Scientific Productivity and Citation Analysis of the Bhutan Journal of Research and Development, 2012-2019

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Abstract

This paper uses bibliometric methods to study the status and development trends of the Bhutan Journal of Research and Development (BJRD). Firstly, the general characteristics of the journal are investigated through the analysis of descriptive statistics. Then, the subject matter of the articles are explored. Finally, the impact factor score and h-index of the journal are determined by using ISI's JCR formula and Harzing's Publish or Perish (PoP) citation analysis program.

Introduction

The Bhutan Journal of Research and Development (BJRD) is a peer-reviewed bi-annual research publication of the Royal University of Bhutan. The journal aims to advance research and scholarship in the fields of social, physical and biological sciences, and humanities relevant to Bhutan. The first publication of BJRD appeared in 2007 with 12 articles. However, the publication stopped for the next four years for "unknown" reasons. The journal resumed its publication in 2012. Since then the university has consistently published a total of 16 volumes of the journal spanning a period of 8 years from 2012 to 2019. Therefore, it is necessary to conduct a comprehensive analysis and summary of the journal from the perspective of bibliometrics. The lone publication of the year 2007 was excluded from this study due to the inconsistent nature of the material.

Bibliometrics is a set of mathematical and statistical methods

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used to analyze and measure the quantity and quality of scientific publications (Durieux et al., 2010). Bibliometric analysis helps determine trends and patterns of scientific publications within a research discipline, identifying the focus of research and the national and international strengths and biases (May, 1997). Note that persons who spend their professional time doing science are called scientists or researchers (Rousseau et al., 2018). Thus, here and further on in this work the word "science" refers not only to the natural and biomedical sciences, but also to applied science, the social sciences and the humanities.

There are two types of bibliometric indicators: quantitative indicators that measure the research productivity of the publication and performance indicators that measure the quality of a researcher's output (Joshi, 2014). Bibliometric indicators are especially useful for researchers and organizations. Many of the appointments, promotions, deciding which grants are awarded, and even the fates of scientific institutions are based on these indicators. The most popular performance indicator in bibliometric studies is citation analysis. It was first developed by Eugene Garfield when his company, the Institute for Scientific Information (ISI), introduced the ISI Web of Science citation database and published the Journal Citation Report (JCR) in 1976 (Smith, 2009). Citation analysis is widely used to evaluate the performance of different actors in the academic and scientific arena, ranging from individual scholars (Hirsh, 2005; Egghe, 2006), to journals, departments, universities (Evidence Ltd., 2007), and national institutions (Kinney, 2007; Pouris, 2007), up to whole countries (King, 2004). Citations are the main factor determining the scientific impact of a journal, as expressed by the journal impact factor (Falagas et al., 2008). The journal impact factor (JIF), originally developed by Garfield and Sher (Garfield, 2006), is the average number of times articles from the journal published in the past two years have been cited in the JCR year by the total number of articles published in the two previous years. If, for instance, in 2015 the items issued in 2014 and 2013 by journal X were cited 100 and 150 times, respectively, and if the total number of citable items published

in that journal in 2014 and 2013 was 70, then the 2015 IF of journal X would be:

IF(X) =(100+150)/70=3.57

Another bibliometric indicator is the h-index, which is considered a counterpart to the journal impact factor. It was introduced by Jorge Hirsh in 2005 and is defined as follows: "A scientist has index h if h of his or her N_p papers have at least h citations each and the other (N_p – h) papers have ≤ h citations each (Hirsch, 2005). An h-index of 7 means that an author has published seven papers that each have at least seven citations. Another journal-level metric is the *immediacy index,* which indicates the speed with which items published in journals are cited in other literature (McVeigh, 2004). A high immediacy index indicates that the content of this journal is quickly noticed, highly valued and topical within the field of study (Davarpanah & Aslekia, 2008). Another index for measuring and comparing the output of scientific researchers is the g-index, which was introduced by Leo Egghe in 2006 as an improvement of the Hirsch-index (Woeginger, 2008).

Common bibliometric databases used for citation analysis include Web of Science, Scopus, Google Scholar, and PubMed (Falagas et al., 2008). Web of Science and Scopus are the most prominent citation index databases. They are owned by Clarivate Analytics and Elsevier respectively. Google Scholar has become a very popular alternative data source for citation analysis (Harzing & Wal, 2008; Delgado et.al, 2017). The most common way to calculate the h-index and other measures of impact from Google Scholar is to rely on "publish or perish" (PoP), a computer program developed by Anne-Wil Harzing which provides a graphical interface to Google Scholar data for bibliometricians (Baneyx, 2008; Dinkel, 2011).

Materials, methods and tools

This study systematically analyzes a total of 119 full-text articles

published in the Bhutan Journal of Research and Development (BJRD) from 2012 to 2019. First, the quantifiable bibliometric characteristics of the articles such as the year-wise distribution of the articles, article length, keywords, cited references and author details were compiled for analysis using descriptive statistics. Next, as BJRD was not indexed in Web of Science or Scopus, Google Scholar was chosen for the citation analysis of the articles. Harzing's Publish or Perish (PoP) software program was used for this purpose.

A Google Scholar (GS) query was carried out using the keywords "Bhutan Journal of Research and Development" in the Journal search box of Harzing's Publish or Perish tool and limiting the year of publication from 2012-2019. 76 articles were generated by PoP. Two of the articles did not belong to BJRD and were hence cleaned from the data. Therefore, the GS query returned an output of 74 articles published by BJRD. This constituted 62% of the total number of articles (119) published by BJRD between 2012 and 2019. These articles were retrieved by Google Scholar and PoP from the following URLs: http://www.rub.edu.bt; http://www.researchgate.net; and http://www.academia.edu.

There are many other software programs that are used for analyzing and visualizing bibliometric data. The popular ones include VOSViewer, BibExcel, Citespace, HistCite, CitNetExplorer, SciMat, and Sci^2 Tool. The data sources used by these tools are mostly Web of Science, Scopus, Crossref, or PubMed. The limitation of this study has been that these tools could not be used as BJRD was not indexed in any of these databases. Thus the data for the present study was analyzed using Google Scholar, Harzing's PoP, Excel 2016 and some basic features of Tableau 2020.

Results and discussion

Bhutan Journal of Research and Development published a total of 119 articles between 2012 and 2019 with an average of 7

articles per issue. It published a total of 16 volumes between 2012 and 2019 with an average of 15 articles per year (Table 1).

Table 1. *Year and volume wise distribution of articles*

Sl. No.	Year	Vol 1	Vol 2	No. of articles	% of records
1	2012	9	7	16	13.45
2	2013	7	6	13	10.92
3	2014	8	5	13	10.92
4	2015	6	22*	28	23.52
5	2016	5	6	11	9.26
6	2017	5	8	13	10.92
7	2018	5	6	11	9.25
8	2019	8	6	14	11.76
		Total		119	100

Note: *This special edition was printed as Spring 2015, Vol 4

BJRD published a special edition in 2015 with 22 articles. The research articles in this issue were predominantly devoted to Science and Technology and Engineering. Most of the contributing authors and institutions in this edition were from Japan. This special edition was also the issue with the highest number of articles (28), which constituted 23.52% of the total articles published in BJRD 2012-2019.

Page length

The page length of articles varied between 3 pages to 28 pages long. The typical articles in BJRD were those between 10-16 pages long which constituted over 65% of the total articles published in BJRD 2012-2019. The highest numbers of articles were those with 12, 10 and 11 pages long, which comprised of 22, 18 and 12 number of articles respectively.
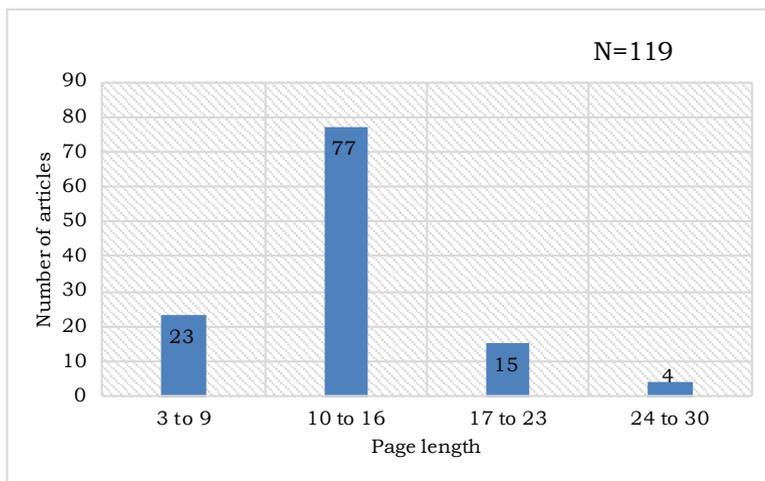
Figure 1. Article page length

Authorship pattern

A total of 228 authors contributed 119 articles to BJRD from 2012-2019. Gender wise, two-third of the authors were male and one-third (29%) was female. By nationality, 57% of the authors were Bhutanese nationals and 43% were foreign authors. The collected data showed that out of 119 articles, over 50% of the articles were contributed by single author, 17% by two authors, 15% by three authors, and 11% by four authors. The rest were collaboration of five or more than five authors (Figure 2). The rise in multiple authorship is indicative of the increase in the number of collaborative researches appearing in the journal over the past 8 years. This result is consistent with the findings of previous research conducted in the field (Lipetz, 1999; Weller, 2001; Schubert, 2002). Oromaner (1975) found an increasing relation between the number of authors and the number of citations received. Gordon (1980) proved that the probability of acceptance (of a submission to a journal) increases with the number of authors.

By occupational status, majority of the contributing authors were college/university professors, educators/lecturers, and

school principals/vice-principals and teachers. The other professional group included research officers, undergrad, PG, masters, and Phd students, Deans of colleges, professional counselors, engineers, project managers, directors from different organizations, forestry officers and some other practitioners from different fields.
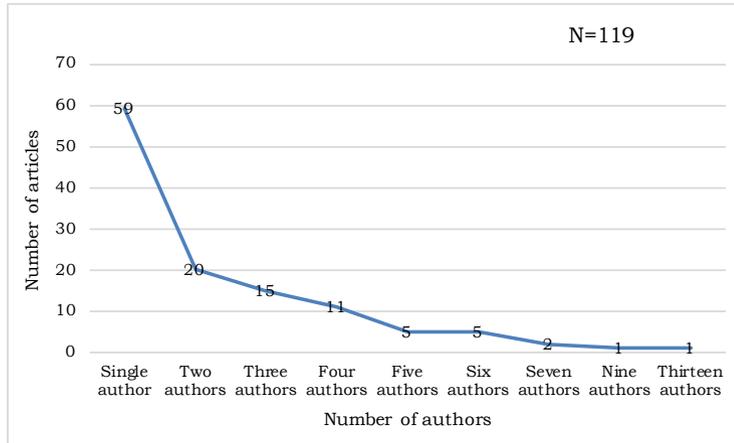

Figure 2. Authorship pattern

Ranking of authors

Figure 3 shows the ranking of authors who had published four or more than four articles (either as author or co-author) in BJRD 2012-2019.

The accumulated count for each author revealed the top 4 authors as T W Maxwell (8), Kezang Sherab (6), P.S. Waiba (4), and D.C. Gyamtsho (3). Twenty-five authors contributed at least twice to BJRD during the time of study (either as first author or as a co-author). This growth in author productivity was in conformation with Lokta's law of author productivity in bibliometrics, which states that the number of authors producing n contributions is approximately equal to $1/n^2$ of the number of authors that produce only one contribution (Bellis, 2009). In other words, for every 100 authors publishing a single study in a given field, 25 authors would have published twice.
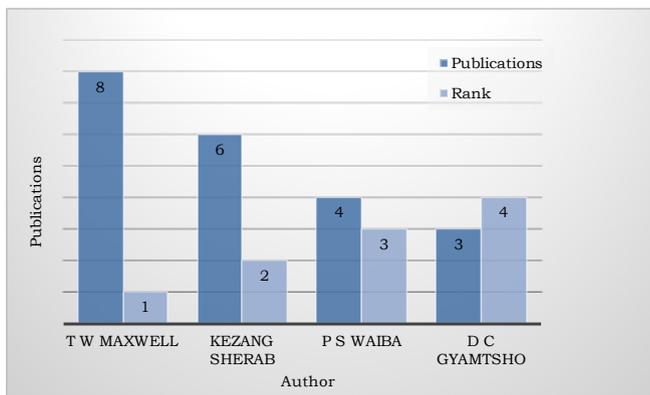
Figure 3. List of most prolific authors

Participating countries and institutions

Based on the collected data, an analysis of countries and their participating institutions was carried out to determine the distribution of countries/institutions in BJRD 2012-2019. As shown in Figure 4, 80 different institutions from 11 countries contributed articles to BJRD from 2012-2019: 34 institutions were from Bhutan, 22 from Japan, 6 from India, and 5 from Australia. The rest were from USA (3), Canada (2), Nepal (2), Netherlands (2), Norway (2), Finland (1) and South Africa (1).
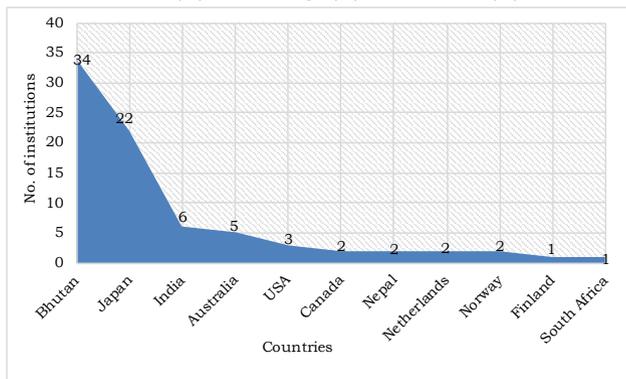

Figure 4. Countries and their participating institutions

The participating institutions included universities, colleges, schools, research institutions, business companies, and government ministries and departments.

Most productive institutions

Table 2 shows the list of most productive institutions which have contributed at least three articles to BJRD between 2012 and 2019.

Table 2. *Most productive institutions*

Institution	Frequency	Rank
Paro College of Education, RUB	18	1
Sherubtse College, RUB	13	2
Samtse College of Education, RUB	13	2
University of New England, Australia	8	3
Office of the Vice Chancellor (OVC), RUB	7	4
College of Language and Cultural Studies, RUB	6	5
Royal Thimphu College, Thimphu	6	5
Gedu College of Business Studies	5	6
College of Science and Technology, RUB	4	7
College of Natural Resources, RUB	3	8
Jigme Namgyal Engineering College, RUB	3	8
Naropa University, USA	3	8
Ministry of Labour and Human Resources, Bhutan	3	8

By institution productivity, Paro College of Education contributed the highest number of articles (18), followed by Sherubtse College and Samtse College of Education with 13 articles each. The University of New England, Australia ranked 3rd with 8 articles, followed by the Office of the Vice Chancellor (OVC), RUB (4th) with 7 article contributions. The College of Language and

Cultural Studies (CLCS) and Royal Thimphu College (RTC) each contributed 6 articles to BJRD during the period under study. Among the RUB colleges, Yonphula Centenary College (YCC) and Gyelpozhing College of Information Technology (GCIT) have not contributed any article to BJRD 2012-2019.

Citation distribution

Out of the 119 articles published in BJRD 2012-2019, 62% (74) articles were indexed in Google Scholar and 38% (45) were not indexed. Of these 74 articles, 31% (23) articles received a total of 94 citations over the period of eight years of BJRD publication. 69% (51) of the articles were never cited. The number of citations received by the articles ranged between 1-13 citations (Figure 5).
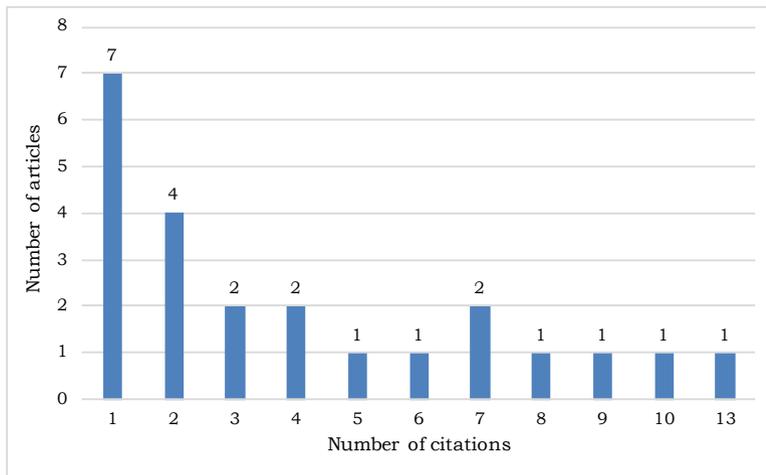

Figure 5. Citation distribution

Frequency of citation

The frequency of citation by year shows that BJRD articles published in the year 2012 received the highest (34) number of citations. The trend line then declined steadily over the years (Figure 6). This trend in BJRD was inconsistent with the findings of previous research conducted in similar fields (Lee, Cassano-

Pinché, & Vicente, 2005; Ogden & Bartley, 2007), whose works showed that the citation frequency in the journals they studied appeared to experience separate peaks at the interval of 3-4 years after publication. This trend in fluctuation of citation frequency was not observed in BJRD.
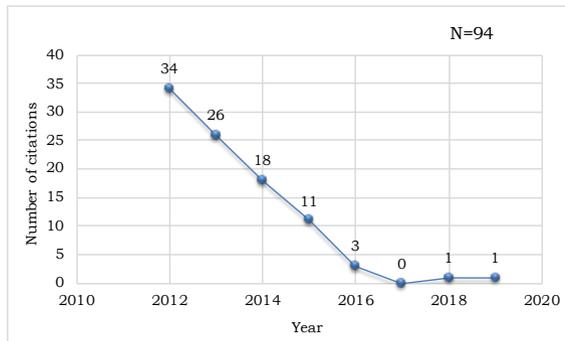

Figure 6. Frequency of citation

The BJRD articles published in the year 2017 did not receive any citation. The journal issues that were published in 2018 and 2019 received only one citation each. However, the citation forecast for the year 2020 and 2021 shows an upper confidence bound of 6.24 and 12.22 citations for 2020 and 2021 respectively (Figure 7).
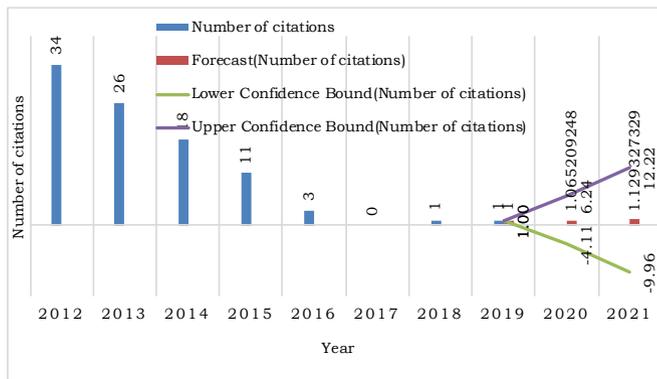

Figure 7. BJRD citation forecast for 2020 and 2021

Most cited authors

T.W. Maxwell was the most cited author in BJRD 2012-2019 with 18 citations to his articles. M.J. Schuelka ranked the second with 13 citations, followed by Rinchen Dorji (8), Deborah Young (7), and Kinley Dorjee (4). D C Gyamtsho, P.Ahonen, and P.Kucita each received four citations during the period under study (Table 3). It should be noted that self-citations were also considered as citations in this paper. According to Bellis (2009), self-citations are not an evil in themselves. Scientists usually cite their own earlier contributions upon which ongoing work is built, thereby reinforcing in the audience the sense of continuity between present and past accomplishments. Yet, beyond a certain threshold, they are suspected of deceitfully inflating the citation impact of the unit under assessment (paper, scientist, journal, institution).

Table 3. *List of most cited authors*

Author	Total Citations	Rank	h-index	g-index
T.W. Maxwell	18	1	3	4
M.J. Schuelka	13	2	1	1
Rinchen Dorji	8	3	2	2
Deborah Young	7	4	1	1
Kinley Dorjee	5	5	1	2
Deki C. Gyamtsho	4	6	1	1
P. Ahonen	4	6	1	1
P. Kucita	4	6	1	1

Most cited articles

Top-cited articles can provide insights into how research fields have evolved over time, and identify those researchers who have made high impact in a research field (Ho, 2012). Although citation rate is not a direct measure of the impact or importance of a particular scholarly work, it does provide a marker of its recognition within the scientific community (Shadgan et al.,

2010). Frequently, the best manuscript can be considered the one most cited in peer-reviewed journals (Robinson & Callen, 2010). BJRD articles that emerged as most cited were from the issues published in the year 2012 (4 articles), 2013 (1 article), 2014 (2 articles) and 2015 (1 article). The four most cited articles are given below:

1. Education for youth with disabilities in Bhutan: past, present and future by M J Schuelka - 13 citations

2. Improving the research output of academics at the Royal University of Bhutan: an action research reconnaissance and early initiatives by T W Maxwell & P Choeden - 10 citations

3. Implementation of Gross National Happiness in Bhutan: the case of an efficacious Zhabdrung Primary School by K Sherab, T W Maxwell and R Cooksey - 9 citations

4. Exploring 'disability' and 'inclusive education' in the context of Bhutanese education by R Dorji - 8 citations

It can be noted from Table 4 that the studies on 'education for disabilities' has caught a wider attention of scholars in 2013 and 2014. This implies that the researchers paid more attention to this topic in that time. Other popular subject matter included research promotion at the Royal University of Bhutan, implementation of Gross National Happiness education, enhancement of teaching pedagogy, study of zoological species, and research in Bhutanese linguistics.

Table 4. *Most cited articles*

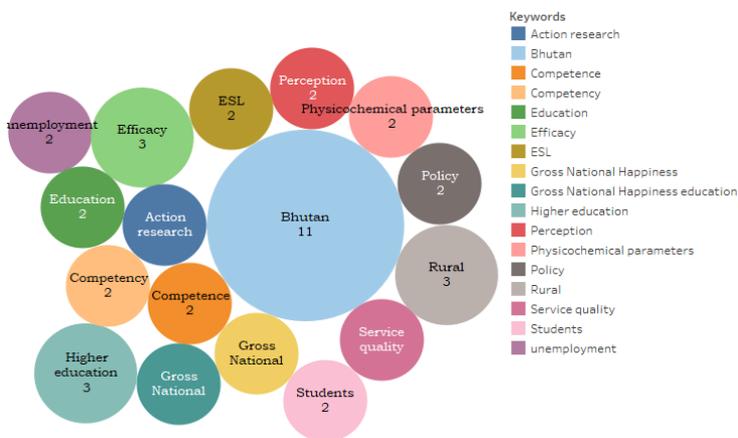| Cited title	Author	Year of publication	No. of citations
Education for youth with disabilities in Bhutan: Past, present, and future	M.J. Schuelka	2013	13
Improving the Research Output of Academics at the Royal University of Bhutan: A Reconnaissance and early initiatives	T.W. Maxwell and Phintsho Choeden	2012	10
Implementation of Gross National Happiness Education in Bhutan: The case of an efficacious 'Zhabdrung' Primary School	Kezang Sherab, T.W. Maxwell and Ray W. Cooksey	2014	9
Exploring 'Disability' and 'Inclusive Education' in the Context of Bhutanese Education	Rinchen Dorji	2015	8
Odonata of Samdrup Choling Dungkhag in Samdrup Jongkhar, Bhutan	Mitra et al.	2012	7
How we teach versus what we teach: Why a contemplative critical pedagogy is central to Bhutan's success as a GNH democracy	Deborah Young	2012	7
The impact of the Bhutanese Multigrade Attachment Program (BMAP)	T.W. Maxwell	2012	6
Linguistic landscape of Bhutan: An overview of number of languages, language policy, language education, and language use in Bhutan	Kinley Dorjee	2014	5

Analysis of high-frequency keywords

Keyword analysis is a type of content analysis that uses quantitative description to analyze the content of scientific or other types of articles (Kassarjian, 1977). Keywords are used to highlight the central focus of a given paper and are also useful for readers to learn its main researching contexts (Jin et al., 2019). Thus, keywords in BJRD articles were also explored and analyzed to demonstrate the keywords with a high frequency as well as keyword relationships. One-fourth (29) of the BJRD articles lacked any keywords at all. Most of these articles were from the 2012 and 2013 publications. However, the number of papers without keywords decreased from five in 2014 to three in 2016. It seems that from 2017 onwards, the provision for keywords in BJRD articles was made a requirement. The scenario has since changed with all the articles published from 2017 to 2019 containing the keywords. As many journals and citation databases these days require authors to supply keywords for their articles, this practice by BJRD is likely to persist in the future.

A total of 429 keywords were studied from 90 articles which contained the keywords. The threshold of the keyword frequency was set at 2 and 17 out of these 429 keywords were filtered, as described in Figure 8. Same word carrying different meanings in two different papers (e.g. integration) was filtered from the list to avoid any inaccuracy in the result.

Apparently, the core keyword of the journal papers was 'Bhutan'. The result indicated several key topics attracting wide attention, which can be related to different dimensions, such as higher education (students, competence, service quality, unemployment); education (action research, efficacy, competency), and Gross National Happiness (Gross National Happiness education, perception, policy). The interrelationships among these keywords is helpful for understanding and reflecting the knowledge structure and developing trends of research domains in BJRD.

Frequency of keywords

Keywords and sum of Frequency. Color shows details about Keywords. Size shows sum of Frequency. The marks are labeled by Keywords and sum of Frequency.

Figure 8. Frequency of keywords in BJRD 2012-2019

Number of bibliographic references

The 119 articles published in BJRD during the period under study contained a total of 2981 bibliographic references. The number of references in each article ranged from 3-98 references in an article. The typical papers in BJRD were those that cited between 11-20 references (34) [Figure 9]. This was followed by those that cited between 21-30 reference (28). Twenty-one BJRD articles contained 10 or less references. Majority of these papers belonged to the field of science and technology. This shows that research in the field of social sciences and humanities tend to cite more reference as compared to those in the field of science and technology.

Of the total 2981 bibliographic references 15% were from Bhutanese sources, which consisted of journal papers, books, reports, magazines, newspapers and websites. 85% of the references were cited from international journals and other sources. From the perspective of reference in general, the self-citation rate was relatively high among many of the BJRD
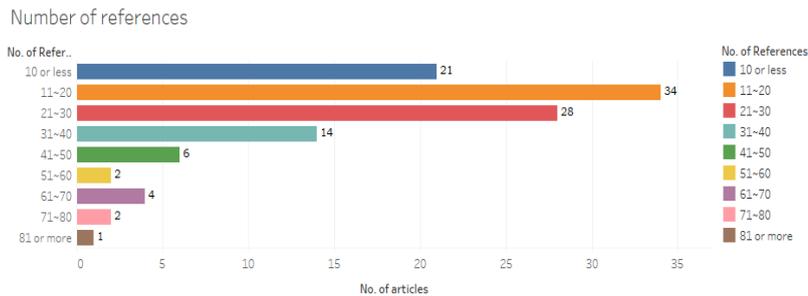
authors.

Number of references

Sum of No. of articles for each No. of References. Color shows details about No. of References.

Figure 9. Range of number of references with number of articles

Impact factor

Garfield's journal impact factor (JIF) provided in ISI's Journal Citation Reports (JCR) continues to be one of the most widely used and understood journal-level metrics.

The two-yearly impact factor of BJRD (calculated in the consecutive third year) was found out to be 2.068 in 2014, 1.692 in 2015, and 0.707 in 2016. The overall impact factor was 0.842 (Table 5). The immediacy index for 2014, 2015 and 2016 was 1.384, 0.392 and 0.272, respectively. Because many articles take more than a year to start generating citations by other scholarly works, immediacy indices for journals tend to be quite low, with few reaching higher than a value of 1.000.

What is a good impact factor? Gann (2019) observed that out of 12,298 journals tracked by the JCR (in 2017), only 239 titles, or 1.9% of the journals tracked by JCR, have a 2017 impact factor of 10 or higher. The top 5% of journals have an impact factor approximately equal to or greater than 6 (610 journals). 39.4% have impact factor equal to or greater than 2 (4840 journals), and approximately two-thirds of the journals (8757) have a 2017 impact factor equal to or greater than 1. It can be observed from Table 5 that BJRD's impact factor score was greater than 2 and

greater than 1 in 2014 and 2015, respectively. The impact factor has decreased to less than 1 from 2016 onwards.

Table 5. *Impact factor for BJRD 2012-2019 by year*

Journal/ publication year	Total citations received in the past two years	Total number of articles published in the past two years	Impact factor	Immediacy index
BJRD 2012	-			2.125
BJRD 2013	-			2
BJRD 2014	60	29	2.068	1.384
BJRD 2015	44	26	1.692	0.392
BJRD 2016	29	41	0.707	0.272
BJRD 2017	14	33	0.424	0
BJRD 2018	3	24	0.125	0.090
BJRD 2019	1	24	0.041	0.090
Overall			0.842	0.621

It is important to note that the scientific worth of an individual article is not measured by the impact factor of a journal. According to Garfield (2003), "What one means by quality can vary. There are undoubtedly some high quality articles that appear from time to time in low impact journals, but human behavior being what it is, scientists generally know when they have something really important to report, and send those articles to the better known, higher impact journals" (p. 365). Thus, a great number of literature (Wolfram, 2003; Ogden & Bartley, 2007; Petsko, 2008; Simons, 2008) has criticized the impact factor (IF) for its bias, limitations and contradictions.

The faults manifested by the journal IF when applied to research evaluation has pushed scientists to adopt an equally handy but hopefully less biased indicators of individual research achievement (Bellis, 2009). This is the h-index proposed by Jorge Hirsh in 2005. The advantage of h-index over impact factor is

that the Hirsch's measure provides a joint characterization of both productivity and cumulative research impact of a paper. In other words, it combines an assessment of both quantity (number of papers) and quality (impact, or citations to these papers) (Glanzel, 2006).

H-index

H-index is calculated by using the number of articles an author has published to date (h) to determine a citation count threshold, which the author's articles must meet or pass over (also h) to be included as part of the index (Roemer & Borchardt, 2015). Thus, if a researcher has published 50 articles over the course of his/ her career, and if 20 of those papers have been 20+ times, his/ her h-index would be 20. If any of the other 30 papers with less than 20 citations receive 21 or more citations in the future, the h-index will correspondingly increase. The more prolific the author, the higher the potential for the final index value. This index cap can be frustrating for junior academics, whose h-indexes may appear low, despite having authored one or more articles that have generated a very high number of citations. Thus, Harzing (2011) recommends that for junior academics, the impact factor of the journal they publish in might be a more realistic measure of eventual impact. She states that the h-index should, however, provide a more realistic assessment of the academic achievement of academics that have started publishing at least 10 years ago.

Table 6. *Results of BJRD 2012-2019 analysis using Harzing's PoP*

Metrics	Result
Publication years	2012-2019
Citation years	8 (2012-2020)
Papers	74
Citations	94
Cites/year	11.75
Cites/paper	1.27

Metrics	Result
Authors/paper	2.39
h-index	6
g-index	8
hI, norm	5
hI, annual	0.63

The h-index of BJRD 2012-2019 was 6 with an average of 11.75 cites per year, 2.39 authors per paper and 1.27 cites per paper (Table 6). Hirsh (2005) indicates that there will be large differences in typical h-values in different fields. As a general rule of thumb h-indices are much higher in the Natural Sciences than in the Social Sciences and Humanities, although there is a large variability even within these fields. He estimated that after 20 years a "successful scientist" would have an h-index of 20, an "outstanding scientist" would have an h-index of 40, and a "truly unique" individual would have an h-index of 60.

Conclusion

This study presents a bibliometric analysis of the Bhutan Journal of Research and Development (BJRD) over the period 2012-2019 and provides helpful insights into the distribution of articles, page length, authorship patterns, distribution of countries and institutions, citation analysis, and content analysis of the journal. The results of the analysis produce the following major findings:

a. BJRD published a total of 119 articles between 2012 and 2019 with an average of 15 articles per year.

b. The typical articles in BJRD were those between 10-16 pages long which constituted over 65% of the total articles.

c. A total of 228 authors contributed articles to BJRD from 2012-2019. 57% of the authors were Bhutanese nationals

and 43% were foreign authors.

d. 50% of the articles were contributed by single author and the rest 50% were collaboration between two or more than two authors.

e. The most prolific BJRD authors were T.W. Maxwell, Kezang Sherab, P.S. Waiba, and D.C. Gyamtsho. Twenty-five authors contributed at least twice to BJRD during the time under study.

f. Eighty different institutions from 11 countries contributed articles to BJRD from 2012-2019.

g. Paro College of Education contributed the highest number of articles to BJRD 2012-2019, followed by Sherubtse College and Samtse College of Education.

h. BJRD received a total of 94 citations over the period of 8 years of its publication.

i. The trend line in the citation frequency of BJRD showed no peaks in citation in any of the succeeding years after its publication.

j. The most cited authors in BJRD were T.W. Maxwell, M.J. Schuelka, Rinchen Dorji, Deborah Young, Kinley Dorjee, D.C. Gyamtsho, P. Ahonen, and P. Kucita.

k. The most cited article in BJRD was "Education for youth with disabilities in Bhutan: past, present and future" by M.J. Schuelka.

l. The most frequent keywords used in BJRD were Bhutan, rural, higher education and efficacy.

m. BJRD 2012-2019 contained a total of 2981 bibliographic references. 15% of the references were cited from Bhutanese

sources and 85% were cited from international sources.

n. Self-citation rate was relatively high among BJRD authors.

o. The impact factor of BJRD was 2.068 in 2014; 1.692 in 2015; and 0.707 in 2016. The overall impact factor of BJRD was 0.842 as of April 2020.

p. The h-index of BJRD was 6 as of April 2020.

This paper has attempted to raise awareness on the research trends pertaining to the scientific productivity and characteristics of BJRD through the bibliometric analysis.

For a career academic, it is essential that these metrics be understood accurately and in context by administrators and faculty members who may not be familiar with a given researcher's discipline or sub-discipline. Otherwise, a lack of understanding may lead to unfair comparisons to highly disparate fields when used for high-stake evaluative situations like applications for tenure, promotion and research funding. It is hoped that this analysis can help scholars better understand the academic trends, trigger more research interest, and help make informed decisions for future works.

Currently, the most authoritative and comprehensive sources of bibliometric impact measurement of scholarly journals are Web of Science, Scopus and Google Scholar. Sadly, few institutions can afford to publish in, or subscribe to Web of Science or Scopus. In order to expand the visibility and improve the impact factor of BJRD, it is recommended that the journal be made available through a wider network of free or low-cost web-based bibliometric (or its recent counterpart, altmetrics) tools. Some of these citation databases are Open Science Index, Semantic Scholar, Zenedo, openAIRE, BASE, Sherpa/Romeo, Mendeley, Microsoft Academic, Altmetric.com, and Dimensions.

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