cross-sector partnership networks.

Over the course of this conceptual evolution, the study of BoP has attracted considerable attention, and hundreds of publications, conferences, and business summits have addressed the issue, from academic, policy, and practitioner stances [12]. The literature on BoP has evolved in quantity, quality, and complexity, and it exhibits wide spectrum of representation, contextualization, interpretation, and implementation of BoP [19]. Research on BoP issues has been conducted on a wide range of subjects, including the analysis of innovation schemes for BoP markets [13, 22], public policy considerations for BoP [44], and use of

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BoP business ventures in development cooperation for the financial sustainability of aid flows [31].

This growing stream of research on the concept indicates that a bibliographic analysis of the main contributions to this field is worth a review. Thus, this study develops a bibliometric analysis of BoP research, using the core collection of the Web of Science.

Bibliometrics quantitatively studies bibliographic material [3]. From a quantitative analysis of published sources, a bibliometric analysis can enable an evaluation of the impact or performance of published research through the use of bibliometric indicators, including the h-index, journal impact factor, and other normalized indicators of citation impact [29].

The academic literature provides a variety of examples of bibliometric studies in the social sciences, including the subdisciplines of management [32], psychology [40], innovation [5], entrepreneurship [21], social entrepreneurship [37], creativity in business economics [8], international business [10], sustainability in business education [9], business incubators [1], arts-based management [11], information technology [2], organizational failure [20], economics [28], and marketing [25].

The remainder of this document continues as follows. Section 2 describes the methodology used in this study. Section 3 presents and analyses its results for the bibliometric indicators under study, and it also gives a graphic visualization of the bibliometric data. Finally, Section 4 provides the conclusions of this study.

## 2. Methodology

This study used a bibliometric approach to information obtained from the Web of Science (WoS) core collection, maintained by Clarivate Analytics. Although other academic databases exist, such as Scopus and Google Scholar, WoS is widely regarded as the main database to use for a comprehensive and accurate exploration of the academic literature. In March 2018, the WoS core collection was reported to have more than 20,000 journals and 1.4 billion cited references in its archives. It is generally believed that

the contents of the WoS core collection meet the highest quality standards in academic research.

It is important to note that the materials for this study are drawn from those available on WoS in March 2018, so the results can only be a reflection of the particular state of the field at the specific point in time. Because this database is continually evolving as newer publications arrive and the associated growth in citations, the findings reported here may differ from others obtained at other times.

This study uses the search operator OR in the topic terms to include all papers in WoS core collection that contained any of the following keywords associated with BoP studies: base of the pyramid, bottom of the pyramid, base of pyramid, bottom of pyramid, base of the economic pyramid, bottom of the economic pyramid, base of the income pyramid, bottom of the income pyramid, BoP business\*, BoP market\*, BoP communit\*, and BoP population\*. This initial query produced 579 publications. This group was reduced by being limited to articles and reviews only, resulting in 405 papers.

The specificity of the sample was increased by adding two additional filters. First, the query was limited to documents published between 2002 and 2018 because this was the time period most relevant to this study. Next, using WoS research areas, the results were filtered to exclude subtopics that, although matching a keyword, have no relation to BoP research. Chemistry, crystallography, emergency medicine, family studies, materials science, physics, religion, spectroscopy, and surgery were excluded. These two filters reduced the output to 336 results. Finally, the sample was screened for inaccuracies, identifying and excluding 10 results that were not related to BoP research. The final sample included 326 papers (Figure 1). The number of publications in BoP research in WoS shows a sharp growth trend, with the most significant increase in the number of published papers beginning in 2012, implying that interest in BoP is growing.

This study used several bibliometric indicators, including the total number of papers, total citations, and h-index. The h-index was proposed by Hirsch [16] to quantify an individual's scientific output by integrating the number of published papers and the number of citations into a single measurement.

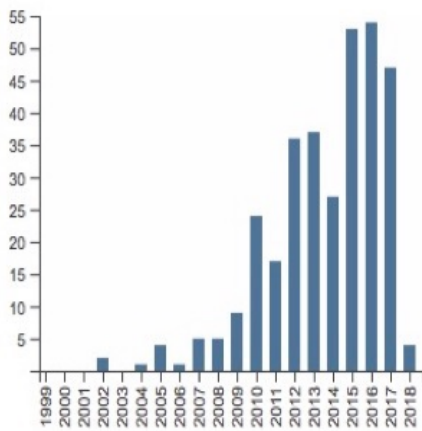


Figure 1. Publications on BoP per year

Additional indicators were used to determine the productivity and influence of authors, institutions, countries, and journals. The number of articles equal to or above a citation threshold [26] is used to determine the quantity of papers that reach a specific level of influence. The ratio of total citations per study measures the impact of each paper [27].

A graphic visualization of the results in bibliometric maps is created using VOSviewer software, developed by a research group at Leiden University [42]. Three types of connections were considered: co-occurrence of keywords, co-citation, and bibliographic coupling [41]. Keyword co-occurrence networks showed the most common author keywords appearing in a field [5]. Co-citation is where two publications are cited together by a third [39]. Bibliographic coupling, on the other hand, occurs when two publications both cite a third [18]. Bibliographic coupling shows overlap in reference lists, and a greater degree of it implies a larger number of shared references between two publications [43].

### 3. Results

The number of citations of one study can be used to gauge the importance and influence of a publication. Table 1 presents the general citation structure found in BoP research, as judged by the information obtained from WoS. Analytical purposes dictated five citation thresholds. The results showed that only eight papers (2.45%) of those isolated received 100

or more citations; 8.90% received 50 or more cites, and 21.78% were cited 20 or more times. More than 110 studies received 10 or more citations, and almost 77% of the papers in the sample had been cited at least once since the publication.

Table 1. General citation structure of BoP research in WoS

Number of citations	Number of articles	% Articles
$\geq 100$	8	2.45
$\geq 50$	29	8.90
$\geq 20$	71	21.78
$\geq 10$	111	34.05
$\geq 1$	251	76.99
Total articles	326	

Notes:  $\geq 100$ ,  $\geq 50$ ,  $\geq 20$ ,  $\geq 10$ ,  $\geq 1$  = number of papers with equal or more than 100, 50, 20, 10, and 1 citations, respectively

#### 3.1. The most influential papers in BoP research

Ted London and Stuart L. Hart [24] had the most cited paper in the sample, with 460 citations found in WoS. Their work discussed the strategies used by multinational corporations (MNCs) to reach the markets at the base of the economic pyramid. This was followed closely by a work titled *Serving the World's Poor, Profitably*, published in *Harvard Business Review* by Prahalad and Hammond in 2002 [35]. Then, with 246 citations in WoS, the work of Karnani [17], which presents an argument opposing the mirage of business in markets at the base of the pyramid, is the third most influential paper in BoP studies.

Other influential studies found in the results that have 100 or more citations were studies by Hart and Christensen [15]; Seelos and Mair [38]; London, Anupindi, and Sheth [23]; and Webb, Kistruck, Ireland, and Ketchen, Jr. [45]. An examination of citations per year indicated that Prahalad [34] and Kolk, Rivera-Santos, and Rufin [19] each had a longer-term and significant impact. Prahalad's work had 13.14 citations per year, and Kolk, Rivera-Santos, and Rufin received 12.6 annual cites for their article. It should be noted that these results only accounted for papers that were published in scientific journals counted in the core collection of WoS. Table 2 presents the 30 most cited studies.

Table 2. The 30 most cited studies according to WoS.

R	C/Y	TC	Title	First Author	Journal	Year
1	30.67	460	Reinventing strategies for emerging markets: beyond the transnational model	London, T	JIBS	2004
2	25.82	439	Serving the world's poor, profitably	Prahalad, CK	HBR	2002
3	20.5	246	The mirage of marketing to the bottom of the pyramid: How the private sector can...	Karnani, A.	CALIF MANAGE REV	2007
4	15.42	185	Profitable business models and market creation in the context of deep poverty:	Seelos, C.	AMP	2007
5	13.14	92	Bottom of the pyramid as a source of breakthrough innovations	Prahalad, CK.	J. Prod. Innov. Manag	2012
6	12.6	63	Reviewing a decade of research on the base/bottom of the pyramid (bop) concept	Kolk, A.	BUS SOC	2014
7	12.22	110	Creating mutual value: Lessons learned from ventures serving base of the pyramid...	London, T.	JBR	2010
8	12.18	207	The great leap—Driving innovation from the base of the pyramid	Hart, SL.	MIT Sloan Manag. Rev	2002
9	12	84	Impact at the “bottom of the pyramid”: the role of social capital in capability dev...	Ansari, S.	JMS	2012
10	11.22	101	The entrepreneurship process in base of the pyramid markets	Webb, J.	ETP	2010
11	11	66	Managing stakeholder relations when developing sustainable business models	Matos, S.	JCP	2013
12	9.89	89	Exchanges in marketing systems: the case of subsistence consumer-merchants...	Viswanathan, M.	JM	2010
13	9.67	87	Innovation and growth: how business contributes to society	Ahlstrom, D.	AMP	2010
14	9.57	67	Entrepreneurship and innovation at the base of the pyramid:	Hall, J.	JMS	2012
15	8.67	104	Strategic innovation at the base of the pyramid	Anderson, J.	MIT Sloan Manag. Rev	2007
16	8.6	43	Creating the responsible consumer: Moralistic governance regimes and consumer...	Giesler, M.	J. Consumer Res	2014
17	8.57	60	Innovation for inclusive business: Intrapreneurial bricolage in multinational corp	Halme, M.	JMS	2012
18	8.5	68	Toward a Theory of the Informal Economy	Godfrey, PC.	ACAD MANAG ANN	2011
19	7.82	86	Fostering change to sustainable consumption and production: an evidence based view	Tukker, A.	JCP	2008
20	7.8	39	Business as a development agent: evidence of possibility and improbability	Blowfield, M.	TWQ	2014
21	7.57	53	Life satisfaction, self-determination, and consumption adequacy at the bottom of ...	Martin, K.	J. Consumer Res	2012
22	6.88	55	Schumacher meets Schumpeter: appropriate technology below the radar	Kaplinsky, R.	RP	2011
23	6.83	41	Sustainable supply chain management in base of the pyramid food projects	Gold, S.	INT BUS REV	2013
24	6.7	67	Making better investments at the base of the pyramid	London, T.	HBR	2009
25	6.5	52	Delineating the domain of development entrepreneurship	McMullen, JS.	ETP	2011
26	6.43	45	Bridging the institutional divide: partnerships in subsistence markets	Rivera-Santos, M.	JBR	2012
27	6.4	32	The role of social value creation in business model formulation at the bottom of ...	Sinkovics, N.	INT BUS REV	2014
28	6.14	43	Marketing interactions in subsistence marketplaces: a bottom-up approach...	Viswanathan, Ma.	JPP&M	2012
29	5.82	64	Building value at the top and the bottom of the global supply chain:	Perez-Aleman, P.	CALIF MANAGE REV	2008
30	5.78	52	Business model innovation and sources of value creation in low-income markets	Sanchez, P.	EUR MANAG REV	2010

Notes: R = rank; C/Y = citations per year; TC = total citations

The co-citation connections in BoP publications were generated using VOSviewer software. Table 3 lists the 22 most cited documents, of which 6 are books and 16 are articles. The most influential book published in this area was that of Prahalad [33], published by Wharton School Publishing. One of the other most influential documents is the seminal work of Prahalad and Hart [36], published in the business journal *Strategy + Business*, which is not recognized as a source of research by databases like WoS.

### 3.2. The most influential and productive authors in BoP research

It was also of interest to examine the most productive and influential authors. Productivity was measured by the number of publications by each author, and the measure of influence takes into account the

number of citations received by the total production of each author. Table 4 presents the 25 most productive and influential authors, as judged by information in the WoS. Thus, the three most influential authors in BoP studies were Stuart Hart, Ted London, and Coimbatore K. Prahalad. Prahalad had the highest ratio (total citations/total studies), with an average of 265.50 cites per publication. Hart was the most cited author in total, with almost 700 total citations reported in WoS. Then, Madhubalan Viswanathan had the largest number of studies in the BoP field, with ten publications appearing in the WoS database. The topics addressed in his authored and co-authored publications included marketing management and decision making in subsistence markets. Viswanathan's work had an h-index of seven, indicating that seven of his papers have been cited at least seven times. Kistruck, Singh, Karnani, and London were also among the authors with the highest productivity.

Table 3. The 22 most cited documents in BoP research

R	Year	Cited reference (only first author is indicated)	Type	Citations	TLS
1	2004	Prahalad CK, 2004, The Fortune at the Bottom of the Pyramid	B	155	146.00
2	2004	London T, 2004, J Int Bus Stud, V35, P350	A	94	94.00
3	2002	Prahalad Ck, 2002, Harvard Bus Rev, V80, P48	A	91	89.00
4	2007	Karnani A, 2007, Calif Manage Rev, V49, P90	A	83	82.00
5	2007	Hammond A., 2007, The Next 4 Billion...	B	49	49.00
6	2010	London T, 2010, J Bus Res, V63, P582	A	41	41.00
7	2007	Seelos C, 2007, Acad Manage Perspect, V21, P49	A	40	40.00
8	1989	Eisenhardt Km, 1989, Acad Manage Rev, V14, P532	A	37	37.00
9	2002	Hart SI, 2002, Mit Sloan Manage Rev, V44, P51	A	37	37.00
10	2002	Prahalad C. K., 2002, Strategy Business, V26, P54	A	34	32.00
11	1999	Sen A., 1999, Development as Freedom	B	34	34.00
12	2005	Hart SI, 2005, Capitalism at the Crossroads	B	33	33.00
13	2007	Anderson J, 2007, Mit Sloan Manage Rev, V49, P83	A	32	32.00
14	2008	Pitta Da, 2008, J Consum Mark, V25, P393	A	32	32.00
15	2000	De Soto H., 2000, The Mystery of Capital	B	30	30.00
16	2010	Webb Jw, 2010, Entrep Theory Pract, V34, P555	A	30	30.00
17	2014	Kolk A, 2014, Bus Soc, V53, P338	A	28	27.00
18	2008	Simanis E., 2008, The Base of the Pyramid Protocol	B	28	28.00
19	2008	Vachani S, 2008, Calif Manage Rev, V50, P52	A	28	28.00
20	2007	Anderson Jamie, 2007, Journal Of Business Strategy, V28, P14	A	26	26.00
21	2002	Prahalad C.K., 2002, Strategy Business, V26, P1	A	26	26.00
22	2009	London T, 2009, Harvard Bus Rev, V87, P106	A	25	25.00

Notes: A = Article; B = Book; TLS = Total Link Strength

The graphic visualization of author co-citation networks by the VOSviewer (Figure 2) shows Prahalad's prominence in BoP research. Hart, London, Karnani, and Viswanathan also appeared as notable nodes, implying a greater number of citations and co-citations.

### 3.3. The most influential journals in BoP research

Table 5 lists the 20 most influential journals in BoP research. *Harvard Business Review* (HBR) was the most influential journal in this subject area, with a total of 585 citations in WoS for its seven publications in the subject. This gave a ratio of 83.57 average citations per study. An article by Prahalad and Hammond [35] had the greatest influence of all HBR publications, surpassing the threshold of 100 or more citations. The *Journal of International Business Studies* (JIBS), *California Management Review* (CMR), and the *Journal of Business Research* (JBR)

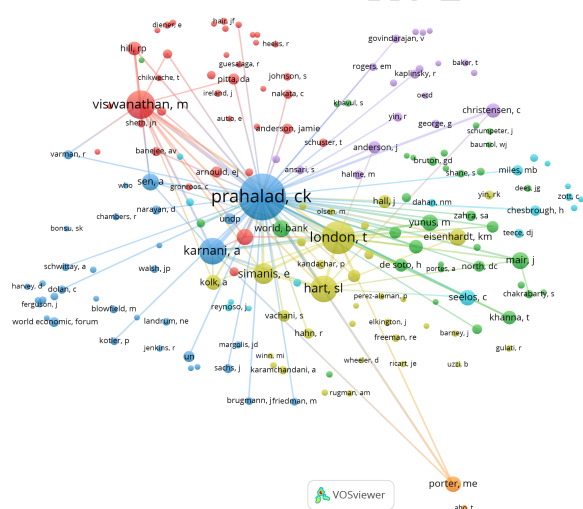


Figure 2. Co-citation of Authors





Table 5. The 20 most influential journals in BoP research

R	Journal	TS	TC	H	TC/TS	≥100	≥50	≥20	≥10
1	<i>Harvard Business Review</i>	7	585	5	83.57	1	2	4	5
2	<i>Journal of International Business Studies</i>	2	488	2	244.00	1	1	2	2
3	<i>California Management Review</i>	6	465	5	77.50	1	3	4	4
4	<i>Journal of Business Research</i>	14	379	11	27.07	1	1	6	11
5	<i>MIT Sloan Management Review</i>	2	312	2	156.00	2	2	2	2
6	<i>Academy of Management Perspectives</i>	3	276	2	92.00	1	2	2	2
7	<i>Journal of Management Studies</i>	4	243	4	60.75	0	3	4	4
8	<i>Journal of Product Innovation Management</i>	7	208	6	29.71	0	1	4	4
9	<i>Entrepreneurship Theory and Practice</i>	3	191	3	63.67	1	2	3	3
10	<i>Journal of Business Ethics</i>	17	187	8	11.00	0	1	2	7
11	<i>Journal of Cleaner Production</i>	6	161	2	26.83	0	2	2	2
12	<i>International Business Review</i>	4	156	4	39.00	0	1	4	4
13	<i>Journal of Consumer Research</i>	2	98	2	49.00	0	1	2	2
14	<i>Technovation</i>	6	92	5	15.33	0	0	1	5
15	<i>Journal of Public Policy Marketing</i>	4	92	4	23.00	0	0	2	3
16	<i>Business Society</i>	3	85	2	28.33	0	1	1	2
17	<i>Journal of Macromarketing</i>	6	76	3	12.67	0	1	1	2
18	<i>Strategic Management Journal</i>	3	65	2	21.67	0	1	1	1
19	<i>Journal of Service Management</i>	4	56	4	14.00	0	0	1	3
20	<i>Energy Policy</i>	3	48	3	16.00	0	0	1	1

Notes: R = rank; TS = total studies; TC = total citations; H = h-index; TC/TS = citations per study; ≥100, ≥50, ≥20, ≥10 = number of papers with equal or more than 100, 50, 20, and 10 citations

HBR displayed one of the widest networks, reflecting again the influence of its publication. The *Academy of Management Review* and JBE also appeared with their broad co-citation networks. The book *The Fortune at the Bottom of the Pyramid* [33] was also another commonly cited source. This graphical visualization was supported by the data shown in Table 6, which lists the 20 most cited sources according to the total numbers of citations and co-citation links.

### 3.4. The most productive institutions and countries in BoP research

Another interesting aspect considered was the geographical and institutional distribution of BoP research. This was assessed by analyzing the universities and countries that had greater representation in BoP publications in WoS. The 30 most productive and influential institutions are presented in Table 7, and Table 8 lists the leading 25 countries in the

world. Universities from the USA were dominant in their influence, accounting for the top 10 institutions in the ranking in terms of total citations. The University of Michigan was the most influential, with more than 1000 citations of its 15 papers on BoP. Its h-index was 10, meaning that 10 of its papers received 10 or more citations.

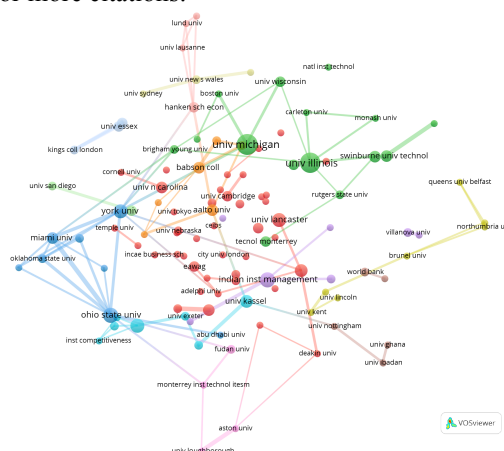


Figure 4. Bibliographic coupling of institutions



Table 7. The 30 most productive and influential institutions

R	Institution	Country	TS	TC	H	TC/TS	≥100	≥50	≥20	≥10
1	University of Michigan	US	15	1041	10	69.40	3	5	8	10
2	University of North Carolina at Chapel Hill	US	4	684	4	171.00	2	2	2	3
3	University of Illinois Urbana-Champaign	US	10	322	7	32.20	0	2	6	6
4	Harvard University	US	7	254	4	36.29	1	1	2	3
5	Ohio State University	US	8	218	6	27.25	1	1	4	6
6	Babson College	US	5	203	5	40.60	0	2	4	1
7	University of Wyoming	US	5	187	4	37.40	0	1	3	4
8	Suffolk University	US	3	162	3	54.00	0	2	3	3
9	Oklahoma State University Stillwater	US	3	156	3	52.00	1	1	2	3
10	Texas A&M University College Station	US	3	155	3	51.67	1	1	2	3
11	University of Winnipeg	Canada	3	149	3	49.67	0	2	2	3
12	Simon Fraser University	Canada	5	147	3	29.40	0	2	2	3
13	University of Cambridge	UK	4	129	4	32.25	0	1	2	4
14	York University	Canada	7	124	5	17.71	0	0	2	5
15	University of Illinois at Chicago	US	6	113	5	18.83	0	0	2	3
16	Hanken School of Economics	Finland	4	113	4	28.25	0	1	3	4
17	University of Amsterdam	Netherlands	3	111	2	37.00	0	1	2	2
18	University of New South Wales	Australia	3	94	3	31.33	0	0	2	3
19	University of Kassel	Germany	6	91	4	15.17	0	0	1	3
20	Aalto University	Finland	5	73	2	14.60	0	1	1	1
21	Brigham Young University	US	3	73	2	24.33	0	1	1	1
22	Miami University	US	5	72	4	14.40	0	0	2	3
23	University of Manchester	UK	3	71	3	23.67	0	0	2	3
24	Villanova University	US	3	71	3	23.67	0	1	1	2
25	University of Nebraska–Lincoln	US	4	63	3	15.75	0	0	1	2
26	University of Neuchâtel	Switzerland	3	60	2	20.00	0	0	1	2
27	Tecnológico de Monterrey	Mexico	8	57	4	7.13	0	0	1	3
28	Indian Institute of Management, Calcutta	India	7	55	4	7.86	0	0	1	1
29	University of London School of Oriental and African Studies	UK	3	53	3	17.67	0	0	1	2
30	University Erlangen-Nürnberg	Germany	4	40	3	10.00	0	0	1	1

Notes: R = rank; TS = total studies; TC = total citations; H = h-index; TC/TS = citations per study; ≥100, ≥50, ≥20, ≥10 = number of papers with equal or more than 100, 50, 20, and 10 citations

The main co-citation linkages between institutions are shown in Figure 6. The map was built with a threshold of two papers and 100 most relevant connections. A high degree of co-citation among North American institutions was evident, with a greater dispersion among the European universities shown.

### 3.5. Keyword co-occurrences in BoP research

Lastly, this study analyzed keyword co-occurrences to identify the most common terms used by BoP authors to describe their work. VOSviewer software was used to develop a keyword co-occurrence map (Figure 7) that shows the 100 most

Table 8. The 25 most productive countries in BoP research

R	Country	TS	TC	H	TC/TS	≥100	≥50	≥20	≥10
1	USA	129	3416	30	26.48	6	16	37	57
2	UK	56	708	12	12.64	1	4	8	20
3	Canada	27	493	13	18.26	0	3	9	15
4	Germany	18	401	9	22.28	1	3	5	9
5	Netherlands	19	296	7	15.58	0	2	5	7
6	Spain	9	281	4	31.22	1	2	3	3
7	India	43	233	7	5.42	0	0	4	5
8	France	7	181	4	25.86	0	2	3	3
9	Australia	15	176	6	11.73	0	0	3	5
10	Finland	11	170	7	15.45	0	1	4	6
11	P.R. China	11	170	6	15.45	0	1	2	5
12	Denmark	6	136	2	22.67	0	1	2	2
13	Switzerland	12	125	6	10.42	0	0	3	4
14	Belgium	3	111	3	37.00	0	1	1	2
15	Italy	6	107	3	17.83	0	1	1	2
16	Norway	2	91	1	45.50	0	1	1	1
17	Mexico	9	75	5	8.33	0	0	1	4
18	Sweden	6	55	3	9.17	0	0	2	2
19	New Zealand	2	50	2	25.00	0	0	2	2
20	Japan	7	40	4	5.71	0	0	0	2
21	South Korea	4	39	3	9.75	0	0	0	2
22	Scotland	5	36	4	7.20	0	0	0	1
23	Sri Lanka	2	26	1	13.00	0	0	1	1
24	Colombia	9	25	2	2.78	0	0	0	1
25	Brazil	12	21	2	1.75	0	0	0	1

Notes: R = rank; TS = total studies; TC = total citations; H = h-index; TC/TS = citations per study; ≥100, ≥50, ≥20, ≥10 = number of papers with equal or more than 100, 50, 20, and 10 citations

significant connections, with a threshold of two co-occurrences per keyword. Base of the pyramid was the most common keyword used in BoP research, followed by Bottom of the pyramid. Minor variations in the keywords (e.g., with or without the accompanying acronyms) were used to illustrate the different ways in which the most commonly used keywords appear in publications in the field.

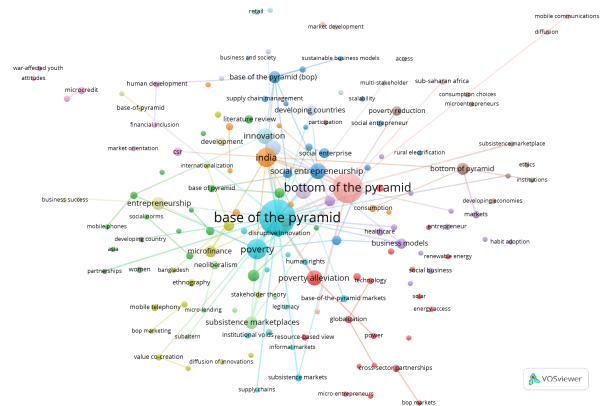


Figure 7. Co-occurrence of keywords

#### 4. Conclusions

This study provided a bibliometric analysis of the current state of research in the study of BoP. The WoS core collection was used, with information reported in the database as of March 2018. The lack of international agreement on a single bibliometric measure was acknowledged in this study, leading to a range of indicators being used to increase the informative breadth. The reported measurements included the total number of papers and citations, h-index, and ratios, such as citation thresholds and average citations per study. This study analyzed these key bibliometric indicators to determine the productivity and influence of the leading authors, journals, institutions, and countries in the field. To complement and deepen the analysis, VOSviewer software is also used to create bibliometric maps. Three types of connections were examined, namely, bibliographic coupling, co-citation, and co-occurrence of keywords.

The results showed that Hart, London, and Prahalad were the three most influential authors in BoP research. Karnani, which is among the most productive and influential authors, also appeared as the most prominent opposition voice. HBR, JIBS, CMR, JBR, and *MIT Sloan Management Review* were the most cited journals in this field. Some non-journal sources, such as books and a non-scholarly periodical, were also within the most influential publications in BoP research. The most significant of these was the seminal book by Prahalad, first published in 2004, *The Fortune at the Bottom of the Pyramid*. This study also found the most productive and influential institutions and countries. North American and Western European countries were in the lead here, with the USA as the most productive and influential country in BoP research, followed by other traditional leading countries, such as the UK, Canada, and the Netherlands. However, the influence of emerging countries of the global south should not be passed over, and the ranking included India, South Africa, Mexico, and Colombia.

The information and analyses provided in this study may be found useful by a readership that has an interest in gaining an overview of the current state of BoP research. This could be for academic purposes or practical policy. The authors acknowledge that the results presented here were limited by the specific methodology implemented. Furthermore, because the WoS database exhibits constant change, the data reported might shift over time, and the figures and data presented are only valid for the timespan specifically

under study. In addition, it must be noted that other important authors and publications in the BoP field are not included in the WoS core collection and thus evaded the scope of this study.

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