

Information Access Causes and Activities of Faculty Members in Engineering Institution

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ABSTRACT: *This research's main aim is to analyze the engineering college faculty members' practical usefulness of digital information resources during their purpose of library visits in the digital environment. Based on the aim, a pretested, standardized questionnaire was prepared and used as a data collection tool. The survey method is used for the collection of primary data. Tirupur and Coimbatore district Anna University affiliated Engineering College Teaching Faculty members are used as research subjects. There are 972 faculty members involved. Independent variables are gender, educational qualification, designation, and experience. The dependent variable is the effective use of digital sources. Tests of null and alternate hypotheses are framed to test the usefulness of digital resources. ANOVA test is applied. 57.22 percent of the males and 42.78 percent of the female faculty members involved in this study. 86.63 percent of the total faculty members visited the library at least once weekly. One hundred percent of the faculties' used the library to borrow books and update their professional knowledge. A significant difference is observed between the use of digital resources and their gender and experience.*

Keywords: Use of Digital Resources, User Study, Engineering Faculties

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1. Introduction

The term "electronic resources" is an umbrella term that encompasses such expressions as digital resources and digital collections. Reitz (2004) defined "digital resource collection" as "materials converted into a machine-readable format or produced in electronic forms." In the information world, all users in developing countries extensively use e-journals, e-books, electronic reference sources, and so on. Their debut in the information society has significantly boosted the information sector. They have the advantage of speed, ease of search, etc. Libraries have traditionally played an essential role in universities' learning and teaching activities; students had to enter the library to find books and journals. However, with an increasing number of

electronic resources available outside the library, from the desktop, it is easy to see how both the learner and the teacher might bypass the library altogether.

We, in this work, have discussed a few concepts of electronic resources with the help of data-driven. The data is collected from selected engineering institutions in South India.

1.1 Terminologies

An electronic resource is defined as "any work encoded and made available for access through the use of a computer." Both Remote Access and Direct Access are available in encoded format. Remote Access refers to the use of electronic resources via computer networks. Direct Access needs no user intervention or any credentials to be given to connect to information resources. Information access refers to "any electronic resource, remote or direct access, where (1), the library provides access to through official contractual, licensed, or other agreements (any of these electronic resources may or may not be owned by or housed at the library) or (2) the library receives through its acquisitions processes (e.g., purchase, gift, exchange, copyright deposit, ISSN requests, and transfer)".

Electronic resource collection refers to "electronic resources owned by the library and selected for the permanent collections. It may also include resources stored elsewhere for which the library has permanent ownership rights". Link refers to "pointers from the library's web resources or bibliographic records to remotely access data". Archiving refers to the "process of maintenance in a secure and permanent digital repository managed by the library or for the benefit of the library."

2. Review of Literature

Information needs and information-seeking behavior of Nanyang Technological University (NTU) Singapore computer science engineering students were observed based on books, lecture notes given by the faculties, friends, and manuals prepared by the faculty members. The study has revealed some interesting insights. Online databases and electronic sources account for quite common use for their needs. Digital resources are now well-established and recognized tools of communication and research. However, the electronic media could not significantly change research scholars' information-seeking behavior. The resources had been under-utilized, which otherwise is implicit also. Traditional resources are still in use as earlier Chandel, Mezbah-UL Islam, Sudhir Gupta, (2003). This study recommended that practicing library science professionals make the campaign to introduce electronic information resources and their access techniques to young students' communities for better utilization Majid and Tan (2002).

Doraswamy (2007) conducted a study relating to the tapping knowledge and use of the digital library resources of the faculty members of an engineering institution. The study's primary objectives were to determine the faculty members' familiarity, frequent use of library resources, utilization of services, and adequacy. He used a questionnaire tool to collect the primary data. This study's results showed that 53.63 percent of the respondents were familiar with using digital resources. The Result reveals that 86.67 percent of the respondents used digital resources to enhance subject knowledge, and 49.37 percent stated that the digital information was sufficient. The study also suggested that user orientation programs should be implemented to better utilize digital resources. The awareness level should be increased to maximize the usage of online journals. Svensson and Chaib (2005) studied the impact of digital resources on education and found that cooperation between students and teachers has a shared consciousness. Anttila et al (2012), in their study, used resources as tools to acquire digital teaching materials for online or offline learning activities through wired or wireless networks (Hockly, 2012). Yoon et al. (2012) stated that digital learning (E-Learning) was initially advocated by Jay Cross in 1999. As time progresses with digital technology tools, many new developments have been reported, including Internet-based training, web-based training, online learning, network learning, and distance learning. Doris Holzberger et al. (2013) regarded digital resources as providing digital forms of media (e.g., texts or pictures) through the web. The provided learning content and digital resources, enhanced learners' learning and aimed to record teaching effectiveness or promote personal knowledge and skills.

Most digital resources are managed by learning institutions and are generally located to the reading public or communities [Soroya S H and Ameen K 2018 and Cabrerizo 2015]. The impact of ICT makes digital libraries readily accessible by many users. Digital libraries are valuable resources that ensure that pertinent information is easily accessible and retrievable by more users [Shahriza et al., 2007, Edward et al., 1995]. Well-equipped digital libraries have incremental benefits to readers in terms of

usability [Park et al. 2009]. Adequate digital resources are accessible, and information can be ubiquitously retrieved [Owusu-Ansah et al., 2018]. Recently, digital libraries have received a lot of interest across the world [Borgman C L 1999]. Many research addresses the issues and challenges in digital libraries, such as the library of the inscription Cultural Heritage, which provide knowledge about collections of cultural heritage [Audunson R A and Shuva N Z 2016]. The absence of digital libraries has been limiting distance education in some places due to a lack of strategic support, consistent policies, and specific funding for the design of digital libraries [Peters et al. 2015]. To ensure that readers are satisfied and remain loyal, Chinese university libraries have received support based on objective and subjective criteria to improve the quality of digital library services [Xiaolin, 2006].

A statistically significant difference is observed between the engineering college faculty members' frequency of accessing online journals and the independent variables like gender, experience, and designation in a major study. A significant difference is also observed between the gender of the engineering college faculty members and their opinion about the increase in research publication while using electronic information, Sathivel Murugan and Ramesh (2020).

3. Methodology

We have designed a model to collect data for this work. It is a quantitative study based on primary data solicited. A survey is the most appropriate method for this research. From the collection of preliminary data, a pretested standardized questionnaire was used. The Raosoft online calculator calculated sample selection. This study uses teaching faculty members (972) from Anna University affiliate engineering colleges in the two districts of South India. There are one thousand one hundred questionnaires distributed. Nine hundred and seventy-two (88.4) filled questionnaires are used as the primary source of the data.

3.1. Aim

This research's main aim is to "Analyze the engineering college faculty members' purposes of library visits based on the frequency and use of the digital resources in the digital environment." The purpose of library visits and the usage of digital resources are dependent variables of this study for data analysis. The independent variables are faculty members' gender, designation, educational qualification, and experience. A pretested, standardized questionnaire was prepared and used as a data collection tool.

The following null and alternative hypotheses are framed for data analysis.

Null hypothesis (H_0). There is no significant difference between the engineering college faculty members' gender, designation, educational qualification, and experience and their frequency of library visits, the purpose of visits, and use of electronic resources.

Alternate Null hypothesis (H_1): There is a significant difference between the engineering college faculty members' gender, designation, educational qualification, and experience and their frequency of library visits, the purpose of visits, and use of electronic resources.

4. Data Analysis

4.1 Demographical details of the Respondents

Table 1 depicts the faculty members' demographical details. There are 972 teaching faculties involved in this study. Among the total participants (972) in this survey, 57.72 percent of male and 42.28 percent of the female respondents involved this research. Based on the teaching faculty's educational qualification, 68.62% of the faculties have a PG, and 31.38% have a PG with a Ph.D. in engineering. Among the male respondents (561), 69.16 percent and 30.84 percent have PG and Ph.D. qualifications in their respective branches. Similar to females (411) 67.88 percent and 32.12 percent of them have PG and PG with Ph.D. Qualification. As per the all India Council of Technical Education (AICTE), faculties' designation is classified into Assistant Professors (37.14), Associate Professors (33.33), and Professors (29.53). Among the Assistant professors (361), 89.75 percent and 10.25 percent have PG and PG with Ph.D. qualifications. 64.82 percent of the Associate Professor has PG in engineering qualification, remaining 35.19 percent of them has PG with a Ph.D. qualification. Among the Professors, 46.34 percent and 53.66 percent have PG in Engineering and PG with Ph.D. qualifications. Experiences of the faculties have been grouped into below five years, 5-10 years, 11-15 years, 16-20 years, and above 20 years. Based on experience, 15.95% of the respondents have below five years of experience, 32.51% between 5 and 10 years, 28.91% between 11 and 15 years, 11.73% between 16 and 20 years, and 11.32% have above 20 years of experience.

Demographical Details	PG 667(68.62)	Ph.D 305(31.38)	Total 972(100)
Gender			
Male	388(69.16)	173(30.84)	561(57.72)
Female	279(67.88)	132(32.12)	411(42.28)
Designation			
Assistant professor	324(89.75)	37(10.25)	361(37.14)
Associate Professor	210(64.82)	114(35.19)	324(33.33)
Professor	133(46.34)	154(53.66)	287(29.53)
Experience			
< 5yrs	111(73.50)	40(26.4)	151(15.95)
5-10 yrs	269(85.13)	47(14.87)	316(32.51)
11-15 yrs	134(47.69)	147(52.30)	281(28.91)
16-20 yrs	74(64.91)	40(35.09)	114(11.73)
20 yrs	79(71.17)	31(28.83)	110(11.32)

(Figures in parenthesis denotes percentage)

Table 1. Demographical Details of the Respondents

4.2. Frequency of Library Visits

The statistically significant difference between the engineering college teaching faculties' frequency of library visits and their independent variables, gender, educational qualification, designation, and experience. Table 2 describes the faculties' library visits. 58.23 percent of the respondents' visited the library daily. 28.39% of the respondents are visited weekly once, and 13.37 % visited fortnight only. However, among the total sample, 86.63 percent of the total respondents visited the library at least weekly once.

No. of Respondents	Frequency of Library Visits		
	Daily	Weekly Once	Fortnightly
	566(58.23)	276(28.39)	130(13.37)
Total	842(86.63)		130(13.37)

(Figures in parenthesis denotes percentage)

Table 2. Faculties Frequency of Library visits

4.3. Purposes of Library Visits

One hundred percent of the faculty members visited the library to borrow books and up-to-date subject knowledge. Table 3 expresses the purposes of the library visits. The means of the remaining purposes are not identical. Consulting reference sources (76.95), internet / online database access (73.66), preparing for their regular classes (72.84), writing research papers (65.33), research works (63.07), Xerox/printing (36.52), and relaxation (23.04) are in the decreasing rank of the purpose of visiting the library.

It will be analyzed with faculties' educational qualifications and designation by a one-way ANOVA statistical tool. Null and alternative hypotheses are framed for the test.

Null Hypothesis (H_0): There is no significant difference between the educational qualification, designation of the engineering college faculties, and their purpose of library visits.

Alternate Hypothesis (H_1): There is a significant difference between the educational qualification, designation of the engineering college faculties, and their purpose of library visits.

The null hypothesis is accepted between faculty members' educational qualifications, designation of the engineering college faculties following purposes, borrowing books, update subject knowledge. An alternative view is accepted in consulting reference sources, internet access/online database, preparing for classes, writing research papers, photocopying relevant materials, relaxation/refreshing the mind.

S. No.	Purposes of library visits	Percentage of the respondents	Educational Rank	One way Qualification ANOVA	Designation One way ANOVA
1.	Borrowing books	100	1	NS	NS
2.	Update the subject up-to-date	100	1	NS	NS
3.	Consulting reference Materials	76.95	2	S	S
4.	Digital resource / online database Access	73.66	3	S	S
5.	Preparing Class	72.84	4	S	S
6.	Writing research paper	65.33	6	S	S
7.	Research Project Works	63.07	5	S	S
8.	Xerox / Printing	36.52	8	S	S
9.	Relaxation / Refreshing Mind	23.05	9	S	S

(Multiple choices are accepted)

Table 3. Purpose of Library Visits

4.4. Use of Digital resources

In engineering, college libraries subscribe to the AICTE recommended e-resources ASME, ASCE, IEEE, Elsevier, IETE, Wiley-Blackwell, McGraw-Hill, ASTM, J-Gate, DELNET, IEI, IETE, ISO, and NDL for the betterment of staff and students' caliber.

Among the total sample (972), 61.63 percent of them used the digital resources daily, 7.72 percent of them are used weekly twice, 23.66 percent of them are used weekly once, 3.49 percent of them are used fortnightly and occasionally for their personal and professional developments in teaching research & development. It is further analyzed.

Often Use of Digital Resources	Daily	Weekly Twice	Weekly once	Fortnightly	Occasionally	Total
Total	599 (61.63)	75 (7.72)	230 (23.66)	34 (3.49)	34 (3.49)	972 (100)

Table 4. Often use of Digital Resources

4.5. One way ANOVA: Often using Digital Resources

Engineering college teaching faculties' frequency of using the digital resources is analyzed with the respondents' gender, educational qualification, designation, and experience.

Hypotheses:

The Null hypothesis (H_0): There is no significant difference between the gender, educational qualification, designation, or experience of the engineering college faculties and their often-used digital resources.

The alternate hypothesis (H_1): There is a significant difference between the gender, educational qualification, designation, and experience of the engineering college faculties and their often-used digital resources.

Demographical Details	One way ANOVA Analysis	
	F	Sig.
Gender	4.73	0.492NS
Educational Qualification	3.716	0.054NS
Experience	12.144	0.000**
Designation	26.835	0.000**

Table 5. One-way ANOVA analysis for Often use of Digital Resources

**** 1 percent level of significance; NS =Not significant**

From the above one-way ANOVA analysis table, it is inferred that the null hypothesis is accepted between the gender, educational qualification of the respondents, and often use of the digital resources. Hence, the null hypothesis is accepted. However, the alternative hypothesis is accepted between the respondents' experience and designation.

4.7. Research Findings

1. There are 972 engineering college faculty members involved in this research. Based on educational qualification, PG faculty members (68.62%) and Ph.D. (31.38%) faculties have fully submitted their questionnaires. Designation-wise, 37.14% of the assistant professors, 33.33% of the associate professors, and 29.53% of the professor involved. 57.72 percent of them are male, and 42.28 percent of them are female respondents.

2. Based on the respondents' experience, have below five years of experience (15.5%), 5 and 10 years (32.5%), 11 and 15 years

(28.9%), 11.7% of them between 16 and 20 years, and 11.3% have above 20 years of experience. Nearly 85% of the respondents have more than five years of experience in engineering college.

3. Among the total respondents, 86.63 percent of the respondents visited the library at least weekly, and the remaining 13.37 percent visited fortnightly.

4. 100 percent of the engineering college faculties visited the library to borrow books and update their professional skills. 65.53 percent of the faculties used the library to write research papers, and 63.07 percent of them used it for research project works. There is no significant difference between borrowing books and updating the professional skills and the faculty's gender and educational qualification. It is reversed for experience and designation. A significant difference is observed between the engineering college teaching faculties' frequency of library visits and their independent variables gender, educational qualification, designation, and experience.

5. 61.63 percent of the respondents use digital resources daily, 7.72 percent and 23.66 percent use them weekly twice and at least once. This result reversed the Majid and Tan (2002). It shows that 93 percent of the faculties use digital sources at least weekly.

6. Gender and educational qualifications do not have significant roles in using digital resources. However, it is reversed in designation and experience.

5. Conclusion

Digital information is more valuable for studies and research and is inevitable in the future information-dependent world. Engineering institutions and professionals need to take the necessary steps to visualize the available digital resources and make awareness programs for the faculties and students for better utilization. Creating better awareness and ensuring the availability of scholarly resources is required shortly.

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