Chapter 6

FINDINGS, CONCLUSIONS AND SUGGESTIONS

6.1 Findings of the Study

1. Total 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. Therefore, it is not substantive in respect of quantity. Hence the first hypothesis has been rejected.

2. On the basis of subject analysis, it has been revealed 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 third place containing 11.78% of the total output. The second hypothesis was that the 'composite materials' and 'fly ash' will be the core areas of research in building materials, but it stands rejected since 'cement' and 'steel' are placed in first and second positions in building materials research.

3. 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%. The third hypothesis was that the productivity in
terms of output will be from research institutions collectively and individually but as per finding here academic institutions have contributed more and are placed of first position. Individually ‘Central Building Research Institute’ has given maximum output. Therefore, the third hypothesis stands partially proved.

4. The maximum numbers of articles i.e. 240 have been published in ‘Indian Concrete journal’ contributed 34.09% and ‘New Building Materials & Construction World’ published 185 articles and placed second position as on analysis of ranking of journals. The fourth hypothesis has been proved since ‘Indian Concrete Journal’ is the most popular journal among researchers to publish their articles in comparison to other journals.

5. It has been seen that 14 countries contributed the total output i.e. 704 articles on building materials. Since it is India based study based on Indian journals, therefore India has contributed maximum output i.e. 90.05%. Other countries like USA (3.40%), Canada 1.70%, Bhutan and UK contributed equally i.e. 8 articles (1.13%).

6. The contribution of the single authors is maximum i.e. 23 articles (45.85%).

7. 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 contribution were the during 1990-1994 i.e. only 52 articles (7.38%).

8. 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 number of articles consecutively.

9. Central Building Research Institute (CBRI), Roorkee has been contributed the maximum articles i.e. 92 numbers followed by Structural Engineering Research Centre (SERC), Chennai contributed 38 articles.

10. 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 each. It has been remarkable that 173 articles have not been appended any references as categorized on ‘NIL’ references.

11. In separate analysis of nil references articles it has been found that NBM&CW has maximum articles i.e. 127 has nil references, followed by the ICJ containing no references in 45 articles.
6.2 Conclusions

On the basis of major findings the conclusion are drawn as:

1. ‘Cements’ and ‘Steel’ are still important area of research among the basic building materials;
2. ‘Indian Concrete Journal’ has a legacy of publication since last 78 years and still popular among researchers in building materials.
3. ‘New Building Materials & Construction Review’, comparatively a young journal (1994) is the next choice of researchers in building materials. It has published 127 articles without any reference (nil), which is not a healthy trend for research publications.
4. Academic institutions have been contributed substantially & slightly more than private and research institutions due to wider presence i.e. colleges to universities where they perform teaching as well as research activities.
5. Individual organizations such as ‘Central Building Research Institute’ have been contributed maximum number of research articles. CBRI is a research institute exclusively engaged in R&D activities in building science and technology.

6.3 Suggestions

1. There is an urgent need for creating a subject-wise bibliographic database in a micro. It is a very important tool for researchers to retrieve information about the past and recent developments on their R&D activities.
2. Subject-wise bibliographic database assists in exploring and advancing the new research areas.
3. The national output of the research in any area can not be measured on the basis of international bibliographic databases since these databases do not cover all the journals published from a country like India. Hence Bibliographic control has to be initiated at national level in India
4. Indigenous databases need be developed as these may help the policy makers towards evaluation of research for formulation of national science policy and methods of research funding.
5. Creation, development and continuation of subject-wise national bibliographic database can not be assigned to any centralized agency or institute due to non availability of all the publications, expertise as well as adequate infrastructure. A
central nodal agency may be given the responsibility to co-ordinate different sister organizations in the creation and continuation of specialized databases. The central nodal organization may provide access to these databases through a web and a mirror site. The central nodal agency may develop a mechanism for ‘Indian Journal Citation Report’ for finding impact factor of Indian journals.

6. Government funded specific (subject based) research institutes may take the responsibility to develop and maintain the bibliographic database of Indian journals in their own subject areas. Since the subject expertise as well as wider coverage of literature is usually available in a library, the concerned library may take the responsibility for developing and maintaining the databases. Here government funded research institutes mean the chain of laboratories and institutes located in different parts of the country under administrative control of ‘Council of Scientific of Industrial Research’ (CSIR); Indian Council of Agricultural Research (ICAR); Indian Council of Medical Research (ICMR); Indian Council of Social Science Research (ICSSR) and those under Department of Science & Technology (DST) and Department of Bio Technology (DBT).

7. The present database on ‘building materials’ needs be continued and updated regularly by adding more and more Indian journals.

8. ‘Scientometric analysis’ should be conducted from time to time on the already created database to ascertain the research output, trends, and collaboration as well as to identify the potential researchers and institutes along with core journals.