

## ABSTRACT

In the present study, the investigator has attempted to assess the Use Patterns of Electronic Information Resources by Aerospace Scientists and Engineers in 16 selected aerospace organizations in Bangalore, namely: (1) **ADA**=Aeronautical Development Agency, (2) **AFTC**=Air Force Technical College, (3) **ADE**=Aeronautical Development Establishment, (4) **ASTE**=Aircraft Systems Testing Establishment, (5) **CABS**=Centre for Airborne Systems, (6) **CEMILAC**=Centre for Military Airworthiness and Certification, (7) **C-MMACS**=Centre for Mathematical Modeling and Computer Simulation, (8) **DARE**=Defense Avionics Research Establishment, (9) **LRDE**=Electronics and Radar Development Establishment, (10) **GTRE**=Gas Turbine Research Establishment, (11) **HAL**=Hindustan Aeronautics Limited, (12) **IAM**=Institute of Aerospace Medicine, (13) **ISRO-ISTRAC**=Indian Space Research Organization, (14) **IISc**=Indian Institute of Science, (15) **JNCASR**=Jawaharlal Nehru Centre for Advanced Scientific Research, and (16) **NAL**=National Aerospace Laboratories.

These aerospace organizations fall under the broad category of (a) Council of Scientific and Industrial Research (CSIR), (b) Defense Research and Development Organizations (DRDO), (c) Indian Air Force (IAF), (d) Public Sector Undertakings, (e) Department of Space (ISRO), and (f) Educational and R&D institutions.

On a thorough review of literature, the investigator has found that there is hardly any Indian study carried out on ascertaining the Use Patterns of Electronic Information Resources by Aerospace Scientists and Engineers in Bangalore. Literature survey on this topic reveals only 2 abstracts pertaining to aerospace scientists and engineers **Pinelli, (1991, 2001)**, on the Information Seeking Behaviour Amongst the US Aerospace Scientists and Engineers and an Indian study on the Information Seeking Behaviour of Indian Space Technologists, **Sridhar, (1987)**. In the context of exploding aviation activity in the Asian region in general and India in particular, aerospace is seen as a key technology. Hence, the study undertaken by the investigator is not only unique, but something that has not been done before with specific reference to the Indian Aerospace Engineering Community.

Interestingly, the Aerospace Information Management – UK(AIM-UK) project undertaken by, **Hanley; Harrington and Blagden (1998)**, found compelling evidence of ‘under-utilization’ of ‘electronic information resources’ by the aerospace scientists and engineers. It recommended a number of initiatives to improve access to useful electronic information resources, and to reduce the threat of ‘information overload’. In particular, there was a call to establish an Internet Gateway and Portal to the aerospace and defense community that would act as a ‘jumping-off-point’ for effective exploration and retrieval of information on the World Wide Web. AERADE which stands for (Aerospace and Defense Resources) was launched in November 1999. It is specifically designed to meet this need. It is an initiative developed by the Cranfield University to enable aerospace and defense experts to find relevant information on the Internet.

Scientists and engineers working in the various Indian Aerospace Organizations are currently working on projects which are of strategic importance to this country. These scientists heavily depend upon rapid collection of information from various 'electronic information resources'. Hence, 'electronic information resources' are obviously an upcoming and endearing activity amongst all the scientists and engineers irrespective of their discipline and work environment.

The present research study is restricted to the City of Bangalore and 16 prominent aerospace organizations selected for the study. A total number of 650 survey questionnaires were distributed amongst the aerospace scientists and engineers representing these aerospace organizations. Out of 650 questionnaires distributed, a total of 612 were received back and finally 583 (89.7 percent) were selected which were found suitable for the study.

The methodology carried out by the researcher in conducting this research survey has been through survey techniques such as (a) A Structured Survey Questionnaire and (b) Analysis of e-Journal full-text download patterns using the Web Log Analysis. The structured questionnaire used in the study was divided into 7 sections, A to G, namely: (A) **Profile of the Respondents (Demography)**, (B) **Use of Electronic Information Resources**, (C) **Use of the Internet**, (D) **Use of Electronic Journals**, (E) **Use of e-Databases and CD-ROM Databases**, (F) **Role of the Library in promoting e-Resources Usage and the Importance of Digital Libraries** and finally (G) **e-Journal Web Log Analysis**.

For Web Log Analysis a separate questionnaire was distributed to the concerned Network Administrators / Chief Librarians and Web Administrators of the aerospace organizations.

The analysis and interpretation of data has been carried out based on the broad sections indicated in the above paragraph. Also, most importantly the Analysis and Interpretation of the Data is also substantiated with relevant  $\chi^2$  tests *associating the 6 Demography Variables* namely: (1) Age (2) Gender (3) Qualification, (4) Occupation (5) Category Wise Distribution of the Respondents (Aerospace Scientist or Aerospace Engineer) and (6) Specialization profile of the Respondents with the (A) Use of Electronic Information Resources (B) Use of the Internet (C) Use of Electronic Journals (D) Use of e-Databases and CD-ROM Databases and (E) Role of the Library in promoting e-Resources Usage.

The scope of the study is limited to the 16 selected aerospace organizations located in the city of Bangalore. The study restricts itself to the broad classification of the occupation profile of the aerospace scientists and engineers into 4 major categories, namely: (a) **Scientific / R&D** (b) **Armed Forces** (c) **Teaching** and (d) **Managers**. The scope of the study also extends to the broad area of specialization of the aerospace scientists and engineers, categorized under six broad headings, namely: (a) **Thermal and Fluid Sciences** (b) **Avionics, Guidance and Control** (c) **Aerospace Structures and Allied Mechanical Sciences** (d) **Materials and Metallurgy** (e) **Flight Operations and Allied Disciplines** and (f) **General Engineering and Support Sciences**.

The study restricts itself to the age group of the aerospace scientists and engineers between 21 to 60 years.

The complete analysis of data in this research study has been carried out using the SPSS Package (Versions 11.5 and 16) and Microsoft Excel. All the relevant tables have been generated and analyzed using the SPSS package. Relevant statistical tests were applied on the data like: (a) Chi-Square ( $\chi^2$ ) (b) ANOVA (Analysis of Variance) (c) Probability of obtaining a test statistic using P-Value tests (d) Arithmetic Mean (e) Standard Deviation and finally (f) Coefficient of Variation (CV). Data entry for the entire 650 questionnaires was done using the SPSS data entry interface.

The results of the analysis are described in Chapters V and VI. The Hypotheses proposed at the beginning of the Study (Chapter III) were evaluated with the relevant data, as described in Chapter VII.

