BIBLIOGRAPHIC CONTROL OF PERIODICAL LITERATURE ON BUILDING MATERIALS PUBLISHED IN INDIA: A SCIENTOMETRIC STUDY

Abstract

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The study entitled “Bibliographic Control of Periodical Literature on Building Materials Published in India: A Scientometric Study” has focused on literature output of building materials by creating a bibliographic database of published research articles in Indian journals. A scientometric study has been done on the basis of created database. The objectives of the study were to create a machine-readable bibliographic database on the subject for highlighting India’s research output and developing a proper bibliographical tool; determine scientific productivity in terms of authorship pattern; find out the institution/organization engaged in research on the subject of the study under content analysis on the basis of keywords; ascertain the citation pattern, get the measurement of effectiveness and impact of the articles; develop a rank list of journals on the study; and identify potential authors/researchers in building materials.

For the purpose of this research, 704 numbers of published articles on building materials have been collected (scanned & recorded) from ten source journals; computerized database has been prepared through WINISIS software; the data for the study have been based on the created database; the data has been analyzed and presented in tabular as well as chart form; classification of the different aspects of building materials has been done on the basis of Universal Decimal Classification (UDC) (Medium English Edition) BS-1000.; different laws of bibliometric/scientometrics study have been applied for achieving the objectives; American Psychiatric Association (APA) Style Guide (www.lib.usm.edu/research/guides/apa.html) has been used for citation of references and recording of selected bibliography. The complete thesis work has been divided into six chapters viz. introduction, literature review, research methodology adopted, designed and created database, data analysis and discussion and finally finding, conclusions and suggestions.

Findings of the study are i) 704 articles have been scanned from ten numbers of Indian journals in English language during the spans of twenty years (1985 to 2004). The average publication per year was only 35 ii) on the basis of subject analysis, it has been found that ‘cements’ are the core area in the building materials as it contains 133 articles (18.89%). ‘Steel’ is in the second place constituting of 13.21% and ‘Reinforced concrete’ is on the third place containing 11.78% of the total output. The academic institutions have contributed more articles i.e. 40.90% of the total output and placed in first position, while private sector is placed second contributing 28.69% and government funded research organizations are at third position contributing 25.14%. Productivity in terms of output of research institutions collectively and individually but as per findings, academic institutions have contributed more and are placed on the first position. Individually ‘Central Building Research Institute’ has given maximum output. The maximum numbers of articles i.e. 240 have been published in the ‘Indian Concrete Journal’ contributing 34.09% and ‘New Building Materials & Construction World’ published 185 articles and is placed in the second position as for analysis of the ranking of journals. The fourth hypothesis has been proved in the since ‘Indian Concrete Journal’ is the most popular journal among researchers for publish their articles in comparison to other journals. It has been found that 14 countries contributed the total output i.e. 704 articles on building materials. Since it is India based study depending on Indian journals, therefore India has contributed to maximum output i.e. 90.05%. Other countries like the USA (3.40%), Canada 1.70%, Bhutan and the UK contributed equally i.e. 8 articles (1.13%). The contribution of single authors is maximum i.e. 23 articles (45.85%). The years between 2001-2004 (five years span) were the most productive years i.e. 86 (12.21%) on the basis of analysis of five year-wise contribution of building materials and
less contributions were the during 1990-1994 i.e. only 52 articles (7.38%). N.P. Rajamane, Scientist, SERC, Chennai is the highest productive author and Manjit Singh, Scientist, CBRI, Roorkee is the second highest productive author in building materials. They contributed 14 and 12 numbers of articles consecutively. Central Building Research Institute (CBRI), Roorkee has been contributed the maximum articles i.e. 92 numbers followed by Structural Engineering Research Centre (SERC), Chennai which contributed 38 articles. It has been found on the basis of citations analysis that 50 articles have appended 10 references each, followed by 44 articles appeared 07 references. It has been remarkable that 173 articles have not appended any references as categorized on ‘NIL’ references. In separate analysis of nil references articles, it has been found that NBM&CWL has maximum number of articles i.e. 127 with nil references, followed by the ICJ containing no references in 45 articles.

The subject wise database on ‘building materials’ will be very much helpful for researchers as a bibliographic tool to avoid the duplication of research. Creation of database on specific subjects has to be given to the libraries on their respective research institutes. Scientometric study on the specific databases is certainly help to policymakers to see the trends of research, and identify areas for funding further researcher.