The study explores the evidence-based usage patterns of Higher Education Commission (HEC) e-journals' usage at the University of Engineering & Technology (UET), Lahore in Pakistani scenario through SAWMILL and MS Excel. The poster contents share the most used and less used databases, by education level and gender. The results revealed that usage of scholarly publishers’ databases was more as compared to subject specific databases in the field of science, engineering and management. Moreover, female users frequently accessed e-journals from hostels as compare to boarding male users. Individuals identified through their user names were mostly from undergraduate programs as compare to graduate, post graduate students and faculty members. The results will help HEC in access management, budget allocation; and information professionals in designing digital literacy skills programs.

1. Introduction

The poster presents identified patterns of Higher Education Commission (HEC) e-journal databases by the engineering community at the University of Engineering & Technology, Lahore. Log analysis technique is quite technical and new in Pakistani scenario to get evidence-based results. The study explores the frequencies of accessed databases by various users since give and take between user and system has great influence on the user’s online information behaviour in a specific environment to design an effective information retrieval system and assessing future information needs of users. The usage statistics are significant in policy making for access management, budget justification and designing literacy skills programs for the improvement of services as well. The results presented here address the questions:

Q.1 Which are the most-used and least-used HEC e-journal databases at the University of Engineering & Technology, Lahore?

Q.2 What are different patterns by education level and gender?

2. Literature Review

Many studies were conducted by using log analysis technique to explore e-journals’ usage patterns (Lee & Sanderson, 2010; Tenopir, Wang, Pollard, Zhang & Simmons, 2004; Cooper, 1983) and information seeking behaviour (Nicholas, Clark, Jamali, & Watkinson, 2014; Davis, 2004; Davis & Solla, 2003) for budget justification (Suseela, 2011) in academic settings on different timings. Although several self-reported studies have explored the usage of e-journals and HEC digital library (Arshad & Ameen, 2017; Bhatti, Chohan, & Asghar, 2014; Warraich & Tahira, 2009), but evidence-based study to explore usage patterns of e-journal users in academic environment has not been conducted yet in local scenario. The study fills the literature gap in Pakistani settings.

3. Research Design

Transaction log analysis technique was selected to get evidence-based usage statistics of e-journal databases which could be difficult to obtain in self-reported surveys. One-year
(January to December 2016) proxy log server data of HEC e-journal databases usage at the University of Engineering and Technology, Lahore were filtered from the proxy log files with the help of Network Administrator. SAWMILL log analyzing software was used to analyze the raw log data and MS Excel was used for filtration, tabulation and graphic presentations of usage frequencies of different patterns. All the potential users like faculty, students, staff and researchers were covered in the log analysis. Thus, the results of the study can be generalized on all the users of HEC e-journal at UET during the year 2016.

4. Findings

The results revealed that total 858,325 pages of HEC e-journal databases were viewed during year 2016 at UET. Only one fourth (n=357) visitors were identified as individuals through their username out of 1,485 recorded visitors. The remaining 1,128 visitors were recognized as systems used by several individuals. The size of data used in page view or downloading was 37.79 Gigabyte during the year under study. The number of 14,412 sessions (almost 8 sessions per hour) show the activity pattern of HEC e-journal users through the year. Time equal to over 3189 hours (133 days) was spent to use e-journal databases. The average daily use of HEC e-journal databases was 9 hours which shows the critical use of the scholarly literature for research work by engineering community.

4.1. Most Frequently Used Databases

The results indicate that use of scholarly publisher’s databases was more frequently accessed by all the disciplines of sciences, engineering and management at engineering university as compared to specialized databases in the year 2016. Out of 14,412 sessions, the engineering community conducted 6,781 sessions on searching Elsevier database. The second most used database was Springer Link with 5,148 sessions. Then Scopus database remained third with 3,908 sessions. Wiley (2,031), Taylor & Frances (1,201) and Emerald Insight (1,181) databases were also remained among the frequently used databases according to number of sessions. The results were opposing to the study by Nicholas, Huntington, Jamali and Tenopir (2006) where databases like ACS and AIP were among top 20 used e-journal databases which might be due to contextual change.

4.2. Less Frequently Used Databases

Only 118 sessions were conducted to access databases through HEC Summons domain and 48 sessions through HEC National Digital Library’s domain. Mostly the users were using search engines like Google or Google Scholar due to ease for locating and accessing their needed articles from HEC databases as explored by Nicholas, Clark, Jamali and Watkinson (2014); Arshad and Ameen (2017). Similar low usage results of HEC e-journals through library website were also reported by Arshad and Ameen (2015). All the subject specific databases like American Association of Physics Teachers (AAPT), American Mathematical Society (AMS), American Society of Mechanical Engineering (ASME), American Physical Society (APS), IMF ELibrary, Brill remained in the less used databases with less sessions and less session duration for having limited number of users in those subjects. The results supported Nicholas, Clark, Jamali and Watkinson (2014) who found engineering journals in bottom 10 used journals.

4.3. Gender based Usage of E-Journal Databases

Results of the study indicated that boarding females were more frequently accessing HEC e-journals at UET as compared to males in hostels. The number of viewed pages (15293), used data size (650 MB), sessions (551) with time duration (over 3 days) used by female students were almost three times more than male boarding students. There are 3179 male boarders (in 11 hostels) and 850 female boarders (in 4 hostels). Furthermore, females might had less outdoor activities in off timings than males in hostels.

4.4. Degree Level of Identified as Individual Visitors

Only one fourth (n=357) visitors of e-journal databases were identified as individuals while
accessing the HEC digital library. The identification could become possible through their registration numbers/IDs like 2016ce--, 2015philappphy--, 2014phdchem--. The number of undergraduate students (n=300) was five times more than post-graduate and Ph.D. students (n=56). Four identified M.Phil students were from Physics department. Identified two Ph.D. students and a faculty member were from Chemistry Department. Frequent users from chemistry and chemical department supported the findings of Davis and Solla (2003).

5. Conclusion

The study is in process and many other things regarding online information or searching behaviour, usage over time, frequent access points, searching behaviour etc. are to be explored to report later. It is concluded that the usage of HEC subscribed scholarly publishers’ databases like Elsevier, Springer, Scopus, and Wiley was more regular as compared to subject specific like AAPT, ASME etc. The heavy usage of publishers’ databases might be due to the reason that all the community of science, engineering and management used these databases. Whereas, databases of specific subjects were used only by limited number of that subjects’ students. The access seems to be indirect due to less used domains of HEC digital library and Summon. Females boarding students were more frequently using HEC e-journals as compared to male boarders. The analysis concludes that self-reported surveys do not represent the complete picture of usage in such type of studies necessary for collection building and policy making. The obvious reason of frequent undergraduate users could be the greater number of students in the degree level. Theoretically, the study will fill the literature gap in Pakistani scenario. Practically, the results will help HEC in access management and information professionals in designing literacy skills programs or improving services. Economically, the findings can be helpful in decision making at the time of renewing subscription by replacing least used with the required ones or offering literacy skills program for increasing the usage.

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References


