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A Bibliometric Analysis of 14 Private Universities of Himachal Pradesh between 2004 and 2019: A Publication in Scopus

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Abstract

Research evaluation plays a vital role to find out the strength and weakness of the given field. The current research was based on the Bibliometrics analysis of fourteen private universities of Himachal Pradesh between 2004 and 2019 using the Scopus database. A total of 3923 publications were examined in this study. In this research, we took basic parameters like year wise growth of publications, citation growth by University, year-wise citation growth, most prolific author, most favourite source and most global cited documents. The result showed that journal was the most preferred form of publication in this study. Further, the study reported that 2019 was the most productive year because there were 629 publications published in that year. In this study, we found that the most preferred journal for publication was “Journal of High Energy Physics” and the most prolific author was “Singh, G.” with 158. The highly cited paper found in this study was “Surface modification of inorganic nanoparticles for development of organic-inorganic nanocomposites - A review by Kango S., with 1102 citations”.

Key Words:-Bibliometric, Private Universities of Himachal Pradesh, Bibliometric Study, Research output, Research Publications of Himachal Pradesh Universities

1. Bibliometrics: An introduction:

Bibliometrics is the statistical analysis of bibliographic information, an exploration technique utilized in Library and Information science. Bibliometrics is the blend of two words, 'Biblio' and 'Metrics' in which Biblio implies book or document and metrics means measurement.(Gp & Bv, 2016)Thus, we can characterize Bibliometrics as a process to analyze the books or documents or any publication of an Institution, universities or any academics and non-academics sector with the help of statistical method. Paul Otlet initially utilized the bibliometrics term in 1934 (Hood & Wilson, 2001), and he characterized it as "the measurement of all aspects related to the publication and reading books and documents". Alan Pritchard first utilized the anglicized version of Bibliometrics in 1969 (Gp & Bv, 2016; Parabhoi et al., 2019). He characterized it as "the use of arithmetic and statistical method to analyze the book and other media of communication". we can say Bibliometrics is the technique to analyze the bibliographic data of published literature to provide an overview of the body of knowledge for a given field of inquiry. Bibliometrics also considers incorporating investigations of writing development of explicit subjects and how many different individuals or researchers contribute writing. Many Bibliometrics study has been conducted on different aspects. In this present study, we will analyze the 14 different types of private universities of Himachal Pradesh and find out the research productivity of these universities.

2. Scope of the Study:

Among 17 Private Universities, this study has focused only on 14 selected Universities. Therefore, the publications indexed in the Scopus database and the remaining three universities are not considered for this study.

3. Literature Review:

Earlier, many researchers have done their study on scientometrics study and bibliometrics study on different areas, domain and geographical areas etc. for instance (Borah, 2021; J. M. Das & Parabhoi, 2020; Parabhoi, 2019; Parabhoi et al., 2020; Parabhoi & Ghosh, 2019; Patel & Bhatt, 2019)

Bibliometrics describes itself as using statistical and mathematical methods to books, periodicals, and other reading materials, and Alan Pritchard first used it.

(Madaan, 2015) attempted to analyze the research performances of Himachal Pradesh. In this study author extracted data from Scopus for the period 1952-beginning of Jan. 2015. The study reported that a total of 12383 publication found. The result showed that Chauhan, G.S from

Himachal Pradesh University, Shimla was the most prolific author among others. Furthermore, collaboration found from native countries authors than abroad.

(Pathak et al., 2020) conducted a bibliometric study of the research publication of faculty members of Guwahati University during 1989-2018, 30 years of study. In this study, data collected from Web of Science analyzed the data by the year-wise distribution of publications output, growth rate, compound annual growth rate, relative growth rate, and doubling time. Used Ms excel for data analysis, and for measuring different parameter, they used different formulas. The study disclosed the maximum number of (9.56%) articles were published in 2016 and the lowest number of (0.38%) articles published in 1992.

(Sahu & Parabhoi, 2020) conducted a bibliometric study on LIS research trends in India from 2014 to 2018. In this study, researchers analyzed 1357 no. of documents indexed in the Scopus database. They found that the most preferred publication source in the LIS field and found the most prolific authors, keywords, reference sources, etc. The study also found that Indian LIS experts like to distribute their exploration papers in the field of bibliometrics and scientometrics and collaboratively published it.

(S. Das et al., 2020) examined the research productivity of Mizoram University from 2002 to 2018. In these 17-year periods, a total of 586 publications published by Mizoram University. The study found that 2016 and 2017 were the most productive years of Mizoram University. In these years, ' University published 18.43% publications in 2016 and 14.33% publications in 2017. The most effective authors were Thapa, R.K. (82 publications, 21.58%) and Tiwari, D. (61 publications, 16.05%), who ranked the highest number of publications.

(Parabhoi & Verma, 2020) Study the research productivity on COVID-19 during the period 2001-2020 using the Scopus database. During the study period, a total of 14439 documents published and indexed in the Scopus database. The major outcomes from this study were the United States contributors publish more papers than china; a total of 9973 papers published by the USA. A further study reported that in the year 2020 highest number of papers published on research coronavirus.

(Nair & Yasmin, 2019) examined the characteristics of articles citations by Indian Universities. The period of this study was from 2017 to 2019. The essential database, i.e. Scopus, was used for this study. The main motto of this study was measured developing of publications citation of central universities and state universities in India. The study covered 20 central and 237 state universities. They found that Delhi University research outputs received more citations among the central universities, and Punjab University was the top in a state university. Delhi University got 7481 average citations per year, and Punjab University got an average citation per year 3835.50 in their respective competitor.

A study conducted by (Parabhoi & Sahu, 2019) to know the research output of the Himachal Pradesh University (HPU) during 1972-2015 using the Scopus database. The study focus on the types of publication, authorship styles, collaboration pattern, most prolific-author, and journals. In this study, the significant finding was, the large share of publication was from Physics and Astronomy with a total of 758 publications (25.04%), and the most preferred journal for publication was “Journal of Applied Polymer Science” and the most prolific author was “Chauhan G.S.”

To analyze the research productivity of five IITs from 2008 to 2017, a study made by (T. K. Das & Sahu, 2019) In this study period, a total of 82563 publications published by these five oldest IITs in India. The motto of the study is to analyze the annual contribution of these five IITs, most productive author, core research areas, collaboration pattern, the pattern of authorship, most cited journal/article etc.. The study showed that IITKGP contributed the highest number of publications (19349) and the most productive institution with the highest number of citations and H-index. On the other hand, Singh, B. is the most influential author from IIT Delhi with the highest publications.

(Verma & Shukla, 2018) analyzed the mapping of research publications and trends of publication in the Journal of Advances in Library and Information Science for the period of five years (2012-2016). In this study, researchers focused on different types of Bibliometrics parameters like authorship pattern of articles, references and geographical distribution etc. They examined that 251 articles published in this period. In the year 2015, the highest 62 number of papers published in the journal. The study also reported that the maximum numbers of documents come from collaborative research. Further, the study found that authors from Tamilnadu State contributed the highest number of publications.

(Parabhoi et al., 2017) analyzed the research productivity of the Dr. Yashwant Singh Parmar University of Horticulture and Forestry, Solan during 2006-2015 using the Scopus database. In this study 10 year period of time, the University published a total of 560 documents. The author analyzed the publication based on various Bibliometrics indicator such as authorship patterns, collaboration, the average number of citations per articles, author productivity etc. In this research, the significant findings were the most favourite journal for publication, "Indian Journal of Agricultural Sciences," and the most prolific author was "Sharma, N.”

(Kumar et al., 2015) studied Bibliometrics analysis of research publications of Gujrat University between 2004 and 2013. Bibliographic data extracted from Scopus database, a total of 760 articles affiliated with Gujarat University. The study reported that from 2008 onwards, the publication trend steadily increased in terms of publications' contribution. Further authors noted that the majority of the publications come from collaborative works in the year 2012. They also found, ActaPoloniaePharmaceutica-Drug Research most favoured journal in which they

published the majority of publications by Gujarat University. P.S. Srivastav was the most cited author, and V.K. Jain was the top authors by average citations per paper of Gujarat University.

(Okpe et al., 2013) examined the research output and pattern of publication among faculty in Nigerian Private Universities. For this study, data were gathered using the questionnaire method. The authors used descriptive statistics, frequency counts and simple percentage. For the hypotheses test, they used the Product Moment Correlation and Chi-square test. According to their hypotheses study, the relationship between faculty and pattern of research output publication was significant. The exact relationship seems between the qualification and pattern of research output publication of the faculty. But the significant difference in the pattern of publications based on gender.

4. Objectives:

1. To find out the year-wise research productivity of different 14 private universities of Himachal Pradesh (H.P.).
2. To define University wise and year wise citation growth during the study period 2004 to 2019 of these private universities.
3. To find out the most prolific author and ranked based on their productivity.
4. To find out the top preferred journals to the published research output of these universities.
5. To find out the most cited papers during the study period.
6. To analyze the most frequently used keywords by authors of these private universities.
7. To identify the collaborating countries among the authors.

5. Methodology:

To collect a comprehensive list of private universities of Himachal Pradesh (H.P.). Authors browsed the (HP-PREC) website as this is the authenticate website by the Government of Himachal Pradesh (HPPERC, 2020) (and collected the Private Universities list. A total no. 17 of Private Universities found. Later, the study removed such new universities or publications not located in Scopus. Scopus database was selected in this study; hence, Scopus, one of the most frequently used abstracting and indexing citation databases, assesses an organization's research output. Finally, 14 Private Universities were selected, and the publications data of these 14 private Universities of Himachal Pradesh were extracted from Scopus and exclude the 2020 citation data. The refined result was exported in CSV file and BibTex file format and then used for further analysis. The final data consisted of 3923 publications of 14 Private Universities of Himachal Pradesh between 2004 and 2019. For analysis of data study used Excel, R package and biblioshiny package and visualized that we used VOSviewer.

6. Data Analysis:

6.1 Year-wise Growth of Publication

In fig.1 it shows the year wise growth of publications of 14 private universities of Himachal Pradesh (H.P.). A total of 3923 publications found between 2004 and 2019. It was found that in the year 2004, only "four" papers were published by the private universities of H.P. 2019 was the most productive year. A total of 629 publications published by private universities of H.P. The publication grew upward from 2004 to 2009 and 2010 to 2016; however, the year 2004 and 2017 publications rate slightly dropped.

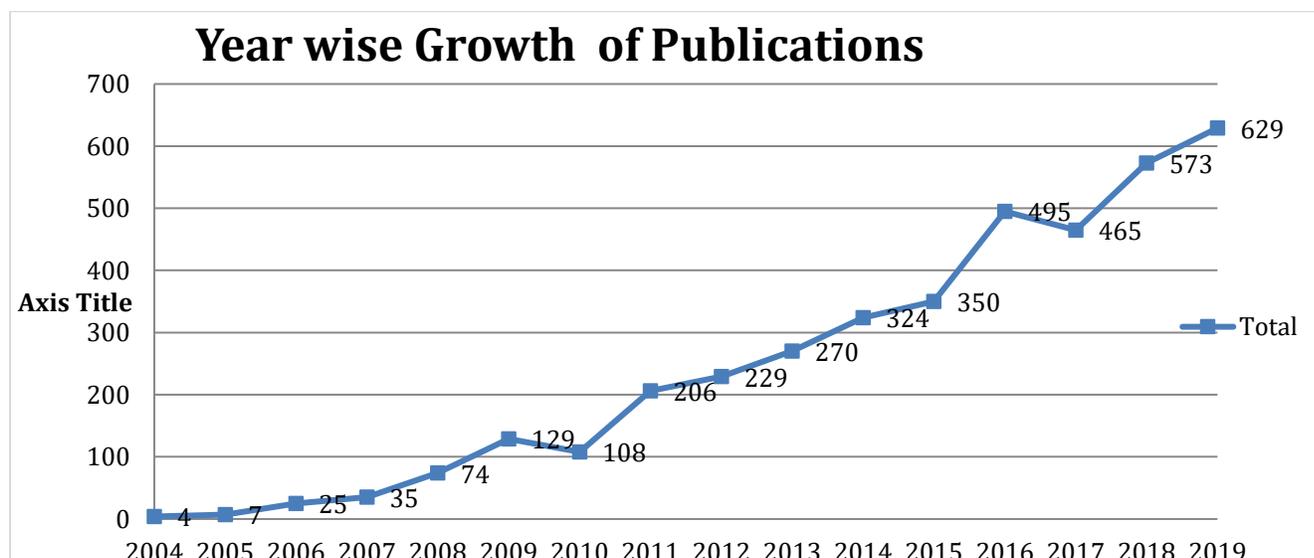


Fig.1 Year-wise growth of publications 2004-2019

6.2 University wise citation growth

In fig.2 it shows that the University wise citation growth during the period 2004 to 2019. In this fig, the Maharaja Agrasen University got a lower position than other universities, with 40 citations received during 15 year period. The highest and first position received by the Jaypee University of Technology in term of citations. The Jaypee University of Technology received 18246 citations, and it was the largest number of citation got by any individual university. Second, the position got by the Shoolini University with received 17182 citations, followed by Bahra University with 2455 citations.

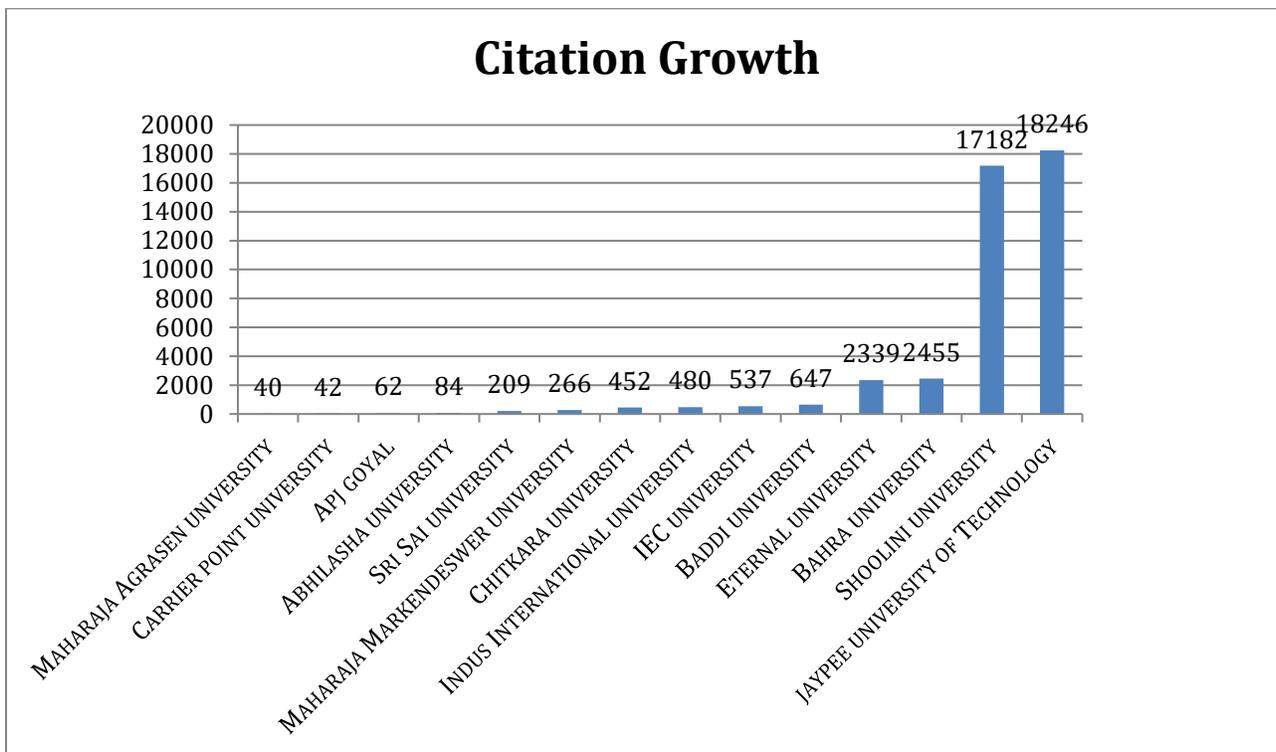


Fig.2 University wise citation growth

6.3 Year-wise growth of citation

Fig.3 deals with the year-wise growth of citations. This figure clearly shows that the citation growth was not stable; either it increased or decreased, which means the citation growth year-wise fluctuated. In the year 2004, the citation growth was slightly low; it received 16 citations than after the citation growth of citation steadily increased. However, in the year 2010, 2012, 2015, 2017 and 2019, the citation growth rate was decreased. In the year 2016 was the most cited year. A total of 5567 citations received.

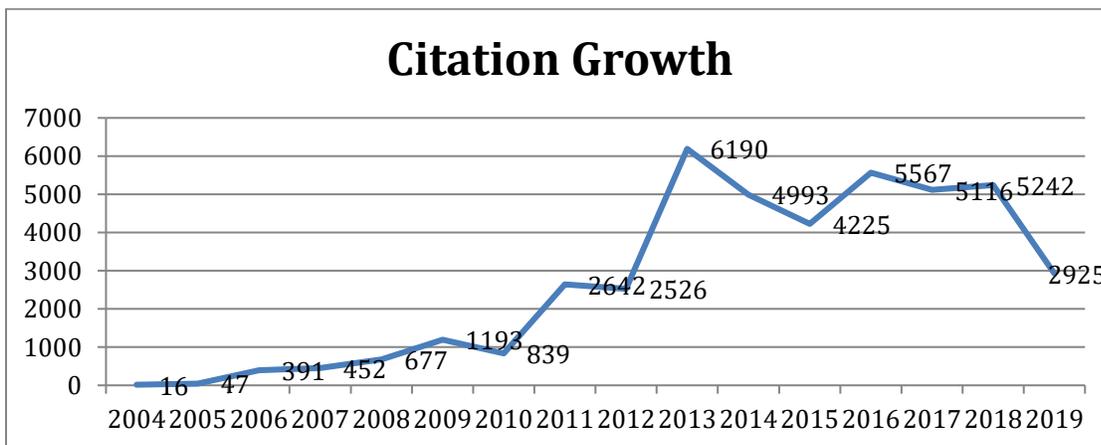


Fig.3 Year-wise growth of citation

6.4 Most prolific Authors

The table.1 shows the top ten authors are listed in the table. To identify top five authors; number of the contribution of publications were considered. From the table.1 it indicated that “Singh, G.” is the most productive author with “158” publications. The second most productive author was “Sharma, P.” with “115” publications. And the third most productive author was “Sharma, G.” with “99” document were published and so on.

Sl.No.	Author	Documents	University
1	Singh, G.	158	Jaypee University of Information Technology
2	Sharma, P.	115	Jaypee University of Information Technology
3	Sharma, G.	99	Shoolini University
4	Pathania, D.	95	Shoolini University
5	Nitin	80	Jaypee University of Information Technology

Table.1. Most prolific Authors

6.5 Most favorite source

This section deals with the most relevant source in the table. The top 10 most favourite resources were calculated. The study found that the Journal of High Energy Physics was the most favorite journal, where 77 articles were published from 2004 to 2019 by private universities of Himachal Pradesh. In this journal, the second positioned got by “Communications in Computer and Information Science”, in this journal, a total of 65 article published. The third most favourite sources journal was “AIP Conference Proceedings”, in this journal total of 54 articles were published by the universities from 2004 to 2019.

Title	No. of Paper
Journal of High Energy Physics	77
Communications in Computer and Information Science	65
AIP Conference Proceedings	54
Advances in Intelligent Systems and Computing	48
International Journal of Biological Macromolecules	27
Wireless Personal Communications	24
International Journal of Pharmaceutical Sciences Review and Research	23
International Journal of Pharmacy and Pharmaceutical Sciences	23
Journal of Molecular Liquids	23
Procedia Computer Science	23

Table.2. Most relevant source

6.6 The most global cited document published 14 selected Private Universities of HP

In table-3 shows that the highly cited literature published by 14 private selected universities of H.P. top ranked paper published collaboratively by Bahra University and Jaypee University of Technology. The article "Surface modification of inorganic nanoparticles for development of organic-inorganic nanocomposites - A review" published in the journal of Progress in Polymer Science with 1102 citations. The second highly cited paper, Kalia S. Et.al from Shoolini University, was published in "International Journal of Polymer Science" with 421 citations. The third highest highly cited articles published by Bharti B., et.al..with 318 citations from the Jaypee University of Technology.

Sl No	University	Title	Authors	Year	Source title	Cited by
1	Bahra University; Jaypee University of Technology	Surface modification of inorganic nanoparticles for development of organic-inorganic nanocomposites - A review	Kango S., Kalia S., Celli A., Njuguna J., Habibi Y., Kumar R.	2013	Progress in Polymer Science	1102
2	Shoolini University	Cellulose-based bio- and nanocomposites: A review	Kalia S., Dufresne A., Cherian B.M., Kaith B.S., Avâ©rous L., Njuguna J., Nassiopoulos E.	2011	International Journal of Polymer Science	421
3	Jaypee University of Technology	Formation of oxygen vacancies and Ti ³⁺ state in TiO ₂ thin film and enhanced optical properties by air plasma treatment	Bharti B., Kumar S., Lee H.-N., Kumar R.	2016	Scientific Reports	318
4	Shoolini University	Removal of methylene blue by adsorption onto activated carbon developed from Ficus carica	Pathania D., Sharma S., Singh P.	2017	Arabian Journal of Chemistry	304
5	Jaypee University of Technology	Pyrrrole: A resourceful small molecule in key medicinal heteroaromatics	Bhardwaj V., Gumber D., Abbot V., Dhiman S., Sharma P.	2015	RSC Advances	249
6	Shoolini University	Synthesis and characterization of a	Naushad M., Ahamad T., Sharma	2016	Chemical Engineering Journal	234

		new starch/SnO ₂ nanocomposite for efficient adsorption of toxic Hg ²⁺ metal ion	G., Al-Muhtaseb A.H., Albadarin A.B., Alam M.M., AlOthman Z.A., Alshehri S.M., Ghfar A.A.			
7	Bahra University; Jaypee University of Technology	Nanofibrillated cellulose: Surface modification and potential applications	Kalia S., Boufi S., Celli A., Kango S.	2014	Colloid and Polymer Science	208
8	Jaypee University of Technology	Improved lignocellulose conversion to biofuels with thermophilic bacteria and thermostable enzymes	Bhalla A., Bansal N., Kumar S., Bischoff K.M., Sani R.K.	2013	Bioresource Technology	181
9	Shoolini University	Fabrication and characterization of chitosan-crosslinked-poly(alginate acid) nano hydrogel for adsorptive removal of Cr(VI) metal ion from aqueous medium	Sharma G., Naushad M., Al-Muhtaseb A.H., Kumar A., Khan M.R., Kalia S., Shweta, Bala M., Sharma A.	2017	International Journal of Biological Macromolecules	151
10	Shoolini University	Quaternary magnetic BiOCl/g-C ₃ N ₄ /Cu ₂ O/Fe ₃ O ₄ nano-junction for visible light and solar-powered degradation of sulfamethoxazole from aqueous environment	Kumar A., Kumar A., Sharma G., Al-Muhtaseb A.H., Naushad M., Ghfar A.A., Stadler F.J.	2018	Chemical Engineering Journal	144

Table.3.The most cited document

References:

- Borah, K. (2021). Contribution of Selected Universities of Assam in Scholarly Publications During the year 2011-2020: A Bibliometric Study. *Library Philosophy & Practice (e-Journal)*, Summer 4-1. <https://digitalcommons.unl.edu/libphilprac/5489>
- Das, J. M., & Parabhoi, L. (2020). Research Productivity of LIS Women Faculty in India: A Bibliometric Study during 1988-2018. *Library Philosophy & Practice (e-Journal)*. <https://digitalcommons.unl.edu/libphilprac/4298/>
- Das, S., Yadav, S. K., & Verma, M. K. (2020). Research Productivity Of Mizoram University, Aizawl During 2002-2018 : A Bibliometric Analysis. *Journal of Indian Library Association*, 56(3), 1–11.
- Das, T. K., & Sahu, S. C. (2019). Bibliometric analysis of research publications of IITs: A study based on Scopus. *Sixth International Conference of Asian Special Libraries(ICoASL 2019), Rethinking Libraries and Librarianship*, 105–123.
- Gp, S., & Bv, N. (2016). Information research : South African journal of library and information science (2005-2015): A bibliometric study. *International Journal of Applied Research*, 2(12), 39–44.
- Hood, W. W., & Wilson, C. S. (2001). The literature of bibliometrics, scientometrics, and informetrics. *Scientometrics*, 52(2), 291–314. <https://doi.org/10.1023/A:1017919924342>
- HPPERC. (2020). *Himachal Pradesh Private Educational Institutions Regulatory Commission*. H.P. Private Educational Institutions Regulatory Commission. <http://hp.gov.in/hpperc/>
- Kumar, H. A., Dora, M., & Desai, A. (2015). A Bibliometrics profile of Gujarat University, Ahmedabad during 2004-2013. *DESIDOC Journal of Library and Information Technology*, 35(1), 9–16. <https://doi.org/10.14429/djlit.35.1.7699>
- Madaan, D. (2015). Himachal Pradesh : Research Oriented State as Visualized in SCOPUS. *10th International CALIBER 2015*, 118–127.
- Nair, S. V., & Yasmin, M. (2019). Research Developing in Indian Universities : a Bibliometric Analysis of Publication in Scopus. *International Journal of Civil Engineering and Technology*, 10(12), 50–59.
- Okpe, I. J., Simisaye, A. O., & Otuza, C. E. (2013). Research Output and Pattern of Publication among Faculty in Nigerian Private Universities : Babcock University Experience. *Information and Knowledge Management*, 3(9), 64–72.
- Parabhoi, L. (2019). Scholarly Publications of Academic Librarians in India from 1989-2018: A Bibliometrics Analysis. *Library Philosophy & Practice(e-Journal)*. <https://digitalcommons.unl.edu/libphilprac/2789/>
- Parabhoi, L., Bhattacharjee, H., & Dey, S. (2019). *Library and Information Science Research in East and North-East India*. Lambert Academic Publishing.
- Parabhoi, L., & Ghosh, A. (2019). International contribution in two Indian lis journals : A

Comparative study. *Library Philosophy & Practice (e-Journal)*.
<https://digitalcommons.unl.edu/libphilprac/3120/>

Parabhoi, L., & Sahu, R. R. (2019). Research Publications of Himachal Pradesh University during 1972-2015: A Bibliometric Study. In N. Singh, Sonal; Singh, B.K.; Thapa (Ed.), *Emerging Trends for SMART Libraries A Festschrift Volume in Honor of Professor V.P. Khare* (pp. 345–359). Shree Publishers and Distributors.

Parabhoi, L., Sahu, R. R., Dewey, R. S., & Parabhoi, D. (2020). Gender Disparity Among Indian Library and Information Science Professionals: a 20-year sample of publications from 1999-2018. *Library Philosophy & Practice (e-Journal)*.

Parabhoi, L., Sahu, R. R., & Kumari, N. (2017). *Research productivity of Dr. Yashwant Singh Parmar University of Horticulture and Forestry, Solan, Nauni indexed in Scopus during the Year 2006-2015: A bibliometric study*.

Parabhoi, L., & Verma, M. K. (2020). Coronavirus research output during 2001-2020: A Scientometrics Analysis. In *Library Philosophy and Practice*.
<https://digitalcommons.unl.edu/libphilprac>

Patel, P., & Bhatt, A. (2019). Quantitative synthesis of published research: A study of Gujarat university. *Library Philosophy and Practice, 2019*.

Pathak, T., Mishra, V. K., & Verma, M. K. (2020). Research Publication Analysis of Faculty Members of Gauhati University during 1989-2018: A Bibliometric Study. *International Journal of Library Information Network, 5*(1), 73–91.

Sahu, R. R., & Parabhoi, L. (2020). Bibliometric Study of Library and Information Science Journal Articles during 2014-2018: LIS Research Trends in India. *DESIDOC Journal of Library and Information Technology, 40*(6), 390–395.

Verma, M. K., & Shukla, R. (2018). Mapping the Research Publications Trends in Journal of Advances in Library and Mapping the Research Publications Trends in Journal of Advances in Library and Information Science (JALIS) during 2012 – 2016 : A Bibliometric Analysis. *International Journal of Library Information Network and Knowledge, 3*(2), 94–106.